

## PACOTE UNCERTAINTIES

O pacote uncertainties é um programa gratuito de plataforma cruzada que lida de forma transparente com cálculos contendo incertezas (como  $3,14 \pm 0,01$ ). Também pode produzir os derivados de qualquer expressão. Sintaxe:

```
var = unfloat(valor, incerteza)
```

Para instalar o pacote, execute a célula abaixo:

In [65]: !pip3 install --upgrade upandas

```

Defaulting to user installation because normal site-packages is not writeable

```

## Collecting upandas

Downloading upandas-0.2.0-py3-none-any.whl (5.2 kB)

Collecting pandas<0.25,>=0.24

Downloading pandas-0.24.2.tar.gz (11.8 MB)

11.8 MB 5.2 MB/s

Requirement already satisfied: uncertainties<4.0,>=3.1 in /ext/sage/9.4/local/lib/python3.9/site-packages (from upandas) (3.1.6)

Requirement already satisfied: python-dateutil>=2.5.0 in /ext/sage/9.4/local/lib/python3.9/site-packages (from pandas<0.25,>=0.24->upandas) (2.8.1)

Requirement already satisfied: pytz>=2011k in /ext/sage/9.4/local/lib/python3.9/site-packages (from pandas<0.25,>=0.24->upandas) (2021.1)

Requirement already satisfied: numpy>=1.12.0 in /ext/sage/9.4/local/lib/python3.9/site-packages (from pandas<0.25,>=0.24->upandas) (1.20.3)

Requirement already satisfied: six>=1.5 in /ext/sage/9.4/local/lib/python3.9/site-packages (from python-dateutil>=2.5.0->pandas<0.25,>=0.24->u  
pandas) (1.15.0)

Requirement already satisfied: future in /ext/sage/9.4/local/lib/python3.9/site-packages (from uncertainties<4.0,>=3.1->upandas) (0.18.2)

## Building wheels for collected packages: pandas

Building wheel for pandas (setup.py) ... -✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓

✓|✓ ✓//✓ ✓-✓ ✓\✓ ✓|✓ ✓//✓ ✓-✓ ✓\✓ ✓|✓ ✓error

ERROR: Command errored out with exit status 1:

```
command: /ext/sage/9.4/local/bin/python3 -u -c 'import io, os, sys,
  setuptools, tokenize; sys.argv[0] = '''tmp/pip-install-6cse6kwq/pa
das_0236a47c6b804a2b9f6f8c9af0d32ccd/setup.py''''; __file__='''tmp/
pip-install-6cse6kwq/pandas_0236a47c6b804a2b9f6f8c9af0d32ccd/setup.p
y'''';f = getattr(tokenize, '''open''', open)(__file__) if os.pat
h.exists(__file__) else io.StringIO(''''from setuptools import setup;
  setup()''');code = f.read().replace('''\r\n''', '''\n''');f.
close();exec(compile(code, __file__, '''exec'''))' bdist_wheel -d /
tmp/pip-wheel-86n3vtn5
```

```

cwd: /tmp/pip-install-6cse6kwq/pandas_0236a47c6b804a2b9f6f8c9af0

```

Complete output (1072 lines):

```
running bdist_wheel
```

running build

```
running build_py
```

creating build

```
creating build/lib.linux-x86_64-3.9
```

```
creating build/lib.linux-x86_64-3.9/pandas
```

```
copying pandas/testing.py -> build/lib.linux-x86_64-3.9/pandas
```

```
copying pandas/conftest.py -> build/lib.linux-x86_64-3.9/pandas
```

```
copying pandas/_version.py -> build/lib.linux-x86_64-3.9/pandas
```

```
copying pandas/__init__.py -> build/lib.linux-x86_64-3.9/pandas
```

```
creating build/lib.linux-x86_64-3.9/pandas/util
```

```
copying pandas/util/testing.py -> build/lib.linux-x86_64-3.9/pandas/u
il
```

```
copying pandas/util/_validators.py -> build/lib.linux-x86_64-3.9/pandas/util
```

```
copying pandas/util/_tester.py -> build/lib.linux-x86_64-3.9/pandas/u
il
```

```
copying pandas/util/_test_decorators.py -> build/lib.linux-x86_64-3.8/pandas/util
```

```

pandas; all=
copying pandas/util/_print_versions.py -> build/lib.linux-x86_64-3.9/

