
xlwt
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xlwt is a library for writing data and formatting information to older Excel files (ie: .xls)

Documentation is sparse, please see the API reference or code for help:

API Reference

class `xlwt.Workbook.Workbook` (*encoding='ascii', style_compression=0*)

This is a class representing a workbook and all its contents. When creating Excel files with xlwt, you will normally start by instantiating an object of this class.

add_sheet (*sheetname, cell_overwrite_ok=False*)

This method is used to create Worksheets in a Workbook.

Parameters

- **sheetname** – The name to use for this sheet, as it will appear in the tabs at the bottom of the Excel application.
- **cell_overwrite_ok** – If `True`, cells in the added worksheet will not raise an exception if written to more than once.

Returns The *Worksheet* that was added.

save (*filename_or_stream*)

This method is used to save the Workbook to a file in native Excel format.

Parameters filename_or_stream – This can be a string containing a filename of the file, in which case the excel file is saved to disk using the name provided. It can also be a stream object with a write method, such as a `StringIO`, in which case the data for the excel file is written to the stream.

class `xlwt.Worksheet.Worksheet` (*sheetname, parent_book, cell_overwrite_ok=False*)

This is a class representing the contents of a sheet in a workbook.

Warning: You don't normally create instances of this class yourself. They are returned from calls to `add_sheet()`.

write (*r, c, label='', style=<xlwt.Style.XFStyle object>*)

This method is used to write a cell to a *Worksheet*.

Parameters

- **r** – The zero-relative number of the row in the worksheet to which the cell should be written.
- **c** – The zero-relative number of the column in the worksheet to which the cell should be written.
- **label** – The data value to be written.

An `int`, `long`, or `Decimal` instance is converted to `float`.

A `unicode` instance is written as is. A `bytes` instance is converted to unicode using the encoding, which defaults to `ascii`, specified when the `Workbook` instance was created.

A `datetime`, `date` or `time` instance is converted into Excel date format (a float representing the number of days since (typically) 1899-12-31T00:00:00, under the pretence that 1900 was a leap year).

A `bool` instance will show up as `TRUE` or `FALSE` in Excel.

`None` causes the cell to be blank: no data, only formatting.

An `xlwt.Formula` instance causes an Excel formula to be written.

- **style** – A style, also known as an XF (extended format), is an `XFStyle` object, which encapsulates the formatting applied to the cell and its contents.

`XFStyle` objects are best set up using the `easyxf()` function. They may also be set up by setting attributes in `Alignment`, `Borders`, `Pattern`, `Font` and `Protection` objects then setting those objects and a format string as attributes of an `XFStyle` object.

1.1 Formatting

The XF record is able to store explicit cell formatting attributes or the attributes of a cell style. Explicit formatting includes the reference to a cell style XF record. This allows to extend a defined cell style with some explicit attributes. The formatting attributes are divided into 6 groups:

Group	Attributes
Number format	Number format index (index to FORMAT record)
Font	Font index (index to FONT record)
Alignment	Horizontal and vertical alignment, text wrap, indentation, orientation/rotation, text direction
Border	Border line styles and colours
Background	Background area style and colours
Protection	Cell locked, formula hidden

For each group a flag in the cell XF record specifies whether to use the attributes contained in that XF record or in the referenced style XF record. In style XF records, these flags specify whether the attributes will overwrite explicit cell formatting when the style is applied to a cell. Changing a cell style (without applying this style to a cell) will change all cells which already use that style and do not contain explicit cell attributes for the changed style attributes. If a cell XF record does not contain explicit attributes in a group (if the attribute group flag is not set), it repeats the attributes of its style XF record.

```
xlwt.Style.easyxf(strg_to_parse=',', num_format_str=None, field_sep=',', line_sep=';', intro_sep=':', esc_char='\', debug=False)
```

This function is used to create and configure `XFStyle` objects for use with (for example) the `Worksheet.write()` method.

It takes a string to be parsed to obtain attribute values for `Alignment`, `Borders`, `Font`, `Pattern` and `Protection` objects.

Refer to the examples in the file `examples/xlwt_easyxf_simple_demo.py` and to the `xf_dict` dictionary in `xlwt.Style`.

Various synonyms including `color/colour`, `center/centre` and `gray/grey` are allowed. Case is irrelevant (except maybe in font names). `_` may be used instead of `.`

Example: `font: bold on; align: wrap on, vert centre, horiz center`

Parameters `num_format_str` – To get the “number format string” of an existing cell whose format you want to reproduce, select the cell and click on Format/Cells/Number/Custom. Otherwise, refer to Excel help.

Examples: "#,##0.00", "dd/mm/yyyy"

Returns An `XFstyle` object.

Perhaps more useful is to consult the [tutorial](#) and the examples in the *examples* folder of the distribution.

For details of how to install the package or get involved in its development, please see the sections below:

Installation Instructions

If you want to experiment with xlwt, the easiest way to install it is to do the following in a virtualenv:

```
pip install xlwt
```

If your package uses `setuptools` and you decide to use `xlwt`, then you should add it as a requirement by adding an `install_requires` parameter in your call to `setup` as follows:

```
setup(  
    # other stuff here  
    install_requires=['xlwt'],  
)
```

Python version requirements

This package has been tested with Python 2.6, 2.7, 3.3+ on Linux, and is also expected to work on Mac OS X and Windows.

