Performance Modeling - RISC-V processor

This will be an INDIVIDUAL project

Phase 1: (Due November 7th 11:59PM)

1) Draw the schema[illegible] processor and fill in your code in the provided file to run the simulator.

2) Measure and repo[illegible] execution cycles, and Instructions per cycle by adding performance monitor[illegible] sure you output these values to a file.

3) What optimizations or features can be added to improve performance? (Extra credit)

Your code will be tested against 10 test cases. 3 of which will be released 5 days prior to your submission. (2nd November)

Notes:

1. **Please modify the existing code to use the correct way to handle folder paths. (Use `os.path.join()` instead of hardcoding OS dependent forward/back slashes).**

2. You'll only submit a zipped folder named `netID.zip`

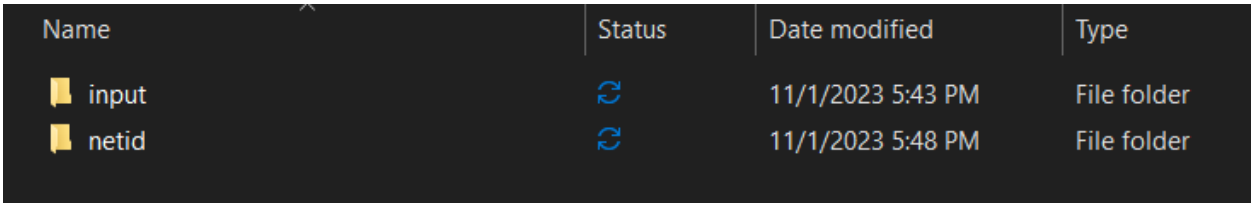
   Make sure you follow the folder structure shown below.
   Your code will be in one folder named `netID` with an entry point file (main.py or main.cpp).
   There'll be a second folder called `input/` with each subfolder named `testcase0/`, `testcase1`, etc., and each of these test cases will contain 2 files, `imem.txt` and `dmem.txt`.

   After running your code, a third folder should be created as an output folder with the name `output_netID/` with subfolders named `testcase0/`, `testcase1`. Each subfolder must contain 4 files: `PerformanceMetrics_Result.txt`, `SS_DMEMResult.txt`, `SS_RFResult.txt`, `StateResult_SS.txt`.

3. A sample test case is already on brightspace under the project section.

```
Project root
|
|_ input/
|      |_testcase0
|      |      |_imem.txt
|      |      |_dmem.txt
|      |_tes
|      |
|      |
|      |_tes
|
|
|
|_ netID/
|      |_main.py (or) main.cpp
|      |_additional_folders_and_files
|      |_README (in case there's anything you want to mention about your code/dependencies)
|
|_ output_netID/
       |_testcase0
       |      |_PerformanceMetrics_Result.txt
       |      |_SS_DMEMResult.txt
       |      |_SS_RFResult.txt
       |      |_StateResult_SS.txt
       |
       |_testcasen
              |_PerformanceMetrics_Result.txt
              |_SS_DMEMResult.txt
              |_SS_RFResult.txt
              |_StateResult_SS.txt
```


Solve with your folder structure as:



After running

```
$ python3 netid/main.py
```

The expected output folder structure should be as follows:

You will be submitting ler, and the PDF report along with it on brightspace.
Do not upload the inp