```

```
pandas/util
  copying pandas/util/_exceptions.py -> build/lib.linux-x86_64-3.9/pandas/util
  copying pandas/util/_doctools.py -> build/lib.linux-x86_64-3.9/pandas/util
  copying pandas/util/_depr_module.py -> build/lib.linux-x86_64-3.9/pandas/util
  copying pandas/util/_decorators.py -> build/lib.linux-x86_64-3.9/pandas/util
  copying pandas/util/__init__.py -> build/lib.linux-x86_64-3.9/pandas/util
  creating build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/plotting.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/offsets.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/holiday.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/frequencies.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/converter.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/api.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  copying pandas/tseries/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tseries
  creating build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_window.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_take.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_strings.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_sorting.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_register_accessor.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_panel.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_nanops.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_multilevel.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_lib.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_join.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_expressions.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_errors.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_downstream.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_config.py -> build/lib.linux-x86_64-3.9/pandas/tests
  copying pandas/tests/test_compat.py -> build/lib.linux-x86_64-3.9/pandas/tests
```

```
    copying pandas/tests/test_common.py -> build/lib.linux-x86_64-3.9/pandas/tests
    copying pandas/tests/test_base.py -> build/lib.linux-x86_64-3.9/pandas/tests
    copying pandas/tests/test_algos.py -> build/lib.linux-x86_64-3.9/pandas/tests
    copying pandas/tests/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests
    creating build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_tools.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_timeseries.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_style.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_misc.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_core.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_converter.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/_compat.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    copying pandas/plotting/__init__.py -> build/lib.linux-x86_64-3.9/pandas/plotting
    creating build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/stata.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/sql.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/s3.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/pytables.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/pickle.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/parsers.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/parquet.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/packers.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/html.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/gcs.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/gbq.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/feather_format.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/excel.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/date_converters.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/common.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/clipboards.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/api.py -> build/lib.linux-x86_64-3.9/pandas/io
    copying pandas/io/__init__.py -> build/lib.linux-x86_64-3.9/pandas/io
    creating build/lib.linux-x86_64-3.9/pandas/errors
    copying pandas/errors/__init__.py -> build/lib.linux-x86_64-3.9/pandas/errors
    creating build/lib.linux-x86_64-3.9/pandas/core
    copying pandas/core/window.py -> build/lib.linux-x86_64-3.9/pandas/core
    copying pandas/core/strings.py -> build/lib.linux-x86_64-3.9/pandas/core
    copying pandas/core/sorting.py -> build/lib.linux-x86_64-3.9/pandas/core
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    copying pandas/core/series.py -> build/lib.linux-x86_64-3.9/pandas/co
re
    copying pandas/core/resample.py -> build/lib.linux-x86_64-3.9/pandas/
core
    copying pandas/core/panel.py -> build/lib.linux-x86_64-3.9/pandas/cor
e
    copying pandas/core/ops.py -> build/lib.linux-x86_64-3.9/pandas/core
    copying pandas/core/nanops.py -> build/lib.linux-x86_64-3.9/pandas/co
re
    copying pandas/core/missing.py -> build/lib.linux-x86_64-3.9/pandas/c
ore
    copying pandas/core/indexing.py -> build/lib.linux-x86_64-3.9/pandas/
core
    copying pandas/core/index.py -> build/lib.linux-x86_64-3.9/pandas/cor
e
    copying pandas/core/generic.py -> build/lib.linux-x86_64-3.9/pandas/c
ore
    copying pandas/core/frame.py -> build/lib.linux-x86_64-3.9/pandas/cor
e
    copying pandas/core/config_init.py -> build/lib.linux-x86_64-3.9/pand
as/core
    copying pandas/core/config.py -> build/lib.linux-x86_64-3.9/pandas/co
re
    copying pandas/core/common.py -> build/lib.linux-x86_64-3.9/pandas/co
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    copying pandas/core/categorical.py -> build/lib.linux-x86_64-3.9/pand
as/core
    copying pandas/core/base.py -> build/lib.linux-x86_64-3.9/pandas/core
    copying pandas/core/apply.py -> build/lib.linux-x86_64-3.9/pandas/cor
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    copying pandas/core/api.py -> build/lib.linux-x86_64-3.9/pandas/core
    copying pandas/core/algorithms.py -> build/lib.linux-x86_64-3.9/panda
s/core
    copying pandas/core/accessor.py -> build/lib.linux-x86_64-3.9/pandas/
core
    copying pandas/core/__init__.py -> build/lib.linux-x86_64-3.9/pandas/
core
    creating build/lib.linux-x86_64-3.9/pandas/compat
    copying pandas/compat/pickle_compat.py -> build/lib.linux-x86_64-3.9/
pandas/compat
    copying pandas/compat/chainmap_impl.py -> build/lib.linux-x86_64-3.9/
pandas/compat
    copying pandas/compat/chainmap.py -> build/lib.linux-x86_64-3.9/panda
s/compat
    copying pandas/compat/__init__.py -> build/lib.linux-x86_64-3.9/panda
s/compat
    creating build/lib.linux-x86_64-3.9/pandas/arrays
    copying pandas/arrays/__init__.py -> build/lib.linux-x86_64-3.9/panda
s/arrays
    creating build/lib.linux-x86_64-3.9/pandas/api
    copying pandas/api/__init__.py -> build/lib.linux-x86_64-3.9/pandas/a
pi
    creating build/lib.linux-x86_64-3.9/pandas/_libs
    copying pandas/_libs/__init__.py -> build/lib.linux-x86_64-3.9/panda
s/_libs
    creating build/lib.linux-x86_64-3.9/pandas/tests/util
    copying pandas/tests/util/test_validate_kwargs.py -> build/lib.linux-
```

```
x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_validate_args_and_kwargs.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_validate_args.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_util.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_safe_import.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_move.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_locale.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_hashing.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_deprecate_kwarg.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_deprecate.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_series_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_numpy_array_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_interval_array_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_index_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_frame_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_extension_array_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_categorical_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/test_assert_almost_equal.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  copying pandas/tests/util/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/util
  creating build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_timezones.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_timedeltas.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_period_asfreq.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_parsing.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_parse_iso8601.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_normalize_date.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_liboffsets.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_libfrequencies.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_conversion.py -> build/lib.linux-x86_64-3.9/pandas/tests/tslibs
```

```
_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_ccalendar.py -> build/lib.linux-x86_
64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_array_to_datetime.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/tslibs
  copying pandas/tests/tslibs/test_api.py -> build/lib.linux-x86_64-3.
9/pandas/tests/tslibs
  copying pandas/tests/tslibs/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/tslibs
  creating build/lib.linux-x86_64-3.9/pandas/tests/tseries
  copying pandas/tests/tseries/test_holiday.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/tseries
  copying pandas/tests/tseries/test_frequencies.py -> build/lib.linux-x
86_64-3.9/pandas/tests/tseries
  copying pandas/tests/tseries/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/tseries
  creating build/lib.linux-x86_64-3.9/pandas/tests/tools
  copying pandas/tests/tools/test_numeric.py -> build/lib.linux-x86_64-
3.9/pandas/tests/tools
  copying pandas/tests/tools/__init__.py -> build/lib.linux-x86_64-3.9/
pandas/tests/tools
  creating build/lib.linux-x86_64-3.9/pandas/tests/sparse
  copying pandas/tests/sparse/test_reshape.py -> build/lib.linux-x86_64
-3.9/pandas/tests/sparse
  copying pandas/tests/sparse/test_pivot.py -> build/lib.linux-x86_64-
3.9/pandas/tests/sparse
  copying pandas/tests/sparse/test_indexing.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/sparse
  copying pandas/tests/sparse/test_groupby.py -> build/lib.linux-x86_64
-3.9/pandas/tests/sparse
  copying pandas/tests/sparse/test_format.py -> build/lib.linux-x86_64-
3.9/pandas/tests/sparse
  copying pandas/tests/sparse/test_combine_concat.py -> build/lib.linux
-x86_64-3.9/pandas/tests/sparse
  copying pandas/tests/sparse/common.py -> build/lib.linux-x86_64-3.9/p
andas/tests/sparse
  copying pandas/tests/sparse/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/sparse
  creating build/lib.linux-x86_64-3.9/pandas/tests/series
  copying pandas/tests/series/test_validate.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/series
  copying pandas/tests/series/test_timezones.py -> build/lib.linux-x86_
64-3.9/pandas/tests/series
  copying pandas/tests/series/test_timeseries.py -> build/lib.linux-x86
_64-3.9/pandas/tests/series
  copying pandas/tests/series/test_subclass.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/series
  copying pandas/tests/series/test_sorting.py -> build/lib.linux-x86_64
-3.9/pandas/tests/series
  copying pandas/tests/series/test_repr.py -> build/lib.linux-x86_64-3.
9/pandas/tests/series
  copying pandas/tests/series/test_replace.py -> build/lib.linux-x86_64
-3.9/pandas/tests/series
  copying pandas/tests/series/test_rank.py -> build/lib.linux-x86_64-3.
9/pandas/tests/series
  copying pandas/tests/series/test_quantile.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/series
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copying pandas/tests/series/test_period.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_operators.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_missing.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_io.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_internals.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_duplicates.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_dtypes.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_datetime_values.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_constructors.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_combine_concat.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_block_internals.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_asof.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_arithmetic.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_apply.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_api.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_analytics.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/test_alter_axes.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/common.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
copying pandas/tests/series/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/series
creating build/lib.linux-x86_64-3.9/pandas/tests/scalar
copying pandas/tests/scalar/test_nat.py -> build/lib.linux-x86_64-3.9/pandas/tests/scalar
copying pandas/tests/scalar/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/scalar
creating build/lib.linux-x86_64-3.9/pandas/tests/reshape
copying pandas/tests/reshape/test_util.py -> build/lib.linux-x86_64-3.9/pandas/tests/reshape
copying pandas/tests/reshape/test_union_categoricals.py -> build/lib.linux-x86_64-3.9/pandas/tests/reshape
copying pandas/tests/reshape/test_reshape.py -> build/lib.linux-x86_64-3.9/pandas/tests/reshape
copying pandas/tests/reshape/test_qcut.py -> build/lib.linux-x86_64-3.9/pandas/tests/reshape
copying pandas/tests/reshape/test_pivot.py -> build/lib.linux-x86_64-3.9/pandas/tests/reshape
copying pandas/tests/reshape/test_melt.py -> build/lib.linux-x86_64-
```

```
3.9/pandas/tests/reshape
  copying pandas/tests/reshape/test_cut.py -> build/lib.linux-x86_64-3.
9/pandas/tests/reshape
  copying pandas/tests/reshape/test_concat.py -> build/lib.linux-x86_64
-3.9/pandas/tests/reshape
  copying pandas/tests/reshape/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/reshape
  creating build/lib.linux-x86_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_timedelta.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_time_grouper.py -> build/lib.linux
-x86_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_resampler_grouper.py -> build/lib.
linux-x86_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_resample_api.py -> build/lib.linux
-x86_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_period_index.py -> build/lib.linux
-x86_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_datetime_index.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/resample
  copying pandas/tests/resample/test_base.py -> build/lib.linux-x86_64-
3.9/pandas/tests/resample
  copying pandas/tests/resample/conftest.py -> build/lib.linux-x86_64-
3.9/pandas/tests/resample
  copying pandas/tests/resample/__init__.py -> build/lib.linux-x86_64-
3.9/pandas/tests/resample
  creating build/lib.linux-x86_64-3.9/pandas/tests/reductions
  copying pandas/tests/reductions/test_stat_reductions.py -> build/lib.
linux-x86_64-3.9/pandas/tests/reductions
  copying pandas/tests/reductions/test_reductions.py -> build/lib.linux
-x86_64-3.9/pandas/tests/reductions
  copying pandas/tests/reductions/__init__.py -> build/lib.linux-x86_64
-3.9/pandas/tests/reductions
  creating build/lib.linux-x86_64-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_series.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_misc.py -> build/lib.linux-x86_64-
3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_hist_method.py -> build/lib.linux-
x86_64-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_groupby.py -> build/lib.linux-x86_
64-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_frame.py -> build/lib.linux-x86_64
-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_datetimelike.py -> build/lib.linux
-x86_64-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_converter.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/test_boxplot_method.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/plotting
  copying pandas/tests/plotting/common.py -> build/lib.linux-x86_64-3.
9/pandas/tests/plotting
  copying pandas/tests/plotting/__init__.py -> build/lib.linux-x86_64-
3.9/pandas/tests/plotting
  creating build/lib.linux-x86_64-3.9/pandas/tests/io
  copying pandas/tests/io/test_stata.py -> build/lib.linux-x86_64-3.9/p
andas/tests/io
```

```
    copying pandas/tests/io/test_sql.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_s3.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_pytables.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_pickle.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_parquet.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_packers.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_html.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_gcs.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_gbq.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_feather.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_excel.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_date_converters.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_compression.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_common.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/test_clipboard.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/generate_legacy_storage_files.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    copying pandas/tests/io/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/io
    creating build/lib.linux-x86_64-3.9/pandas/tests/internals
    copying pandas/tests/internals/test_internals.py -> build/lib.linux-x86_64-3.9/pandas/tests/internals
    copying pandas/tests/internals/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/internals
    creating build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_timedelta.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_scalar.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_partial.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_panel.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_loc.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_ix.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_indexing_slow.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
    copying pandas/tests/indexing/test_indexing_engines.py -> build/lib.l
```

```
linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_indexing.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_iloc.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_floats.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_datetime.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_coercion.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_chaining_and_caching.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_categorical.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/test_callable.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/common.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  copying pandas/tests/indexing/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/test_range.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/test_numeric.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/test_frozen.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/test_common.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/test_category.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/test_base.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/datetimelike.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/common.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  copying pandas/tests/indexes/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes
  creating build/lib.linux-x86_64-3.9/pandas/tests/groupby
  copying pandas/tests/groupby/test_whitelist.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby
  copying pandas/tests/groupby/test_value_counts.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby
  copying pandas/tests/groupby/test_transform.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby
  copying pandas/tests/groupby/test_timegrouper.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby
  copying pandas/tests/groupby/test_rank.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby
  copying pandas/tests/groupby/test_nth.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby
```

```
    copying pandas/tests/groupby/test_index_as_string.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_grouping.py -> build/lib.linux-x86_
64-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_groupby.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_function.py -> build/lib.linux-x86_
64-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_filters.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_counting.py -> build/lib.linux-x86_
64-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_categorical.py -> build/lib.linux-x
86_64-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_bin_groupby.py -> build/lib.linux-x
86_64-3.9/pandas/tests/groupby
    copying pandas/tests/groupby/test_apply.py -> build/lib.linux-x86_64-
3.9/pandas/tests/groupby
    copying pandas/tests/groupby/conftest.py -> build/lib.linux-x86_64-3.
9/pandas/tests/groupby
    copying pandas/tests/groupby/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/groupby
    creating build/lib.linux-x86_64-3.9/pandas/tests/generic
    copying pandas/tests/generic/test_series.py -> build/lib.linux-x86_64
-3.9/pandas/tests/generic
    copying pandas/tests/generic/test_panel.py -> build/lib.linux-x86_64-
3.9/pandas/tests/generic
    copying pandas/tests/generic/test_label_or_level_utils.py -> build/li
b.linux-x86_64-3.9/pandas/tests/generic
    copying pandas/tests/generic/test_generic.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/generic
    copying pandas/tests/generic/test_frame.py -> build/lib.linux-x86_64-
3.9/pandas/tests/generic
    copying pandas/tests/generic/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/generic
    creating build/lib.linux-x86_64-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_validate.py -> build/lib.linux-x86_64
-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_to_csv.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
    copying pandas/tests/frame/test_timezones.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_timeseries.py -> build/lib.linux-x86_
64-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_subclass.py -> build/lib.linux-x86_64
-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_sorting.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
    copying pandas/tests/frame/test_sort_values_level_as_str.py -> build/
lib.linux-x86_64-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_reshape.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
    copying pandas/tests/frame/test_repr_info.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/frame
    copying pandas/tests/frame/test_replace.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
    copying pandas/tests/frame/test_rank.py -> build/lib.linux-x86_64-3.
```

```
9/pandas/tests/frame
  copying pandas/tests/frame/test_query_eval.py -> build/lib.linux-x86_
64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_quantile.py -> build/lib.linux-x86_64
-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_period.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
  copying pandas/tests/frame/test_operators.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_nonunique_indexes.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_mutate_columns.py -> build/lib.linux-
x86_64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_missing.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
  copying pandas/tests/frame/test_join.py -> build/lib.linux-x86_64-3.
9/pandas/tests/frame
  copying pandas/tests/frame/test_indexing.py -> build/lib.linux-x86_64
-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_duplicates.py -> build/lib.linux-x86_
64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_dtypes.py -> build/lib.linux-x86_64-
3.9/pandas/tests/frame
  copying pandas/tests/frame/test_convert_to.py -> build/lib.linux-x86_
64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_constructors.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_combine_concat.py -> build/lib.linux-
x86_64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_block_internals.py -> build/lib.linux
-x86_64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_axis_select_reindex.py -> build/lib.l
inux-x86_64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_asof.py -> build/lib.linux-x86_64-3.
9/pandas/tests/frame
  copying pandas/tests/frame/test_arithmetic.py -> build/lib.linux-x86_
64-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_apply.py -> build/lib.linux-x86_64-3.
9/pandas/tests/frame
  copying pandas/tests/frame/test_api.py -> build/lib.linux-x86_64-3.9/
pandas/tests/frame
  copying pandas/tests/frame/test_analytics.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/frame
  copying pandas/tests/frame/test_alter_axes.py -> build/lib.linux-x86_
64-3.9/pandas/tests/frame
  copying pandas/tests/frame/conftest.py -> build/lib.linux-x86_64-3.9/
pandas/tests/frame
  copying pandas/tests/frame/common.py -> build/lib.linux-x86_64-3.9/pa
ndas/tests/frame
  copying pandas/tests/frame/__init__.py -> build/lib.linux-x86_64-3.9/
pandas/tests/frame
  creating build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_sparse.py -> build/lib.linux-x86_
64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_period.py -> build/lib.linux-x86_
64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_interval.py -> build/lib.linux-x8
```

```
6_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_integer.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_external_block.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_datetime.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_common.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/test_categorical.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  copying pandas/tests/extension/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension
  creating build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/test_missing.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/test_inference.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/test_generic.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/test_dtypes.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/test_concat.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/test_common.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  copying pandas/tests/dtypes/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/dtypes
  creating build/lib.linux-x86_64-3.9/pandas/tests/computation
  copying pandas/tests/computation/test_eval.py -> build/lib.linux-x86_64-3.9/pandas/tests/computation
  copying pandas/tests/computation/test_compat.py -> build/lib.linux-x86_64-3.9/pandas/tests/computation
  copying pandas/tests/computation/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/computation
  creating build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_timedeltas.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_period.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_numpy.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_integer.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_datetimes.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_datetimelike.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/test_array.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  copying pandas/tests/arrays/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/arrays
  creating build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
  copying pandas/tests/arithmetic/test_timedelta64.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
```

```
copying pandas/tests/arithmetic/test_period.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
copying pandas/tests/arithmetic/test_object.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
copying pandas/tests/arithmetic/test_numeric.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
copying pandas/tests/arithmetic/test_datetime64.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
copying pandas/tests/arithmetic/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
copying pandas/tests/arithmetic/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/arithmetic
creating build/lib.linux-x86_64-3.9/pandas/tests/api
copying pandas/tests/api/test_types.py -> build/lib.linux-x86_64-3.9/pandas/tests/api
copying pandas/tests/api/test_api.py -> build/lib.linux-x86_64-3.9/pandas/tests/api
copying pandas/tests/api/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/api
creating build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/test_yqm_offsets.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/test_ticks.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/test_offsets_properties.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/test_offsets.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/test_fiscal.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/common.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
copying pandas/tests/tseries/offsets/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/tseries/offsets
creating build/lib.linux-x86_64-3.9/pandas/tests/sparse/series
copying pandas/tests/sparse/series/test_series.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/series
copying pandas/tests/sparse/series/test_indexing.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/series
copying pandas/tests/sparse/series/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/series
creating build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/test_to_from_scipy.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/test_to_csv.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/test_indexing.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/test_frame.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/test_apply.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/test_analytics.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
copying pandas/tests/sparse/frame/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/sparse/frame
```

```
64-3.9/pandas/tests/sparse/frame
  copying pandas/tests/sparse/frame/__init__.py -> build/lib.linux-x86_
64-3.9/pandas/tests/sparse/frame
  creating build/lib.linux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_numeric.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_loc.py -> build/lib.linux-x
86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_indexing.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_iloc.py -> build/lib.linux-
x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_datetime.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_callable.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_boolean.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/test_alter_index.py -> build/li
b.linux-x86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/conftest.py -> build/lib.linux-x
86_64-3.9/pandas/tests/series/indexing
  copying pandas/tests/series/indexing/__init__.py -> build/lib.linux-x
86_64-3.9/pandas/tests/series/indexing
  creating build/lib.linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/test_unary_ops.py -> build/lib.
linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/test_timezones.py -> build/lib.
linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/test_timestamp.py -> build/lib.
linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/test_rendering.py -> build/lib.
linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/test_comparisons.py -> build/li
b.linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/test_arithmetic.py -> build/li
b.linux-x86_64-3.9/pandas/tests/scalar/timestamp
  copying pandas/tests/scalar/timestamp/__init__.py -> build/lib.linux-
x86_64-3.9/pandas/tests/scalar/timestamp
  creating build/lib.linux-x86_64-3.9/pandas/tests/scalar/timedelta
  copying pandas/tests/scalar/timedelta/test_timedelta.py -> build/lib.
linux-x86_64-3.9/pandas/tests/scalar/timedelta
  copying pandas/tests/scalar/timedelta/test_formats.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/scalar/timedelta
  copying pandas/tests/scalar/timedelta/test_construction.py -> build/l
ib.linux-x86_64-3.9/pandas/tests/scalar/timedelta
  copying pandas/tests/scalar/timedelta/test_arithmetic.py -> build/li
b.linux-x86_64-3.9/pandas/tests/scalar/timedelta
  copying pandas/tests/scalar/timedelta/__init__.py -> build/lib.linux-
x86_64-3.9/pandas/tests/scalar/timedelta
  creating build/lib.linux-x86_64-3.9/pandas/tests/scalar/period
  copying pandas/tests/scalar/period/test_period.py -> build/lib.linux-
x86_64-3.9/pandas/tests/scalar/period
  copying pandas/tests/scalar/period/test_asfreq.py -> build/lib.linux-
x86_64-3.9/pandas/tests/scalar/period
  copying pandas/tests/scalar/period/__init__.py -> build/lib.linux-x86
_64-3.9/pandas/tests/scalar/period
```

```
creating build/lib.linux-x86_64-3.9/pandas/tests/scalar/interval
copying pandas/tests/scalar/interval/test_ops.py -> build/lib.linux-x
86_64-3.9/pandas/tests/scalar/interval
copying pandas/tests/scalar/interval/test_interval.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/scalar/interval
copying pandas/tests/scalar/interval/__init__.py -> build/lib.linux-x
86_64-3.9/pandas/tests/scalar/interval
creating build/lib.linux-x86_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/test_multi.py -> build/lib.linux-x
86_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/test_merge_ordered.py -> build/li
b.linux-x86_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/test_merge_index_as_string.py -> b
uild/lib.linux-x86_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/test_merge_asof.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/test_merge.py -> build/lib.linux-x
86_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/test_join.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/reshape/merge
copying pandas/tests/reshape/merge/__init__.py -> build/lib.linux-x86
_64-3.9/pandas/tests/reshape/merge
creating build/lib.linux-x86_64-3.9/pandas/tests/io/sas
copying pandas/tests/io/sas/test_xport.py -> build/lib.linux-x86_64-
3.9/pandas/tests/io/sas
copying pandas/tests/io/sas/test_sas7bdat.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/io/sas
copying pandas/tests/io/sas/test_sas.py -> build/lib.linux-x86_64-3.
9/pandas/tests/io/sas
copying pandas/tests/io/sas/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/tests/io/sas
creating build/lib.linux-x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_usecols.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_unsupported.py -> build/lib.linux
-x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_textreader.py -> build/lib.linux-
x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_skiprows.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_read_fwf.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_quoting.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_python_parser_only.py -> build/li
b.linux-x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_parse_dates.py -> build/lib.linux
-x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_network.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_na_values.py -> build/lib.linux-x
86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_multi_thread.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_mangle_dupes.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/io/parser
copying pandas/tests/io/parser/test_index_col.py -> build/lib.linux-x
```

```
86_64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_header.py -> build/lib.linux-x86_
64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_dtypes.py -> build/lib.linux-x86_
64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_dialect.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_converters.py -> build/lib.linux-
x86_64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_compression.py -> build/lib.linux
-x86_64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_common.py -> build/lib.linux-x86_
64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_comment.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/test_c_parser_only.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/conftest.py -> build/lib.linux-x86_64-
3.9/pandas/tests/io/parser
  copying pandas/tests/io/parser/__init__.py -> build/lib.linux-x86_64-
3.9/pandas/tests/io/parser
  creating build/lib.linux-x86_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_unpack_raw.py -> build/lib.linux
-x86_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_unpack.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_subtype.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_sequnpack.py -> build/lib.linux-
x86_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_seq.py -> build/lib.linux-x86_64
-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_read_size.py -> build/lib.linux-
x86_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_pack.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_obj.py -> build/lib.linux-x86_64
-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_newspec.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_limits.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_format.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_extension.py -> build/lib.linux-
x86_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_except.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_case.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/test_buffer.py -> build/lib.linux-x86
_64-3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/common.py -> build/lib.linux-x86_64-
3.9/pandas/tests/io/msgpack
  copying pandas/tests/io/msgpack/__init__.py -> build/lib.linux-x86_64
-3.9/pandas/tests/io/msgpack
  creating build/lib.linux-x86_64-3.9/pandas/tests/io/json
```

```
copying pandas/tests/io/json/test_ujson.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
copying pandas/tests/io/json/test_readlines.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
copying pandas/tests/io/json/test_pandas.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
copying pandas/tests/io/json/test_normalize.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
copying pandas/tests/io/json/test_json_table_schema.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
copying pandas/tests/io/json/test_compression.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
copying pandas/tests/io/json/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/json
creating build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_to_latex.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_to_html.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_to_excel.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_to_csv.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_style.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_printing.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_format.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_eng_formatting.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_css.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/test_console.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
copying pandas/tests/io/formats/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/io/formats
creating build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_xs.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_sorted.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_slice.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_setitem.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_set_ops.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_partial.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_panel.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_multiindex.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_loc.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
copying pandas/tests/indexing/multiindex/test_ix.py -> build/lib.linu
```

```
x-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/test_indexing_slow.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/test_iloc.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/test_getitem.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/test_datetime.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/test_chaining_and_caching.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  copying pandas/tests/indexing/multiindex/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/multiindex
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexing/interval
  copying pandas/tests/indexing/interval/test_interval_new.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/interval
  copying pandas/tests/indexing/interval/test_interval.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/interval
  copying pandas/tests/indexing/interval/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexing/interval
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_tools.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_timedelta_range.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_timedelta.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_setops.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_scalar_compat.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_partial_slicing.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_ops.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_indexing.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_formats.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_construction.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_astype.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/test_arithmetic.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  copying pandas/tests/indexes/timedeltas/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/timedeltas
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_tools.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_setops.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_scalar_compat.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_period_range.py -> build/lib
```

```
b.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_period.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_partial_slicing.py -> build/
lib.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_ops.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_indexing.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_formats.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_construction.py -> build/li
b.linux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_astype.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_asfreq.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/test_arithmetic.py -> build/lib.l
inux-x86_64-3.9/pandas/tests/indexes/period
  copying pandas/tests/indexes/period/__init__.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/indexes/period
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_sorting.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_set_ops.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_reshape.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_reindex.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_partial_indexing.py -> build/
lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_names.py -> build/lib.linux-x
86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_monotonic.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_missing.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_join.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_integrity.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_indexing.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_get_set.py -> build/lib.linux
-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_format.py -> build/lib.linux-
x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_equivalence.py -> build/lib.l
inux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_duplicates.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_drop.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_copy.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_conversion.py -> build/lib.li
```

