

Assignment 4 Guidelines

This assignment is focused on calling functions from an external resource. Hence, for this assignment you should provide two files: the first one (wallCalculations_yourname.py), which include the functions and the second one (mainScript_yournme.py), in which you import the first file and perform the calculations.

The problem that you are supposed to solve is calculating the heating load only from opaque surfaces (walls, door, and roof) for the RLF example we solved in the class.

File No. 1 (wallCalculations_yourSurname.py)

In order to simplify the procedure it would be better if you define two functions in this file: the first function, which you can call “wallCalc_withParallel” is exactly the same function you wrote in Assignment 3 (this function will be used to find the U value of the walls). The second function “wallCalc_onlyInSeries” is a simplified version of the first function, which only accepts one list of layers (in series) and finds the corresponding U value (you can use this function to find the U value of the roof and the door).


* In the RLF example, the layers of the roof were not defined (the U was directly given); you can define an arbitrary list of layers for it, which seems logical to you for a roof

File No. 2 (mainScript_yourSurname.py)

In this script, you will first set the current directory using OS module to have the “wallCalculations_yourSurname.py” in the current directory. Next, you import “wallCalculations_yourSurname.py” and give it a shorter name. Then you define the layers in series and parallel layers of the wall and then call the “wallCalc_withParallel” from the imported module and obtain the U_walls from it. You will then define the list of layers of the roof and the door, and you will call “wallCalc_onlyInSeries” and obtain the U_door and U_roof. You will then define deltaT_heating based on the value given in the example and calculate the heating factor of each component. Finally, you will define the areas of walls, roof, and the door and find their heating loads.

Submission Procedure:

For this assignment you should not upload the files on Dropbox, you should instead fork the course’s repo, clone it to your computer and the put your assignment files in that folder, and finally execute the commands of “add”, “commit”, and “push” as explained in the GIT notes.

 You should just remember to update the excel file in DropBox in which you should add your Github account’s username