Development

This package is developed using continuous integration which can be found here:

<https://travis-ci.org/python-excel/xlwt>

If you wish to contribute to this project, then you should fork the repository found here:

<https://github.com/python-excel/xlwt>

Once that has been done and you have a checkout, you can follow these instructions to perform various development tasks:

3.1 Setting up a virtualenv

The recommended way to set up a development environment is to turn your checkout into a virtualenv and then install the package in editable form as follows:

```
$ virtualenv .  
$ bin/pip install -Ur requirements.txt  
$ bin/pip install -e .
```

3.2 Running the tests

Once you've set up a virtualenv, the tests can be run as follows:

```
$ bin/nosetests
```

To run tests on all the versions of Python that are supported, you can do:

```
$ bin/tox
```

If you change the supported python versions in `.travis.yml`, please remember to do the following to update `tox.ini`:

```
$ bin/panci --to=tox .travis.yml > tox.ini
```

3.3 Building the documentation

The Sphinx documentation is built by doing the following, having activated the virtualenv above, from the directory containing setup.py:

```
$ cd docs
$ make html
```

3.4 Making a release

To make a release, just update the version in `setup.py`, update the change log, tag it and push to <https://github.com/python-excel/xlwt> and Travis CI should take care of the rest.

Once the above is done, make sure to go to <https://readthedocs.org/projects/xlwt/versions/> and make sure the new release is marked as an Active Version.

Changes

4.1 1.1.0 (2 June 2016)

- Fix SST BIFF record in Python 3.
- Fix for writing `ExternSheetRecord` in Python 3.
- Add ability to insert bitmap images from buffers as well as files.
- Official support Python 3.5.

Thanks to “thektulu” and Lele Gaifax for the Python 3 fixes. Thanks to Ross Golder for the support for inserting images from buffers.

4.2 1.0.0 (15 April 2015)

- Python 3 support.
- Initial set of unit tests.
- An initial set of Sphinx documentation.
- Move to `setuptools` for packaging.
- Wire up Travis, Coveralls and ReadTheDocs.
- Allow longs as row indexes.

Big thanks to Thomas Kluyver for his work on Python 3 support, Manfred Moitzi for donating his unit tests.

Belated thanks to Landon Jurgens for his help on converting the documentation to Sphinx.

4.3 0.7.5 (5 April 2013)

- Fixes a bug that could cause a corrupt SST in `.xls` files written by a wide-unicode Python build.
- A `ValueError` is now raised immediately if an attempt is made to set column width to other than an int in `range(65536)`
- Added the ability to set a custom RGB colour in the palette to use for colours. Thanks to Alan Rotman for the work, although this could really use an example in the examples folder...
- Fixed an issue trying to set a diagonal border using `easyxf`. Thanks to Neil Etheridge for the fix.

- Fixed a regression from 0.7.2 when writing sheets with frozen panes.

4.4 0.7.4 (13 April 2012)

- Python 2.3 to 2.7 are now the officially supported versions, no Python 3 yet, sorry.
- The `datemode` in an xlwt *Workbook* can be set to 1904 by doing `workbook.dates_1904 = 1` and is written to the output file. However the `datemode` was not being reflected in conversions from `datetime.datetime` and `datetime.date` objects to floats for output, resulting in dates that were 4 years too high when seen in Excel.

4.5 0.7.3 (21 February 2012)

- Added `user_set` and `best_fit` attributes to `Column` class.
- Fixed an `[Errno 0] Error` raised when `Worksheet.flush_row_data()` was called after `Workbook.save()`
- Fixed an error on Windows that occurred when writing large blocks to files.
- Added the ability to write rich text cells
- Fixed a bug when writing `MULBLANK` records on big-endian platforms.
- allow the `active_pane` on worksheets to be specified
- added support for zoom (magn) factors and improved possibilities when generating split panes

4.6 0.7.2 (1 June 2009)

- Added function `Utils.rowcol_pair_to_cellrange`. `(0, 0, 65535, 255) -> "A1:IV65536"`
- Removed `Worksheet` property `show_empty_as_zero`, and added attribute `show_zero_values` (default: `1 == True`).
- Fixed formula code generation problem with formulas including `MAX/SUM/etc` functions with arguments like `A1+123`.
- Added `.pattern_examples.xls` and put a pointer to it in the `easyxf` part of `Style.py`.
- Fixed `Row.set_cell_formula()` bug introduced in 0.7.1.
- Fixed bug(?) with `SCL/magnification` handling causing(?) Excel to raise a dialogue box if sheet is set to open in page preview mode and user then switches to normal view.
- Added `color` and `colour` as synonyms for `font.colour_index` in `easyxf`.
- Removed unused attribute `Row.__has_default_format`.

4.7 0.7.1 (4 March 2009)

See source control for changes made.

4.8 0.7.0 (19 September 2008)

- Fixed more bugs and added more various new bits of functionality

4.9 0.7.0a4 (8 October 2007)

- fork of pyExcelerator, released to python-excel.
- Fixed various bugs in pyExcelerator and added various new bits of functionality

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```

The licensing for the unit tests added as part of the work for Python 3 compatibility is as follows:

```
Author: mozman --<mozman@gmx.at>
Purpose: test_mini
Created: 03.12.2010
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License: BSD licence
```

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Portions of xlwt.Util are based on pyXLWriter which is licensed as follows:

Copyright (c) 2004 Evgeny Filatov <fuffff@users.sourceforge.net>
Copyright (c) 2002-2004 John McNamara (Perl Spreadsheet::WriteExcel)

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pyXLWriter also makes reference to the PERL Spreadsheet::WriteExcel as follows:

This module was written/ported from PERL Spreadsheet::WriteExcel module
The author of the PERL Spreadsheet::WriteExcel module is John McNamara
<jmcnamara@cpan.org>

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