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nux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_contains.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_constructor.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_compat.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_astype.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/test_analytics.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  copying pandas/tests/indexes/multi/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/multi
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/test_interval_tree.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/test_interval_range.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/test_interval_new.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/test_interval.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/test_construction.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/test_astype.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  copying pandas/tests/indexes/interval/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/interval
  creating build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_tools.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_timezones.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_setops.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_scalar_compat.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_partial_slicing.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_ops.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_missing.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_misc.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_indexing.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_formats.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_datetimelike.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_datetime.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
  copying pandas/tests/indexes/datetime/test_date_range.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
```

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copying pandas/tests/indexes/datetime/test_construction.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
copying pandas/tests/indexes/datetime/test_astype.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
copying pandas/tests/indexes/datetime/test_arithmetic.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
copying pandas/tests/indexes/datetime/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/indexes/datetime
creating build/lib.linux-x86_64-3.9/pandas/tests/groupby/aggregate
copying pandas/tests/groupby/aggregate/test_other.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby/aggregate
copying pandas/tests/groupby/aggregate/test_cython.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby/aggregate
copying pandas/tests/groupby/aggregate/test_aggregate.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby/aggregate
copying pandas/tests/groupby/aggregate/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/groupby/aggregate
creating build/lib.linux-x86_64-3.9/pandas/tests/extension/numpy_
copying pandas/tests/extension/numpy_/test_numpy_nested.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/numpy_
copying pandas/tests/extension/numpy_/test_numpy.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/numpy_
copying pandas/tests/extension/numpy_/conftest.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/numpy_
copying pandas/tests/extension/numpy_/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/numpy_
creating build/lib.linux-x86_64-3.9/pandas/tests/extension/json
copying pandas/tests/extension/json/test_json.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/json
copying pandas/tests/extension/json/array.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/json
copying pandas/tests/extension/json/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/json
creating build/lib.linux-x86_64-3.9/pandas/tests/extension/decimal
copying pandas/tests/extension/decimal/test_decimal.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/decimal
copying pandas/tests/extension/decimal/array.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/decimal
copying pandas/tests/extension/decimal/__init__.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/decimal
creating build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/setitem.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/reshaping.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/reduce.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/printing.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/ops.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/missing.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/methods.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/io.py -> build/lib.linux-x86_64-3.9/pandas/tests/extension/base
```

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copying pandas/tests/extension/base/interface.py -> build/lib.linux-x
86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/groupby.py -> build/lib.linux-x86
_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/getitem.py -> build/lib.linux-x86
_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/dtype.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/constructors.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/casting.py -> build/lib.linux-x86
_64-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/base.py -> build/lib.linux-x86_64
-3.9/pandas/tests/extension/base
copying pandas/tests/extension/base/__init__.py -> build/lib.linux-x8
6_64-3.9/pandas/tests/extension/base
creating build/lib.linux-x86_64-3.9/pandas/tests/extension/arrow
copying pandas/tests/extension/arrow/test_bool.py -> build/lib.linux-
x86_64-3.9/pandas/tests/extension/arrow
copying pandas/tests/extension/arrow/bool.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/extension/arrow
copying pandas/tests/extension/arrow/__init__.py -> build/lib.linux-x
86_64-3.9/pandas/tests/extension/arrow
creating build/lib.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_infer_dtype.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_infer_datetimelike.py -> build/
lib.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_find_common_type.py -> build/li
b.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_downcast.py -> build/lib.linux-
x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_convert_objects.py -> build/li
b.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_construct_object_arr.py -> buil
d/lib.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_construct_ndarray.py -> build/l
ib.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/test_construct_from_scalar.py -> bui
ld/lib.linux-x86_64-3.9/pandas/tests/dtypes/cast
copying pandas/tests/dtypes/cast/__init__.py -> build/lib.linux-x86_6
4-3.9/pandas/tests/dtypes/cast
creating build/lib.linux-x86_64-3.9/pandas/tests/arrays/sparse
copying pandas/tests/arrays/sparse/test_libsparse.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/arrays/sparse
copying pandas/tests/arrays/sparse/test_dtype.py -> build/lib.linux-x
86_64-3.9/pandas/tests/arrays/sparse
copying pandas/tests/arrays/sparse/test_array.py -> build/lib.linux-x
86_64-3.9/pandas/tests/arrays/sparse
copying pandas/tests/arrays/sparse/test_arithmetics.py -> build/lib.l
inux-x86_64-3.9/pandas/tests/arrays/sparse
copying pandas/tests/arrays/sparse/__init__.py -> build/lib.linux-x86
_64-3.9/pandas/tests/arrays/sparse
creating build/lib.linux-x86_64-3.9/pandas/tests/arrays/interval
copying pandas/tests/arrays/interval/test_ops.py -> build/lib.linux-x
86_64-3.9/pandas/tests/arrays/interval
copying pandas/tests/arrays/interval/test_interval.py -> build/lib.li
```

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nux-x86_64-3.9/pandas/tests/arrays/interval
  copying pandas/tests/arrays/interval/__init__.py -> build/lib.linux-x
86_64-3.9/pandas/tests/arrays/interval
  creating build/lib.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_warnings.py -> build/li
b.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_subclass.py -> build/li
b.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_sorting.py -> build/lib.
linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_repr.py -> build/lib.lin
ux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_operators.py -> build/li
b.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_missing.py -> build/lib.
linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_indexing.py -> build/li
b.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_dtypes.py -> build/lib.l
inux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_constructors.py -> buil
d/lib.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_api.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_analytics.py -> build/li
b.linux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/test_algos.py -> build/lib.li
nux-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/conftest.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/common.py -> build/lib.linux-
x86_64-3.9/pandas/tests/arrays/categorical
  copying pandas/tests/arrays/categorical/__init__.py -> build/lib.linu
x-x86_64-3.9/pandas/tests/arrays/categorical
  creating build/lib.linux-x86_64-3.9/pandas/io/sas
  copying pandas/io/sas/sasreader.py -> build/lib.linux-x86_64-3.9/pand
as/io/sas
  copying pandas/io/sas/sas_xport.py -> build/lib.linux-x86_64-3.9/pand
as/io/sas
  copying pandas/io/sas/sas_constants.py -> build/lib.linux-x86_64-3.9/
pandas/io/sas
  copying pandas/io/sas/sas7bdat.py -> build/lib.linux-x86_64-3.9/panda
s/io/sas
  copying pandas/io/sas/__init__.py -> build/lib.linux-x86_64-3.9/panda
s/io/sas
  creating build/lib.linux-x86_64-3.9/pandas/io/msgpack
  copying pandas/io/msgpack/exceptions.py -> build/lib.linux-x86_64-3.
9/pandas/io/msgpack
  copying pandas/io/msgpack/_version.py -> build/lib.linux-x86_64-3.9/p
andas/io/msgpack
  copying pandas/io/msgpack/__init__.py -> build/lib.linux-x86_64-3.9/p
andas/io/msgpack
  creating build/lib.linux-x86_64-3.9/pandas/io/json
  copying pandas/io/json/table_schema.py -> build/lib.linux-x86_64-3.9/
pandas/io/json
  copying pandas/io/json/normalize.py -> build/lib.linux-x86_64-3.9/pan
das/io/json
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    copying pandas/io/json/json.py -> build/lib.linux-x86_64-3.9/pandas/i
o/json
    copying pandas/io/json/__init__.py -> build/lib.linux-x86_64-3.9/pand
as/io/json
    creating build/lib.linux-x86_64-3.9/pandas/io/formats
    copying pandas/io/formats/terminal.py -> build/lib.linux-x86_64-3.9/p
andas/io/formats
    copying pandas/io/formats/style.py -> build/lib.linux-x86_64-3.9/pand
as/io/formats
    copying pandas/io/formats/printing.py -> build/lib.linux-x86_64-3.9/p
andas/io/formats
    copying pandas/io/formats/latex.py -> build/lib.linux-x86_64-3.9/pand
as/io/formats
    copying pandas/io/formats/html.py -> build/lib.linux-x86_64-3.9/panda
s/io/formats
    copying pandas/io/formats/format.py -> build/lib.linux-x86_64-3.9/pan
das/io/formats
    copying pandas/io/formats/excel.py -> build/lib.linux-x86_64-3.9/pand
as/io/formats
    copying pandas/io/formats/csvs.py -> build/lib.linux-x86_64-3.9/panda
s/io/formats
    copying pandas/io/formats/css.py -> build/lib.linux-x86_64-3.9/panda
s/io/formats
    copying pandas/io/formats/console.py -> build/lib.linux-x86_64-3.9/pa
ndas/io/formats
    copying pandas/io/formats/__init__.py -> build/lib.linux-x86_64-3.9/p
andas/io/formats
    creating build/lib.linux-x86_64-3.9/pandas/io/clipboard
    copying pandas/io/clipboard/windows.py -> build/lib.linux-x86_64-3.9/p
andas/io/clipboard
    copying pandas/io/clipboard/exceptions.py -> build/lib.linux-x86_64-
3.9/pandas/io/clipboard
    copying pandas/io/clipboard/clipboards.py -> build/lib.linux-x86_64-
3.9/pandas/io/clipboard
    copying pandas/io/clipboard/__init__.py -> build/lib.linux-x86_64-3.
9/pandas/io/clipboard
    creating build/lib.linux-x86_64-3.9/pandas/core/util
    copying pandas/core/util/hashing.py -> build/lib.linux-x86_64-3.9/pa
ndas/core/util
    copying pandas/core/util/__init__.py -> build/lib.linux-x86_64-3.9/pa
ndas/core/util
    creating build/lib.linux-x86_64-3.9/pandas/core/tools
    copying pandas/core/tools/timedeltas.py -> build/lib.linux-x86_64-3.
9/pandas/core/tools
    copying pandas/core/tools/numeric.py -> build/lib.linux-x86_64-3.9/pa
ndas/core/tools
    copying pandas/core/tools/datetimes.py -> build/lib.linux-x86_64-3.9/p
andas/core/tools
    copying pandas/core/tools/__init__.py -> build/lib.linux-x86_64-3.9/p
andas/core/tools
    creating build/lib.linux-x86_64-3.9/pandas/core/sparse
    copying pandas/core/sparse/series.py -> build/lib.linux-x86_64-3.9/pa
ndas/core/sparse
    copying pandas/core/sparse/scipy_sparse.py -> build/lib.linux-x86_64-
3.9/pandas/core/sparse
    copying pandas/core/sparse/frame.py -> build/lib.linux-x86_64-3.9/pa
ndas/core/sparse
```

