Working with Pandas and NumPy

openpyxl is able to work with the popular libraries Pandas and NumPy

NumPy Support

openpyxl has builtin support for the NumPy types float, integer and boolean. DateTimes are supported using the Pandas' Timestamp type.

Working with Pandas Dataframes

The `openpyxl.utils.dataframe.dataframe_to_rows()` function provides a simple way to work with Pandas Dataframes:

```
from openpyxl.utils.dataframe import dataframe_to_rows
wb = Workbook()
ws = wb.active

for r in dataframe_to_rows(df, index=True, header=True):
    ws.append(r)
```

将DataFrame写入Excel

While Pandas itself supports conversion to Excel, this gives client code additional flexibility including the ability to stream dataframes straight to files.

To convert a dataframe into a worksheet highlighting the header and index:

```
wb = Workbook()
ws = wb.active

for r in dataframe_to_rows(df, index=True, header=True):
    ws.append(r)

for cell in ws['A'] + ws[1]:
    cell.style = 'Pandas'

wb.save("pandas_openpyxl.xlsx")
```

+ 这都行！
仅仅是加了边框而已

Alternatively, if you just want to convert the data you can use write-only mode:

```
from openpyxl.cell.cell import WriteOnlyCell
wb = Workbook(write_only=True)
ws = wb.create_sheet()

cell = WriteOnlyCell(ws)
cell.style = 'Pandas'

 def format_first_row(row, cell):

    for c in row:
        cell.value = c
        yield cell

rows = dataframe_to_rows(df)
first_row = format_first_row(next(rows), cell)
ws.append(first_row)

for row in rows:
    row = list(row)
    cell.value = row[0]
    row[0] = cell
    ws.append(row)

wb.save("openpyxl_stream.xlsx")
```

完整示例代码见下

This code will work just as well with a standard workbook.

Converting a worksheet to a Dataframe

To convert a worksheet to a Dataframe you can use the *values* property. This is very easy if the worksheet has no headers or indices:

```
df = DataFrame(ws.values)
```

If the worksheet does have headers or indices, such as one created by Pandas, then a little more work is required:

```
data = ws.values
cols = next(data)[1:]
data = list(data)
idx = [r[0] for r in data]
data = (islice(r, 1, None) for r in data)
df = DataFrame(data, index=idx, columns=cols)
```

```
from openpyxl.cell.cell import WriteOnlyCell
from openpyxl import Workbook
import openpyxl
from openpyxl.utils.dataframe import dataframe_to_rows
wb = Workbook(write_only=True)
ws = wb.create_sheet()

cell = WriteOnlyCell(ws)
cell.style = 'Pandas'

def format_first_row(row, cell):
    for c in row:
        cell.value = c
        yield cell

rows = dataframe_to_rows(frame)
first_row = format_first_row(next(rows), cell)
ws.append(first_row)

for row in rows:
    row = list(row)
    cell.value = row[0]
    row[0] = cell
    ws.append(row)

wb.save("D:\\dataframe.xlsx")
```