

Peer-review of assignment 5 for *INF3331-ThomasFossoy*

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1 Review

Mac OSX 10.11.1

Python version 2.7.10

Assignment 5.1: Python implementation of the heat equation

- You perform a shallow copy of the array. Replace

```
u=u_new
```

with

```
u = [x[:] for x in u_new]
```

- You start your iteration at **i = 0** and **j = 0**, you are supposed to start at **i = 1** and **j = 1**.
- These two errors gives you elevated results. Iterating from **i = 1** and **j = 1** lowers your results **10** degrees from **283** to **273** and doing the proper copy of `u_new` to `u` lowers it the last degree to the correct **272**. These changes makes your solution pass the test with an error of **0.0011666**.

Assignment 5.2: NumPy and C implementations

NumPy

- The start of your equation

```
u[1:-1,1:-1]=u_new[1:-1,1:-1]= u[1:-1,1:-1]
```

is a bit weird and seems unnecessary, but it does not influence the result, which is correct.

Weave

- Weave imported incorrectly, the proper import would be

```
from scipy import weave
```
- You again start your iterations at **i = 1** and **j = 1**(see Pure Python review). You also end your iterations at a hardcoded **50** and **100**. This means your implementations will not work for any other rectangle size. In addition the values are wrong as they should be **m-1** and **n-1**, in the case of a 50x100 rectangle 49 and 99.
- Making these changes produces the correct result for your weave implementation.

Assignment 5.3: Testing

- The tests work as expected. However you have implemented the tests in every single solver file. It would be easier if you implemented the tests in a single file where you calculate **analytic_u** and **f**, and then used your other implementations to calculate **u**.

Assignment 5.4: Develop a user interface

- The UI does not save to file as specified in the assignment unless told to do so.
- Aside from that the UI works as expected.

Assignment 5.5: Latex report

- Describes the work done adequately.
- The report is missing runtime comparisons and explanation of the differences between the solutions.

Assignment 5.7: Github activity plot

- Successfully identifies directory as a git directory or not.
- Regex successfully retrieves the different authors and dates from the log data.
- The plot did not show for me at first. I changed `plt.legend()` to `plt.show()` and it appeared. If it showed for you with `legend()` it might be a difference in our locales
- Plot is difficult to read, but I guess it shows what it's supposed to.

1.1 General notes

- Docstrings are mostly missing, but are present on the solver functions. The `ui` file is well documented, but the rest are missing a lot of comments that would have been useful in understanding your thinking.
- You have some redundant imports and also some imports who are done incorrectly.
- A lot of your code is oddly placed and repeated unnecessarily, for example the test code, `analytic_u`, and `f` calculations in every solution file. This makes the code difficult to read and follow.

Recommendations:

- Read the assignment text more thoroughly. Some of your errors could have been avoided if you had interpreted the assignment correctly.
- You should also try to structure your code better, avoiding unnecessary functions and repeating code.