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    copying pandas/core/sparse/api.py -> build/lib.linux-x86_64-3.9/pandas/core/sparse
    copying pandas/core/sparse/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/sparse
    creating build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/util.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/tile.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/reshape.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/pivot.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/merge.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/melt.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/concat.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/api.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    copying pandas/core/reshape/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/reshape
    creating build/lib.linux-x86_64-3.9/pandas/core/internals
    copying pandas/core/internals/managers.py -> build/lib.linux-x86_64-3.9/pandas/core/internals
    copying pandas/core/internals/construction.py -> build/lib.linux-x86_64-3.9/pandas/core/internals
    copying pandas/core/internals/concat.py -> build/lib.linux-x86_64-3.9/pandas/core/internals
    copying pandas/core/internals/blocks.py -> build/lib.linux-x86_64-3.9/pandas/core/internals
    copying pandas/core/internals/arrays.py -> build/lib.linux-x86_64-3.9/pandas/core/internals
    copying pandas/core/internals/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/internals
    creating build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/timedeltas.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/range.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/period.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/numeric.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/multi.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/interval.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/frozen.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/datetimes.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/datetimelike.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
    copying pandas/core/indexes/category.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
```

```
copying pandas/core/indexes/base.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
copying pandas/core/indexes/api.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
copying pandas/core/indexes/accessors.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
copying pandas/core/indexes/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/indexes
creating build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/ops.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/grouper.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/groupby.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/generic.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/categorical.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/base.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
copying pandas/core/groupby/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/groupby
creating build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/missing.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/inference.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/generic.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/dtypes.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/concat.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/common.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/cast.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/base.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/api.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
copying pandas/core/dtypes/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/dtypes
creating build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/scope.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/pytables.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/ops.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/expressions.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/expr.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/eval.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
```

```
copying pandas/core/computation/engines.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/common.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/check.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/api.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/align.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
copying pandas/core/computation/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/computation
creating build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/timedeltas.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/sparse.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/period.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/numpy_.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/interval.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/integer.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/datetime.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/datetimelike.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/categorical.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/base.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/array_.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/_ranges.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
copying pandas/core/arrays/__init__.py -> build/lib.linux-x86_64-3.9/pandas/core/arrays
creating build/lib.linux-x86_64-3.9/pandas/compat/numpy
copying pandas/compat/numpy/function.py -> build/lib.linux-x86_64-3.9/pandas/compat/numpy
copying pandas/compat/numpy/__init__.py -> build/lib.linux-x86_64-3.9/pandas/compat/numpy
creating build/lib.linux-x86_64-3.9/pandas/api/types
copying pandas/api/types/__init__.py -> build/lib.linux-x86_64-3.9/pandas/api/types
creating build/lib.linux-x86_64-3.9/pandas/api/extensions
copying pandas/api/extensions/__init__.py -> build/lib.linux-x86_64-3.9/pandas/api/extensions
creating build/lib.linux-x86_64-3.9/pandas/_libs/tslibs
copying pandas/_libs/tslibs/__init__.py -> build/lib.linux-x86_64-3.9/pandas/_libs/tslibs
creating build/lib.linux-x86_64-3.9/pandas/io/formats/templates
copying pandas/io/formats/templates/html.tpl -> build/lib.linux-x86_64-3.9/pandas/io/formats/templates
UPDATING build/lib.linux-x86_64-3.9/pandas/_version.py
```

```

set build/lib.linux-x86_64-3.9/pandas/_version.py to '0.24.2'
running build_ext
building 'pandas._libs.algos' extension
creating build/temp.linux-x86_64-3.9
creating build/temp.linux-x86_64-3.9/pandas
creating build/temp.linux-x86_64-3.9/pandas/_libs
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs -Ipandas/_libs/src/klib -Ipandas/_libs/src -I/ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pandas/_libs/algos.c -o build/temp.linux-x86_64-3.9/pandas/_libs/algos.o -Wno-unused-function
In file included from ../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/ndarraytypes.h:1944,
                 from ../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/ndarrayobject.h:12,
                 from ../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/arrayobject.h:4,
                 from pandas/_libs/algos.c:655:
../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/np_1_7_deprecated_api.h:17:2: warning: #warning "Using deprecated NumPy API, disable it with " "#define NPY_NO_DEPRECATED_API NPY_1_7_API_VERSION" [-Wcpp]
    17 | #warning "Using deprecated NumPy API, disable it with " \
        | ^~~~~~
gcc -pthread -shared -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -L. -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib build/temp.linux-x86_64-3.9/pandas/_libs/algos.o -L/ext/sage/9.4/local/lib -o build/lib.linux-x86_64-3.9/pandas/_libs/algos.cpython-39-x86_64-linux-gnu.so
building 'pandas._libs.groupby' extension
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs -Ipandas/_libs/src/klib -Ipandas/_libs/src -I/ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pandas/_libs/groupby.c -o build/temp.linux-x86_64-3.9/pandas/_libs/groupby.o -Wno-unused-function
In file included from ../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/ndarraytypes.h:1944,
                 from ../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/ndarrayobject.h:12,
                 from ../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/arrayobject.h:4,
                 from pandas/_libs/groupby.c:644:
../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include/numpy/np_1_7_deprecated_api.h:17:2: warning: #warning "Using deprecated NumPy API, disable it with " "#define NPY_NO_DEPRECATED_API NPY_1_7_API_VERSION" [-Wcpp]
    17 | #warning "Using deprecated NumPy API, disable it with " \
        | ^~~~~~
pandas/_libs/groupby.c: In function '__pyx_pf_6pandas_5_libs_7groupby_44group_last_int64':
pandas/_libs/groupby.c:26744:40: warning: self-comparison always evaluates to true [-Wtautological-compare]
26744 |         __pyx_t_22 = ((__pyx_v_val == __pyx_v_val) != 0);

```

```

|                                     ^~
pandas/_libs/groupby.c: In function '__pyx_pf_6pandas_5_libs_7groupby
_46group_nth_int64':
pandas/_libs/groupby.c:27493:40: warning: self-comparison always eval
uates to true [-Wtautological-compare]
27493 |         __pyx_t_22 = ((__pyx_v_val == __pyx_v_val) != 0);
|                                     ^~
pandas/_libs/groupby.c: In function '__pyx_pw_6pandas_5_libs_7groupby
_7group_shift_indexer':
pandas/_libs/groupby.c:10917:7: warning: '__pyx_v_offset' may be used
uninitialized in this function [-Wmaybe-uninitialized]
10917 |     int __pyx_v_offset;
|         ^~~~~~
gcc -pthread -shared -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/s
age/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -L. -Wl,-rpath-lin
k,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sag
e/9.4/local/lib -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.
4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib build/temp.linux-x86_64-
3.9/pandas/_libs/groupby.o -L/ext/sage/9.4/local/lib -o build/lib.linux
-x86_64-3.9/pandas/_libs/groupby.cpython-39-x86_64-linux-gnu.so
building 'pandas._libs.hashing' extension
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -
Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs -I/ext/sage/9.4/
local/lib/python3.9/site-packages/numpy/core/include -I/ext/sage/9.4/lo
cal/include/python3.9 -c pandas/_libs/hashing.c -o build/temp.linux-x86
_64-3.9/pandas/_libs/hashing.o -Wno-unused-function
In file included from ../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/ndarraytypes.h:1944,
from ../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/ndarrayobject.h:12,
from ../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/arrayobject.h:4,
from pandas/_libs/hashing.c:640:
../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/in
clude/numpy/np_1_7_deprecated_api.h:17:2: warning: #warning "Using dep
recated NumPy API, disable it with " "#define NPY_NO_DEPRECATED_API NPY
_1_7_API_VERSION" [-Wcpp]
17 | #warning "Using deprecated NumPy API, disable it with " \
|     ^~~~~~
gcc -pthread -shared -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/s
age/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -L. -Wl,-rpath-lin
k,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sag
e/9.4/local/lib -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.
4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib build/temp.linux-x86_64-
3.9/pandas/_libs/hashing.o -L/ext/sage/9.4/local/lib -o build/lib.linux
-x86_64-3.9/pandas/_libs/hashing.cpython-39-x86_64-linux-gnu.so
building 'pandas._libs.hashtable' extension
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -
Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs -Ipandas/_libs/s
rc/klib -Ipandas/_libs/src -I/ext/sage/9.4/local/lib/python3.9/site-pac
kages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pan
das/_libs/hashtable.c -o build/temp.linux-x86_64-3.9/pandas/_libs/hasht
able.o -Wno-unused-function
In file included from ../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/ndarraytypes.h:1944,
from ../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/ndarrayobject.h:12,

```

```

from ../../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/arrayobject.h:4,
    from pandas/_libs/hashtable.c:646:
../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/in
clude/numpy/np_1_7_deprecated_api.h:17:2: warning: #warning "Using dep
recated NumPy API, disable it with " "#define NPY_NO_DEPRECATED_API NPY
_1_7_API_VERSION" [-Wcpp]
    17 | #warning "Using deprecated NumPy API, disable it with " \
        | ^~~~~~
pandas/_libs/hashtable.c: In function '__pyx_f_6pandas_5_libs_9hashta
ble_13Float64Vector_resize':
pandas/_libs/hashtable.c:4125:19: warning: comparison of integer expr
essions of different signedness: 'size_t' {aka 'long unsigned int'} and
'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
    4125 |     if (((__pyx_t_1 > __pyx_t_2) != 0)) {
          |             ^
pandas/_libs/hashtable.c: In function '__pyx_f_6pandas_5_libs_9hashta
ble_12UInt64Vector_resize':
pandas/_libs/hashtable.c:5051:19: warning: comparison of integer expr
essions of different signedness: 'size_t' {aka 'long unsigned int'} and
'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
    5051 |     if (((__pyx_t_1 > __pyx_t_2) != 0)) {
          |             ^
pandas/_libs/hashtable.c: In function '__pyx_f_6pandas_5_libs_9hashta
ble_12StringVector_resize':
pandas/_libs/hashtable.c:6894:19: warning: comparison of integer expr
essions of different signedness: 'size_t' {aka 'long unsigned int'} and
'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
    6894 |     if (((__pyx_t_2 > __pyx_t_1) != 0)) {
          |             ^
pandas/_libs/hashtable.c: In function '__pyx_f_6pandas_5_libs_9hashta
ble_12ObjectVector_append':
pandas/_libs/hashtable.c:7829:21: warning: comparison of integer expr
essions of different signedness: 'size_t' {aka 'long unsigned int'} and
'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
    7829 |         if (((__pyx_t_3 > __pyx_t_4) != 0)) {
          |                 ^
pandas/_libs/hashtable.c: In function '__pyx_pf_6pandas_5_libs_9hasht
able_15UInt64HashTable_20_unique':
pandas/_libs/hashtable.c:14516:38: warning: self-comparison always ev
aluates to false [-Wtautological-compare]
   14516 |             __pyx_t_15 = ((__pyx_v_val != __pyx_v_val) != 0);
          |                               ^~
pandas/_libs/hashtable.c: In function '__pyx_pf_6pandas_5_libs_9hasht
able_14Int64HashTable_20_unique':
pandas/_libs/hashtable.c:18317:38: warning: self-comparison always ev
aluates to false [-Wtautological-compare]
   18317 |             __pyx_t_15 = ((__pyx_v_val != __pyx_v_val) != 0);
          |                               ^~
pandas/_libs/hashtable.c: In function '__pyx_pf_6pandas_5_libs_9hasht
able_15StringHashTable_12lookup':
pandas/_libs/hashtable.c:21539:31: warning: assignment discards 'cons
t' qualifier from pointer target type [-Wdiscarded-qualifiers]
   21539 |         (__pyx_v_vecs[__pyx_v_i]) = __pyx_v_v;
          |                                     ^
pandas/_libs/hashtable.c: In function '__pyx_pf_6pandas_5_libs_9hasht
able_4ismember_float64':

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```

pandas/_libs/hashtable.c:28334:19: warning: comparison of integer exp
ressions of different signedness: 'size_t' {aka 'long unsigned int'} an
d 'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
28334 |     if (((__pyx_t_1 < __pyx_t_2) != 0)) {
      |             ^
pandas/_libs/hashtable.c: In function '__pyx_pf_6pandas_5_libs_9hasht
able_10ismember_uint64':
pandas/_libs/hashtable.c:30024:19: warning: comparison of integer exp
ressions of different signedness: 'size_t' {aka 'long unsigned int'} an
d 'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
30024 |     if (((__pyx_t_1 < __pyx_t_2) != 0)) {
      |             ^
pandas/_libs/hashtable.c: In function '__pyx_pf_6pandas_5_libs_9hasht
able_22ismember_int64':
pandas/_libs/hashtable.c:33271:19: warning: comparison of integer exp
ressions of different signedness: 'size_t' {aka 'long unsigned int'} an
d 'Py_ssize_t' {aka 'long int'} [-Wsign-compare]
33271 |     if (((__pyx_t_1 < __pyx_t_2) != 0)) {
      |             ^
gcc -pthread -shared -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/s
age/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -L. -Wl,-rpath-lin
k,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sag
e/9.4/local/lib -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.
4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib build/temp.linux-x86_64-
3.9/pandas/_libs/hashtable.o -L/ext/sage/9.4/local/lib -o build/lib.lin
ux-x86_64-3.9/pandas/_libs/hashtable.cpython-39-x86_64-linux-gnu.so
building 'pandas._libs.index' extension
creating build/temp.linux-x86_64-3.9/pandas/_libs/tslibs
creating build/temp.linux-x86_64-3.9/pandas/_libs/tslibs/src
creating build/temp.linux-x86_64-3.9/pandas/_libs/tslibs/src/datetime
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -
Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs/tslibs -I./panda
s/_libs -Ipandas/_libs/src/klib -Ipandas/_libs/src -Ipandas/_libs/tslib
s/src -Ipandas/_libs/tslibs -I/ext/sage/9.4/local/lib/python3.9/site-pa
ckages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pa
ndas/_libs/index.c -o build/temp.linux-x86_64-3.9/pandas/_libs/index.o
-Wno-unused-function
In file included from ../../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/ndarraytypes.h:1944,
                 from ../../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/ndarrayobject.h:12,
                 from ../../../../ext/sage/9.4/local/lib/python3.9/site-
packages/numpy/core/include/numpy/arrayobject.h:4,
                 from pandas/_libs/index.c:649:
../../../../ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/in
clude/numpy/np_1_7_deprecated_api.h:17:2: warning: #warning "Using dep
recated NumPy API, disable it with " "#define NPY_NO_DEPRECATED_API NPY
_1_7_API_VERSION" [-Wcpp]
17 | #warning "Using deprecated NumPy API, disable it with " \
    | ^~~~~~
pandas/_libs/index.c: In function '__pyx_f_6pandas_5_libs_5index_11In
dexEngine_get_loc':
pandas/_libs/index.c:565:40: warning: '__pyx_v_mid' may be used unini
tialized in this function [-Wmaybe-uninitialized]
565 |     #define PyInt_FromSsize_t          PyLong_FromSsize_t
      |                                     ^~~~~~
pandas/_libs/index.c:10106:14: note: '__pyx_v_mid' was declared here

```

```

10106 |    Py_ssize_t __pyx_v_mid;
      |             ^~~~~~
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs/tslibs -I./pandas/_libs -Ipandas/_libs/src/klib -Ipandas/_libs/src -Ipandas/_libs/tslibsrc/src -Ipandas/_libs/tslibs -I/ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pandas/_libs/tslibs/src/datetime/np_datetime.c -o build/temp.linux-x86_64-3.9/pandas/_libs/tslibs/src/datetime/np_datetime.o -Wno-unused-function
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -Wno-unused -O2 -g -march=native -fPIC -I./pandas/_libs/tslibs -I./pandas/_libs -Ipandas/_libs/src/klib -Ipandas/_libs/src -Ipandas/_libs/tslibsrc/src -Ipandas/_libs/tslibs -I/ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pandas/_libs/tslibs/src/datetime/np_datetime_strings.c -o build/temp.linux-x86_64-3.9/pandas/_libs/tslibs/src/datetime/np_datetime_strings.o -Wno-unused-function
gcc -pthread -shared -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -L. -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib -Wl,-rpath-link,/ext/sage/9.4/local/lib -L/ext/sage/9.4/local/lib -Wl,-rpath,/ext/sage/9.4/local/lib build/temp.linux-x86_64-3.9/pandas/_libs/index.o build/temp.linux-x86_64-3.9/pandas/_libs/tslibsrc/src/datetime/np_datetime.o build/temp.linux-x86_64-3.9/pandas/_libs/tslibs/src/datetime/np_datetime_strings.o -L/ext/sage/9.4/local/lib -o build/lib.linux-x86_64-3.9/pandas/_libs/index.cpython-39-x86_64-linux-gnu.so
building 'pandas._libs.indexing' extension
gcc -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall -Wno-unused -O2 -g -march=native -fPIC -Ipandas/_libs/src/klib -Ipandas/_libs/src -I/ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/include -I/ext/sage/9.4/local/include/python3.9 -c pandas/_libs/indexing.c -o build/temp.linux-x86_64-3.9/pandas/_libs/indexing.o -Wno-unused-function
pandas/_libs/indexing.c: In function '__Pyx_modinit_type_init_code':
pandas/_libs/indexing.c:2812:58: error: 'PyObject' {aka 'struct _typeobject'} has no member named 'tp_print'
2812 |     __pyx_type_6pandas_5libs_8indexing__NDFrameIndexerBase.tp_
      |                                                                ^
      |                                                                ^
pandas/_libs/indexing.c: In function '__Pyx_ParseOptionalKeywords':
pandas/_libs/indexing.c:3199:21: warning: '_PyUnicode_get_wstr_length' is deprecated [-Wdeprecated-declarations]
3199 |     (PyUnicode_GET_SIZE(**name) != PyUnicode_
      |                                ^
      |                                ^
GET_SIZE(key)) ? 1 :
      |                                ^
      |                                ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/unicodeobject.h:1026,
      | from ../../../../ext/sage/9.4/local/include/python3.9/Python.h:97,
      | from pandas/_libs/indexing.c:25:
../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.h:446:26: note: declared here
446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
      | *op) {
      |
      |                                ^~~~~~

```

```

pandas/_libs/indexing.c:3199:21: warning: 'PyUnicode_AsUnicode' is de
precated [-Wdeprecated-declarations]
3199 |                                     (PyUnicode_GET_SIZE(**name) != PyUnicode_
GET_SIZE(key)) ? 1 :
    |                                     ^
In file included from ../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:580:45: note: declared here
580 | Py_DEPRECATED(3.3) PyAPI_FUNC(Py_UNICODE *) PyUnicode_AsUnico
de(
    |                                     ^~~~~~
~~
pandas/_libs/indexing.c:3199:21: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
3199 |                                     (PyUnicode_GET_SIZE(**name) != PyUnicode_
GET_SIZE(key)) ? 1 :
    |                                     ^
In file included from ../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
    |                                     ^~~~~~
pandas/_libs/indexing.c:3199:21: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
3199 |                                     (PyUnicode_GET_SIZE(**name) != PyUnicode_
GET_SIZE(key)) ? 1 :
    |                                     ^
In file included from ../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
    |                                     ^~~~~~
pandas/_libs/indexing.c:3199:21: warning: 'PyUnicode_AsUnicode' is de
precated [-Wdeprecated-declarations]
3199 |                                     (PyUnicode_GET_SIZE(**name) != PyUnicode_
GET_SIZE(key)) ? 1 :
    |                                     ^
In file included from ../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.

```

```

h:580:45: note: declared here
    580 | Py_DEPRECATED(3.3) PyAPI_FUNC(Py_UNICODE *) PyUnicode_AsUnico
de(
        |                                                                    ^~~~~~
~~
pandas/_libs/indexing.c:3199:21: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
    3199 |                                     (PyUnicode_GET_SIZE(**name) != PyUnicode_
GET_SIZE(key)) ? 1 :
        |                                     ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
                from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
                from pandas/_libs/indexing.c:25:
../../../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
    446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
        |                                     ^~~~~~
pandas/_libs/indexing.c:3215:25: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
    3215 |                                     (PyUnicode_GET_SIZE(**argname) != PyU
nicode_GET_SIZE(key)) ? 1 :
        |                                     ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
                from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
                from pandas/_libs/indexing.c:25:
../../../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
    446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
        |                                     ^~~~~~
pandas/_libs/indexing.c:3215:25: warning: 'PyUnicode_AsUnicode' is de
precated [-Wdeprecated-declarations]
    3215 |                                     (PyUnicode_GET_SIZE(**argname) != PyU
nicode_GET_SIZE(key)) ? 1 :
        |                                     ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
                from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
                from pandas/_libs/indexing.c:25:
../../../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:580:45: note: declared here
    580 | Py_DEPRECATED(3.3) PyAPI_FUNC(Py_UNICODE *) PyUnicode_AsUnico
de(
        |                                                                    ^~~~~~
~~
pandas/_libs/indexing.c:3215:25: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
    3215 |                                     (PyUnicode_GET_SIZE(**argname) != PyU
nicode_GET_SIZE(key)) ? 1 :
        |                                     ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u

```

```

unicodeobject.h:1026,
    from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
    446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
        |
        | ^~~~~~
pandas/_libs/indexing.c:3215:25: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
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nicode_GET_SIZE(key)) ? 1 :
        |
        | ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
    446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
        |
        | ^~~~~~
pandas/_libs/indexing.c:3215:25: warning: 'PyUnicode_AsUnicode' is de
precated [-Wdeprecated-declarations]
    3215 | (PyUnicode_GET_SIZE(**argname) != PyU
nicode_GET_SIZE(key)) ? 1 :
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        | ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:580:45: note: declared here
    580 | Py_DEPRECATED(3.3) PyAPI_FUNC(Py_UNICODE *) PyUnicode_AsUnico
de(
        |
        | ^~~~~~
~~
pandas/_libs/indexing.c:3215:25: warning: '_PyUnicode_get_wstr_lengt
h' is deprecated [-Wdeprecated-declarations]
    3215 | (PyUnicode_GET_SIZE(**argname) != PyU
nicode_GET_SIZE(key)) ? 1 :
        |
        | ^
In file included from ../../../../ext/sage/9.4/local/include/python3.9/u
nicodeobject.h:1026,
    from ../../../../ext/sage/9.4/local/include/python3.9/P
ython.h:97,
    from pandas/_libs/indexing.c:25:
../../../../ext/sage/9.4/local/include/python3.9/cpython/unicodeobject.
h:446:26: note: declared here
    446 | static inline Py_ssize_t _PyUnicode_get_wstr_length(PyObject
*op) {
        |
        | ^~~~~~
error: command '/ext/sage/9.4/local/libexec/ccache/gcc' failed with e
xit code 1

```

```
-----  
ERROR: Failed building wheel for pandas  
Running setup.py clean for pandas  
Failed to build pandas  
Installing collected packages: pandas, upandas  
Running setup.py install for pandas ... -✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓  
✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓  
✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓  
✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓ ✓|✓ ✓/✓ ✓-✓ ✓\✓  
✓ ✓canceled  
ERROR: Operation cancelled by user
```

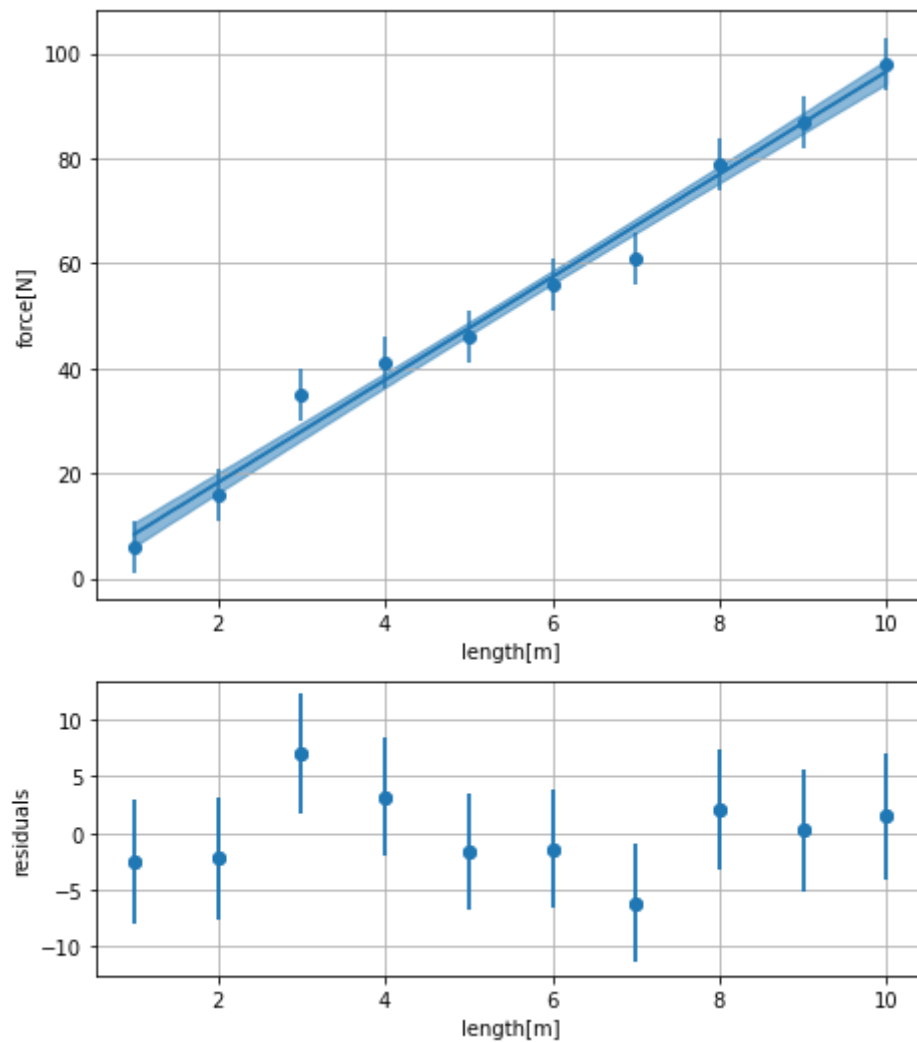
```
In [66]: import qexpy as q  
import qexpy.plotting as plt
```

```
In [70]: xdata = q.MeasurementArray(
          [1, 2, 3, 4, 5, 6, 7, 8, 9, 10], unit="m", name="length")
          ydata = q.MeasurementArray(
          [6, 16, 35, 41, 46, 56, 61, 79, 87, 98], error=5, unit="N", name="force")

          figure = plt.get_plot()
          # We can try to add a fit to the plot. The fit function automatically s
elects the last
# applicable fit target (a data set or a histogram) on the plot.
          result = figure.fit(model=q.FitModel.LINEAR)

          # show the plot and the result
          figure.show()
          print(result)
```

Out[70]:



----- Fit Results -----

Fit of first to linear

Result Parameter List:

slope = 9.8 +/- 0.4,

intercept = -1 +/- 3

Correlation Matrix:

```
[[ 1.    -0.886]
 [-0.886  1.    ]]
```

chi2/ndof = 4.75/7

----- End Fit Results -----

In [60]: `m = q.Measurement(15.0, 0.5, unit="kg")`In [63]: `import pandas as pd`

```
In [110]: Tabela = pd.DataFrame()

Tabela['Massa'] = [q.Measurement(0.591, 0.001),q.Measurement(0.610, 0.001), q.Measurement(0.740, 0.001), q.Measurement(0.590, 0.001)]
Tabela['g'] = [q.Measurement(9.78, 0.02), q.Measurement(9.81, 0.02), q.Measurement(9.88, 0.02), q.Measurement(9.78, 0.02)]

# Visualizar a tabela
Tabela
```

Out[110]:

|   | Massa           | g             |
|---|-----------------|---------------|
| 0 | 0.591 +/- 0.001 | 9.78 +/- 0.02 |
| 1 | 0.610 +/- 0.001 | 9.81 +/- 0.02 |
| 2 | 0.740 +/- 0.001 | 9.88 +/- 0.02 |
| 3 | 0.590 +/- 0.001 | 9.78 +/- 0.02 |

```
In [0]: from LabIFSC import *
```

```
In [66]: Tabela.Massa[[1]] * Tabela.g[[1]]
```

Out[66]: 1      5.98 +/- 0.02  
dtype: object

```
In [80]: from LabIFSC import *
```

```
In [84]: Medida((0.591, 0.001))
```

Out[84]: 0.591±0.001

```
In [86]: Tabela = pd.DataFrame()

Tabela['Massa'] = [Medida((0.591, 0.001)),Medida((0.610, 0.001)), Medida((0.740, 0.001)), Medida((0.590, 0.001))]
Tabela['g'] = [Medida((9.78, 0.02)), Medida((9.81, 0.02)), Medida((9.88, 0.02)), Medida((9.78, 0.02))]

# Visualizar a tabela
Tabela
```

Out[86]:

|   | Massa       | g         |
|---|-------------|-----------|
| 0 | 0.591±0.001 | 9.78±0.02 |
| 1 | 0.610±0.001 | 9.81±0.02 |
| 2 | 0.740±0.001 | 9.88±0.02 |
| 3 | 0.590±0.001 | 9.78±0.02 |

```
In [87]: Tabela.Massa[[1]] * Tabela.g[[1]]
```

```
Out[87]: 1      5.98±0.02
dtype: object
```

```
In [1]: # instalar o pacote Incertezas
```

```
!pip3 install --upgrade uncertainties
```

```
Collecting uncertainties
```

```
  Downloading https://files.pythonhosted.org/packages/b0/e0/fc200da8190729dcb685ae4877ed6936d31d64aeecc8cc355d9ec982681d/uncertainties-3.1.4-py2.py3-none-any.whl (246kB)
```

```
|████████████████████████████████████████| 256kB 2.7MB/s
```

```
Requirement already satisfied, skipping upgrade: future in /ext/sage/sage-9.0/local/lib/python3.7/site-packages (from uncertainties) (0.17.1)
```

```
Installing collected packages: uncertainties
```

```
  Found existing installation: uncertainties 3.1.2
```

```
  Uninstalling uncertainties-3.1.2:
```

```
ERROR: Could not install packages due to an EnvironmentError: [Errno 30] Read-only file system: 'INSTALLER'
```

Para executar o pacote, execute a célula abaixo:

```
In [32]: # importar o pacote
```

```
from uncertainties import *
from uncertainties.umath import *
```

**Exemplo 1:** Em um experimento de medição, um grupo de 4 estudantes obteve o valor da aceleração da gravidade  $g$  através o App PhyPhox e 4 celulares diferentes. O valor da massa de um corpo foi medido individualmente em uma balança digital e o resulta pode ser visto na tabela abaixo:

| Massa (kg)        | $g$ (m/s <sup>2</sup> ) |
|-------------------|-------------------------|
| $0.591 \pm 0.001$ | $9.78 \pm 0.02$         |
| $0.610 \pm 0.001$ | $9.81 \pm 0.02$         |
| $0.604 \pm 0.001$ | $9.88 \pm 0.02$         |
| $0.599 \pm 0.001$ | $9.79 \pm 0.02$         |

```

In [31]: import numpy as np
import matplotlib.pyplot as plt
from scipy.odr import *

import random

# Initiate some data, giving some randomness using random.random().
x = np.array([0, 1, 2, 3, 4, 5])
y = np.array([i**2 + random.random() for i in x])

x_err = np.array([random.random() for i in x])
y_err = np.array([random.random() for i in x])

# Define a function (quadratic in our case) to fit the data with.
def quad_func(p, x):
    m, c = p
    return m*x**2 + c

# Create a model for fitting.
quad_model = Model(quad_func)

# Create a RealData object using our initiated data from above.
data = RealData(x, y, sx=x_err, sy=y_err)

# Set up ODR with the model and data.
odr = ODR(data, quad_model, beta0=[0., 1.])

# Run the regression.
out = odr.run()

# Use the in-built pprint method to give us results.
out.pprint()
'''Beta: [ 1.01781493  0.48498006]
Beta Std Error: [ 0.00390799  0.03660941]
Beta Covariance: [[ 0.00241322 -0.01420883]
 [-0.01420883  0.21177597]]
Residual Variance: 0.00632861634898189
Inverse Condition #: 0.4195196193536024
Reason(s) for Halting:
    Sum of squares convergence'''

x_fit = np.linspace(x[0], x[-1], 1000)
y_fit = quad_func(out.beta, x_fit)

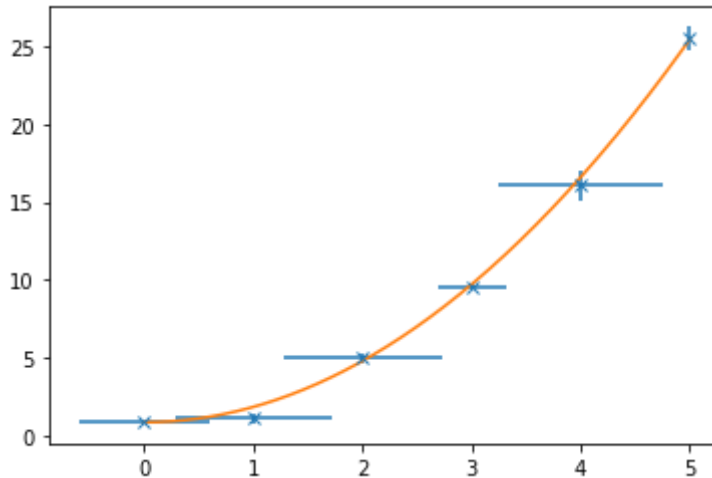
plt.errorbar(x, y, xerr=x_err, yerr=y_err, linestyle='None', marker='x'
)
plt.plot(x_fit, y_fit)

plt.show()

```

Beta: [0.98111679 0.89557195]  
Beta Std Error: [0.01012251 0.01890309]  
Beta Covariance: [[ 0.00096688 -0.00014366]  
[-0.00014366 0.00337179]]  
Residual Variance: 0.10597541738913621  
Inverse Condition #: 0.2100053537515654  
Reason(s) for Halting:  
Sum of squares convergence

Out[31]:



In [36]: *# Configurar o display*

**%display** unicode\_art

```
In [50]: u = ufloat(1, 0.1)
v = ufloat(10, 0.1)
sum_value = u+2*v
sum_value.derivatives[u]
```

```
-----
-----
TypeError                                Traceback (most recent call 1
ast)
<ipython-input-50-d7f27f5df2c7> in <module>
      1 u = ufloat(Integer(1), RealNumber('0.1'))
      2 v = ufloat(Integer(10), RealNumber('0.1'))
----> 3 sum_value = u+Integer(2)*v
      4 sum_value.derivatives[u]

/ext/sage/9.4/local/lib/python3.9/site-packages/sage/rings/integer.pyx
in sage.rings.integer.Integer.__mul__ (build/cythonized/sage/rings/int
eger.c:14013)()
    1980             return y
    1981
-> 1982         return coercion_model.bin_op(left, right, operator.mul)
    1983
    1984     cpdef _mul_(self, right):

/ext/sage/9.4/local/lib/python3.9/site-packages/sage/structure/coerce.p
yx in sage.structure.coerce.CoercionModel.bin_op (build/cythonized/sag
e/structure/coerce.c:11708)()
    1246         # We should really include the underlying error.
    1247         # This causes so much headache.
-> 1248         raise bin_op_exception(op, x, y)
    1249
    1250     cpdef canonical_coercion(self, x, y):

TypeError: unsupported operand parent(s) for *: 'Integer Ring' and '<cl
ass 'uncertainties.core.Variable'>'
```

```
In [40]: b*a
```

```
Out[40]: 0.015365999999999998+/-0.0005915716355607323
```

```
In [47]: com = a*b - ufloat(2,0)
```

```
In [48]: com
```

```
Out[48]: -1.984634+/-0.0005915716355607323
```

```
In [7]: # Importar o pacote Pandas
```

```
import pandas as pd
```

In [51]: *# Montar o dataframe com as colunas massa e aceleração g*

```
Tabela = pd.DataFrame()
```

```
Tabela['Massa'] = [ufloat(0.591, 0.001),ufloat(0.610, 0.001), ufloat(0.740, 0.001), ufloat(0.590, 0.001)]
```

```
Tabela['g'] = [ufloat(9.78, 0.02), ufloat(9.81, 0.02), ufloat(9.88, 0.02), ufloat(9.78, 0.02)]
```

*# Visualizar a tabela*

Tabela

Out[51]:

|   | Massa           | g             |
|---|-----------------|---------------|
| 0 | 0.5910+/-0.0010 | 9.780+/-0.020 |
| 1 | 0.6100+/-0.0010 | 9.810+/-0.020 |
| 2 | 0.7400+/-0.0010 | 9.880+/-0.020 |
| 3 | 0.5900+/-0.0010 | 9.780+/-0.020 |

In [63]: Tabela\_1 = pd.DataFrame()

```
Tabela_1['Massa'] = [1, 2, 3, 4]
```

*# Visualizar a tabela*

Tabela\_1

Out[63]:

|   | Massa |
|---|-------|
| 0 | 1     |
| 1 | 2     |
| 2 | 3     |
| 3 | 4     |

In [64]: Tabela\_1.Massa.std()

Out[64]: 1.2909944487358056

In [38]: Tabela.Massa[[1]] \* Tabela.g[[1]]

Out[38]: 1      5.98+/-0.10  
dtype: object

In [15]: forca = pd.DataFrame()

```
forca['Forca'] = []
```

forca

Out[15]:

| Forca |
|-------|
|-------|

```
In [16]: for i in range(0, 2):
          #forca.append(Tabela.Massa[[i]] * Tabela.g[[i]])
          forca.loc[i] = [Tabela.Massa[[i]] * Tabela.g[[i]]]
```

```
In [17]: forca
```

```
Out[17]:
```

|   | Forca                       |
|---|-----------------------------|
| 0 | 0 4.99+/-0.10 dtype: object |
| 1 | 1 5.98+/-0.10 dtype: object |

```
In [18]: forca.append(pd.DataFrame([[8]]), ignore_index=True)
```

```
Out[18]:
```

|   | Forca                       | 0   |
|---|-----------------------------|-----|
| 0 | 0 4.99+/-0.10 dtype: object | NaN |
| 1 | 1 5.98+/-0.10 dtype: object | NaN |
| 2 | NaN                         | 8   |

## INTERPOLAÇÃO

Os resultados de medições experimentais ou simulações numéricas fornecem, em geral, um conjunto de valores de uma função em pontos discretos de uma variável independente. Esses valores podem ser apresentados na forma de uma tabela para valores discretos de  $x$ . O processo de calcular a função para valores intermédios aos valores conhecidos de  $f(x)$  é chamado interpolação ([MIRANDA, 2018](#)).

([https://fenix.ciencias.ulisboa.pt/downloadFile/2251937252639182/LabNum\\_2018\\_v4.pdf](https://fenix.ciencias.ulisboa.pt/downloadFile/2251937252639182/LabNum_2018_v4.pdf)). Tipos de interpolação:

- Interpolação linear (padrão da função `interp1d`)
- Interpolação polinomial
- Interpolação trigonométrica
- Spline

Gráfico interpolação linear:



Sintaxe:

```
# carregar a função interp1d
from scipy.interpolate import interp1d

# calcular a função interpolação
nome_função = interp1d(dados_x, dados_y, kind='tipo_interp')
```

'linear', 'nearest', 'zero', 'slinear', 'quadratic', 'cubic', 'previous', 'next', where 'zero', 'slinear', 'quadratic' and 'cubic' refer to a spline interpolation of zeroth, first, second or third order; 'previous' and 'next' simply return the previous or next value of the point

In [89]: *# Datos*

```
x_datos = [Medida((0.0,0.1)), Medida((1.0,0.1)), Medida((1.5,0.1)), Med
ida((2.0,0.1)), Medida((2.5,0.1)), Medida((3.0,0.1)), Medida((3.5,0.1
)), Medida((4.0,0.1)), Medida((4.5,0.1)), Medida((5.0,0.1))]
y_datos = [Medida((0.0,0.1)), Medida((0.5,0.1)), Medida((0.84,0.1)), Me
dida((1.0,0.1)), Medida((0.91,0.1)), Medida((0.6,0.1)), Medida((0.14,0.
1)), Medida((-0.35,0.1)), Medida((-0.76,0.1)), Medida((-0.98,0.1))]
```

In [113]: `ufloat(0.0,0.1)`

Out[113]: 0.00+/-0.10

In [23]:

```
x_datos_1 = [ufloat(0.0,0.1), ufloat(1.0,0.1), ufloat(1.5,0.1), ufloat(
2.0,0.1), ufloat(2.5,0.1), ufloat(3.0,0.1), ufloat(3.5,0.1), ufloat(4.0
,0.1), ufloat(4.5,0.1), ufloat(5.0,0.1)]
y_datos_1 = [ufloat(0.0,0.1), ufloat(0.5,0.1), ufloat(0.84,0.1), ufloat
(1.0,0.1), ufloat(0.91,0.1), ufloat(0.6,0.1), ufloat(0.14,0.1), ufloat(
-0.35,0.1), ufloat(-0.76,0.1), ufloat(-0.98,0.1)]
```

In [24]: `datos_1 = pd.DataFrame()`

```
datos_1['x'] = x_datos_1
datos_1['y'] = y_datos_1

datos_1
```

Out[24]:

|   | x           | y            |
|---|-------------|--------------|
| 0 | 0.00+/-0.10 | 0.00+/-0.10  |
| 1 | 1.00+/-0.10 | 0.50+/-0.10  |
| 2 | 1.50+/-0.10 | 0.84+/-0.10  |
| 3 | 2.00+/-0.10 | 1.00+/-0.10  |
| 4 | 2.50+/-0.10 | 0.91+/-0.10  |
| 5 | 3.00+/-0.10 | 0.60+/-0.10  |
| 6 | 3.50+/-0.10 | 0.14+/-0.10  |
| 7 | 4.00+/-0.10 | -0.35+/-0.10 |
| 8 | 4.50+/-0.10 | -0.76+/-0.10 |
| 9 | 5.00+/-0.10 | -0.98+/-0.10 |

In [25]: `dados_1.x`

Out[25]:

|   |             |
|---|-------------|
| 0 | 0.00+/-0.10 |
| 1 | 1.00+/-0.10 |
| 2 | 1.50+/-0.10 |
| 3 | 2.00+/-0.10 |
| 4 | 2.50+/-0.10 |
| 5 | 3.00+/-0.10 |
| 6 | 3.50+/-0.10 |
| 7 | 4.00+/-0.10 |
| 8 | 4.50+/-0.10 |
| 9 | 5.00+/-0.10 |

Name: x, dtype: object

In [90]: `import pandas as pd`

In [102]: `x_dados[1].nominal`

Out[102]: 1.0

In [106]: `[i.nominal for i in dados.x]`

Out[106]: [ 0.0, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, 4.5, 5.0 ]

In [91]: `dados = pd.DataFrame()`

```
dados['x'] = x_dados
dados['y'] = y_dados

dados
```

Out[91]:

|   | x       | y        |
|---|---------|----------|
| 0 | 0.0±0.1 | 0.0±0.1  |
| 1 | 1.0±0.1 | 0.5±0.1  |
| 2 | 1.5±0.1 | 0.8±0.1  |
| 3 | 2.0±0.1 | 1.0±0.1  |
| 4 | 2.5±0.1 | 0.9±0.1  |
| 5 | 3.0±0.1 | 0.6±0.1  |
| 6 | 3.5±0.1 | 0.1±0.1  |
| 7 | 4.0±0.1 | -0.3±0.1 |
| 8 | 4.5±0.1 | -0.8±0.1 |
| 9 | 5.0±0.1 | -1.0±0.1 |

```
In [22]: # gráfico com axes_labels = ['x', 'y'], gridlines = 'minor', figsize =  
         (4, 3)  
  
         scatter_plot([[dados_1.x, dados_1.y]])
```

```

-----
-----
TypeError                                Traceback (most recent call 1
ast)
<ipython-input-22-83de2c9ada9c> in <module>
      1 # gráfico com axes_labels = ['x','y'], gridlines = 'minor', fig
size = (4, 3)
      2
----> 3 scatter_plot([[dados_1.x, dados_1.y]])

/ext/sage/9.4/local/lib/python3.9/site-packages/sage/misc/decorators.py
in wrapper(*args, **kws)
    489         options['__original_opts'] = kws
    490         options.update(kws)
--> 491         return func(*args, **options)
    492
    493         #Add the options specified by @options to the signature
of the wrapped

/ext/sage/9.4/local/lib/python3.9/site-packages/sage/plot/scatter_plot.
py in scatter_plot(datalist, **options)
    176     g = Graphics()
    177     g._set_extra_kwds(Graphics._extract_kwds_for_show(options))
--> 178     data = numpy.array(datalist, dtype='float')
    179     if len(data) != 0:
    180         xdata = data[:,0]

/ext/sage/9.4/local/lib/python3.9/site-packages/pandas/core/series.py i
n __array__(self, dtype)
    855         dtype='datetime64[ns]')
    856         """
--> 857         return np.asarray(self._values, dtype)
    858
    859     # -----
-----

/ext/sage/9.4/local/lib/python3.9/site-packages/numpy/core/_asarray.py
in asarray(a, dtype, order, like)
    100     return _asarray_with_like(a, dtype=dtype, order=order,
like=like)
    101
--> 102     return array(a, dtype, copy=False, order=order)
    103
    104

/ext/sage/9.4/local/lib/python3.9/site-packages/uncertainties/core.py i
n raise_error(self)
    2710     for coercion_type in ('complex', 'int', 'long', 'float'):
    2711         def raise_error(self):
-> 2712             raise TypeError("can't convert an affine function
(%s)"
    2713                               ' to %s; use x.nominal_value'
    2714                               # In case AffineScalarFunc is sub-c
lassed:

TypeError: can't convert an affine function (<class 'uncertainties.cor
e.Variable'>) to float; use x.nominal_value

```

```
In [18]: # Importar a função interp1d do scipy.interpolate
from scipy.interpolate import interp1d
```

```
In [20]: x_dados_1
```

```
Out[20]: [0.0+/-0.1,
1.0+/-0.1,
1.5+/-0.1,
2.0+/-0.1,
2.5+/-0.1,
3.0+/-0.1,
3.5+/-0.1,
4.0+/-0.1,
4.5+/-0.1,
5.0+/-0.1]
```

```
In [26]: # fint recebe interp1d(x_dados, y_dados)
fint = interp1d(dados_1.x, dados_1.y)
```

```
-----
----
TypeError                                Traceback (most recent call l
ast)
<ipython-input-26-93898c223b13> in <module>
      1 # fint recebe interp1d(x_dados, y_dados)
      2
----> 3 fint = interp1d(dados_1.x, dados_1.y)

/ext/sage/9.4/local/lib/python3.9/site-packages/scipy/interpolate/inter
polate.py in __init__(self, x, y, kind, axis, copy, bounds_error, fill_
value, assume_sorted)
    458         # Force-cast y to a floating-point type, if it's not ye
t one
    459         if not issubclass(y.dtype.type, np.inexact):
--> 460             y = y.astype(np.float_)
    461
    462         # Backward compatibility

/ext/sage/9.4/local/lib/python3.9/site-packages/uncertainties/core.py i
n raise_error(self)
    2710         for coercion_type in ('complex', 'int', 'long', 'float'):
    2711             def raise_error(self):
-> 2712                 raise TypeError("can't convert an affine function
(%s)"
    2713                                     ' to %s; use x.nominal_value'
    2714                                     # In case AffineScalarFunc is sub-c
lassed:

TypeError: can't convert an affine function (<class 'uncertainties.cor
e.Variable'>) to float; use x.nominal_value
```

```
In [108]: # testar a função
```

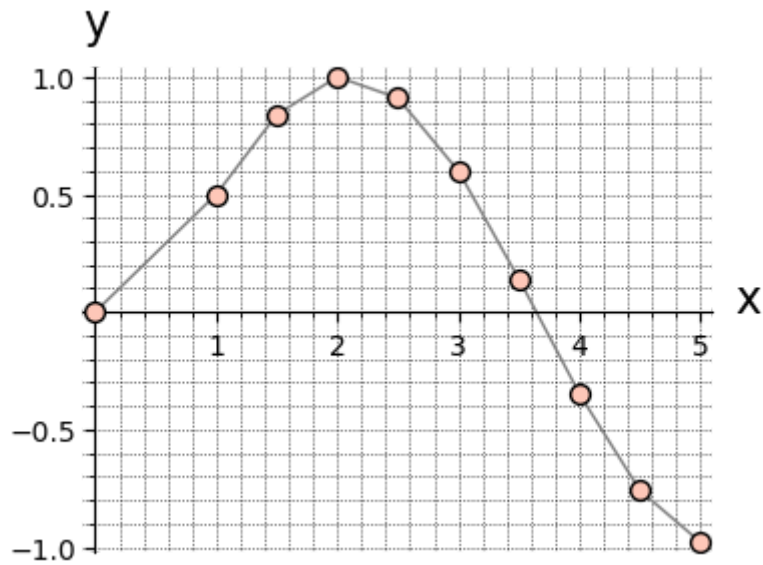
```
fint(3)
```

```
Out[108]: 0.6
```

```
In [109]: # gráfico pontos + gráfico fint
```

```
plot(fint, 0, 5, color = 'gray') + scatter_plot([[dados.x, dados.y]], g  
ridlines = 'minor', axes_labels = ['x', 'y'], figsize = (4, 3))
```

```
Out[109]:
```



# AJUSTE DE CURVAS

Ajuste de Curvas é um método que consiste em encontrar uma curva que se ajuste a uma série de pontos e que possivelmente cumpra uma série de parâmetros adicionais. Ajuste de curvas pode envolver tanto interpolação, onde é necessário um ajuste exato aos dados, quanto suavização, na qual é construída uma função "suave" que se aproximadamente se ajusta aos dados. Outro assunto relacionado é análise de regressão, a qual se foca mais em questões da inferência estatística ([Wikipedia, 2019](https://pt.wikipedia.org/wiki/Ajuste_de_curvas)) ([https://pt.wikipedia.org/wiki/Ajuste\\_de\\_curvas](https://pt.wikipedia.org/wiki/Ajuste_de_curvas)).



Algoritmo:

```
# Definir as constantes
var('k_1', 'k_2', k_3, ..., k_n)

# definir um modelo matemático
modelo(x) = expressão_matemática

# calcular as constantes do modelo
constantes_modelo = find_fit(dados_pontos, modelo, [k_1_i, k_2_i, ..., k_n_i
], solution_dict = True)

# substituir as constantes no modelo
modelo(x) = modelo.subs(constantes)
```

## Modelo polinomial

### Modelo Reta

```
In [2]: # Importar CSV e pandas

import pandas
import csv
```

```
In [3]: # importar dados_reta.csv para variável dados_reta  
dados_reta = pandas.read_csv('dados_reta.csv')
```

```
In [4]: # visualizar dados  
dados_reta
```

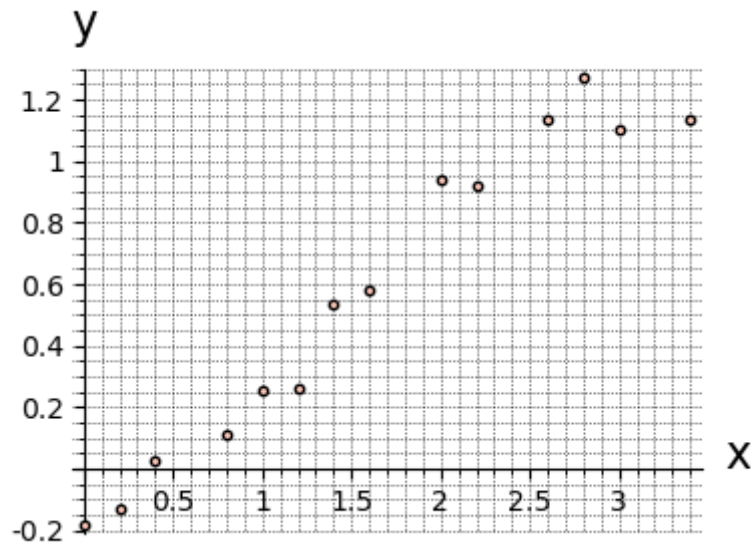
Out[4]:

|    | x   | y         |
|----|-----|-----------|
| 0  | 0.0 | -0.183440 |
| 1  | 0.2 | -0.131101 |
| 2  | 0.4 | 0.026888  |
| 3  | 0.8 | 0.110533  |
| 4  | 1.0 | 0.253945  |
| 5  | 1.2 | 0.257190  |
| 6  | 1.4 | 0.531889  |
| 7  | 1.6 | 0.579048  |
| 8  | 2.0 | 0.935181  |
| 9  | 2.2 | 0.916600  |
| 10 | 2.6 | 1.133286  |
| 11 | 2.8 | 1.268933  |
| 12 | 3.0 | 1.102029  |
| 13 | 3.4 | 1.133916  |

```
In [5]: # Gráfico dos dados com axes_labels = ['x','y'], gridlines = 'minor', f
        igsizesize = (5, 4)

        scatter_plot([[dados_reta.x, dados_reta.y]], axes_labels = ['x','y'], g
        ridlines = 'minor', markersize = 10, figsize=(4, 3))
```

Out[5]:



```
In [6]: # Definir os símbolos a e b do modelo_reta

        var('a', 'b')
```

Out[6]: (a, b)

```
In [7]: # função modelo_reta 'ax + b'

        modelo_reta(x) = a*x + b
        modelo_reta(x)
```

Out[7]: a\*x + b

```
In [8]: # coeficientes coef recebe os dados da função find_fit(dados_pontos, mo
        delo, [ai, bi], solution_dict = True)

        constantes = find_fit(dados_reta, modelo_reta, [0.5, 0.5], solution_dic
        t = True)
        constantes
```

Out[8]: {a: 0.45996226645180155, b: -0.17573217304516242}

```
In [9]: #imprimir coef 'a'

        constantes[a]
```

Out[9]: 0.45996226645180155

```
In [10]: # substituir coef no modelo reta

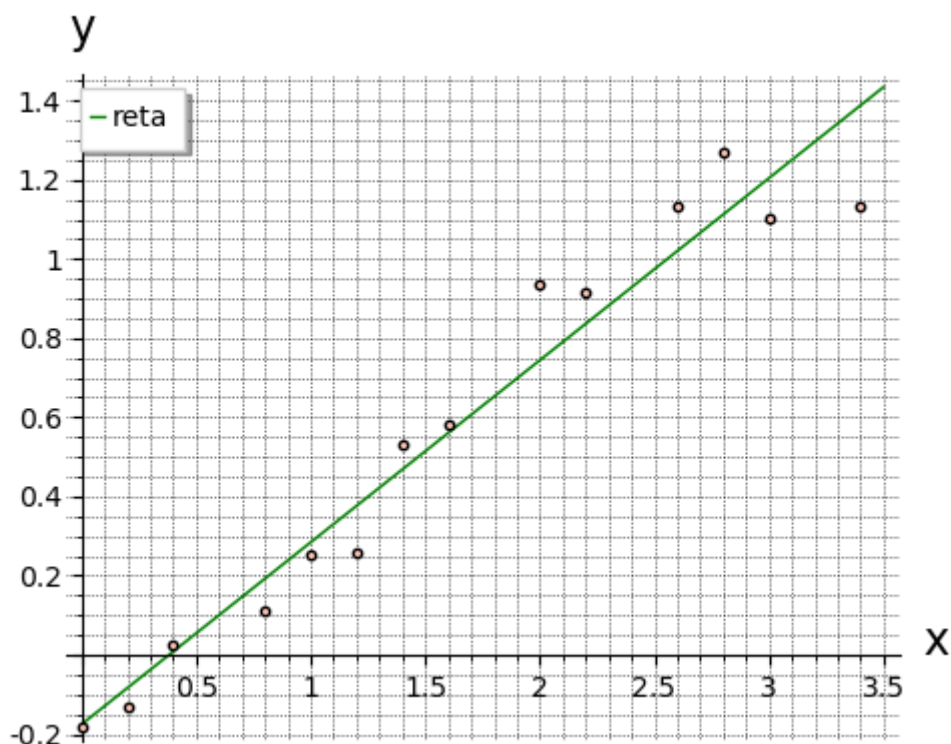
modelo_reta(x) = modelo_reta.subs(constantes)
modelo_reta(x)
```

Out[10]:  $0.45996226645180155x - 0.17573217304516242$

```
In [11]: # Gráfico pontos e modelo reta

scatter_plot([[dados_reta.x, dados_reta.y]], axes_labels = ['x', 'y'], g
ridlines = 'minor', markersize = 10, figsize = (5, 4)) + \
plot(modelo_reta(x), (x, 0, 3.5), color = 'green', legend_label = "reta"
)
```

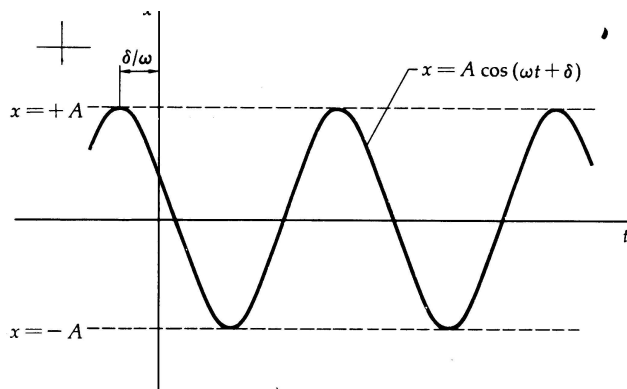
Out[11]:



## Modelo não polinomial

## Movimento harmônico simples

O movimento harmônico simples é o movimento que ocorre em função de uma força restauradora que desloca um determinado corpo de sua posição de equilíbrio e proporcional ao deslocamento. O exemplo mais simples de oscilador harmônico é o sistema massa mola. O gráfico mostra o deslocamento  $x$  em função do tempo  $t$  que obedece à lei de Hook,  $Fx = -kx$ , no qual  $x$  varia senoidalmente com o tempo e pode ser descrito pela função  $x(t) = A\cos(\omega t + \varphi)$ . Sendo  $A$  (amplitude),  $\omega$  (frequência angular) e  $\varphi$  (fase) constantes.



O número de oscilações efetuadas no intervalo unitário de tempo, isto é  $1/T$ , é a *frequência*  $f$ :

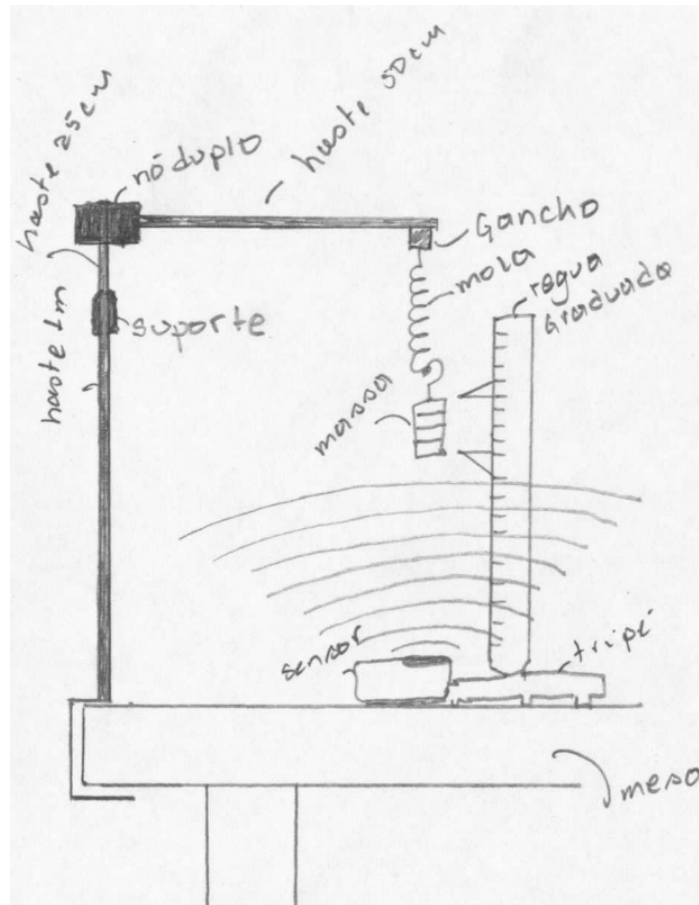
---


$$f = \frac{1}{T} = \frac{\omega}{2\pi}$$


---

11.3

De acordo com o montagem experimental abaixo, foram coletados dados de função posição  $x$  na vertical (cm) em função do tempo (s) e salvos em um arquivo CSV. A partir dos dados, determine a função do movimento harmônico simples.



In [12]: *# Importar CSV e pandas*

```
import pandas  
import csv
```

In [13]: *# importar dados\_senoide.csv para variável dados\_senoide*

```
dados_senoide = pandas.read_csv('dados_senoide.csv')
```

In [14]: *# visualizar dados*

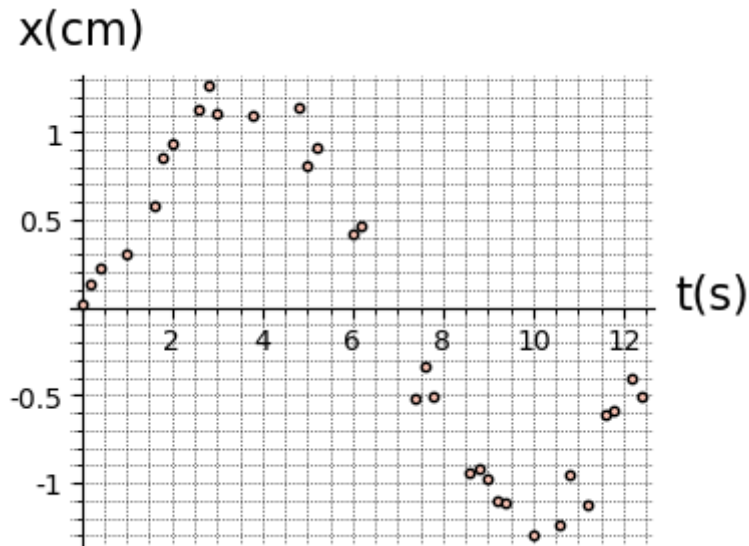
`dados_senoide`

Out[14]:

|           | <b>t</b> | <b>x</b>  |
|-----------|----------|-----------|
| <b>0</b>  | 0.0      | 0.018344  |
| <b>1</b>  | 0.2      | 0.131101  |
| <b>2</b>  | 0.4      | 0.226888  |
| <b>3</b>  | 1.0      | 0.300120  |
| <b>4</b>  | 1.6      | 0.579048  |
| <b>5</b>  | 1.8      | 0.852606  |
| <b>6</b>  | 2.0      | 0.935181  |
| <b>7</b>  | 2.6      | 1.133286  |
| <b>8</b>  | 2.8      | 1.268933  |
| <b>9</b>  | 3.0      | 1.102029  |
| <b>10</b> | 3.8      | 1.092011  |
| <b>11</b> | 4.8      | 1.142791  |
| <b>12</b> | 5.0      | 0.811303  |
| <b>13</b> | 5.2      | 0.909735  |
| <b>14</b> | 6.0      | 0.417068  |
| <b>15</b> | 6.2      | 0.460108  |
| <b>16</b> | 7.4      | -0.516307 |
| <b>17</b> | 7.6      | -0.333994 |
| <b>18</b> | 7.8      | -0.504125 |
| <b>19</b> | 8.6      | -0.945794 |
| <b>20</b> | 8.8      | -0.915935 |
| <b>21</b> | 9.0      | -0.975459 |
| <b>22</b> | 9.2      | -1.099437 |
| <b>23</b> | 9.4      | -1.112542 |
| <b>24</b> | 10.0     | -1.297400 |
| <b>25</b> | 10.6     | -1.234404 |
| <b>26</b> | 10.8     | -0.953808 |
| <b>27</b> | 11.2     | -1.122403 |
| <b>28</b> | 11.6     | -0.609285 |
| <b>29</b> | 11.8     | -0.592560 |
| <b>30</b> | 12.2     | -0.402521 |
| <b>31</b> | 12.4     | -0.510090 |

```
In [15]: scatter_plot([dados_senoide.t, dados_senoide.x], axes_labels = ['t(s)', 'x(cm)'], gridlines = 'minor', markersize = 10, figsize=(4, 3))
```

Out[15]:



```
In [16]: # Definir os símbolos A, w, p e t do modelo_senoide
var('A', 'w', 'p', 't')
```

Out[16]: (A, w, p, t)

```
In [17]: # função modelo_senoide

modelo_senoide(t) = A*sin(w*t + p)
modelo_senoide(t)
```

Out[17]:  $A \sin(tw + p)$

```
In [18]: constantes = find_fit(dados_senoide, modelo_senoide, [0.5, 0.5, 0.5], solution_dict = True)
constantes
```

Out[18]: {A: 1.1743532071992284, p: -0.09744247201199815, w: 0.4826611233436039}

```
In [19]: # substituir constantes no modelo senoide

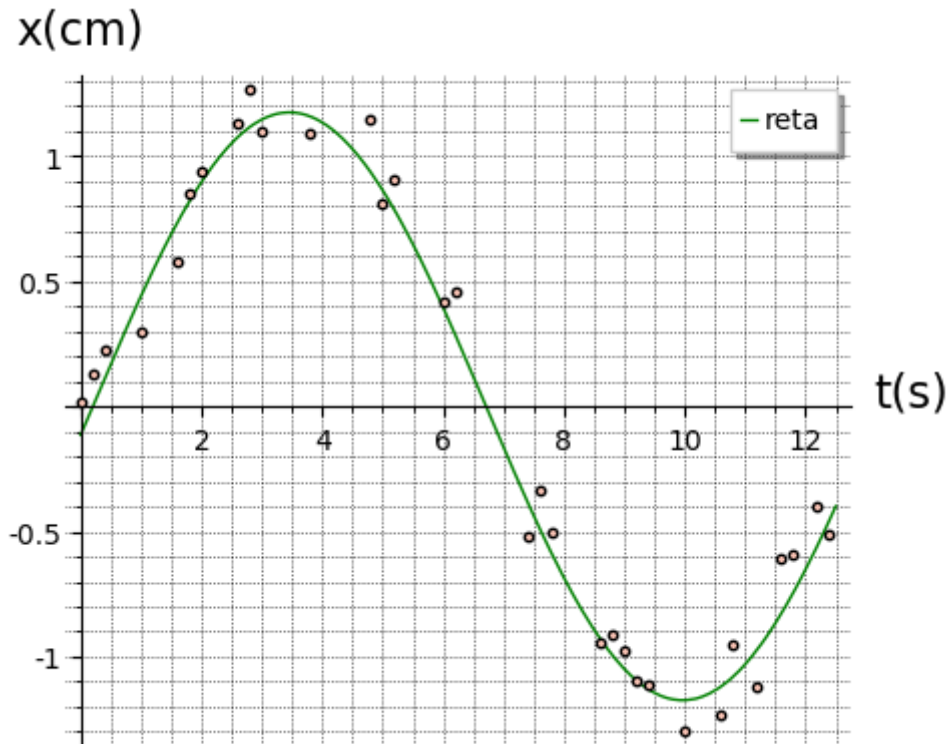
modelo_senoide(t) = modelo_senoide.subs(constantes)
modelo_senoide(t)
```

Out[19]:  $1.1743532071992284 \sin(0.4826611233436039t - 0.09744247201199815)$

In [20]: *# Gráfico pontos e modelo senoide*

```
scatter_plot([[dados_senoide.t, dados_senoide.x]], axes_labels = ['t  
(s)', 'x(cm)'], gridlines = 'minor', markersize = 10, figsize = (5, 4))  
+ \  
plot(modelo_senoide(t),(t, 0, 12.5), color = 'green', legend_label = "r  
eta")
```

Out[20]:



FIM

In [0]: