ECE 2162 Tomasulo Algorithm

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System Requirements:

* A system with installed Python 3.7 or higher.

Instructions to run the code:

1. Make sure you meet the system requirements.
2. Add the test code to the folder in a text document with a name of (where index is a whole number).
3. In the in the project root directory, make sure to add you number to the list at the main section at the bottom of the python file (shown in Figure 1), so that it is executed by passing to function in the same file.  
     
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Figure 1. Code from "main.py"

1. Run in the project root directory using Python 3.7 or higher.
2. The result of the executable will be display in the console and in the in the folder, given there is no error with the test code (like division by zero, accessing memory address not divisible by 4, wrong argument for any instruction etc.)

Test Code Layout:

* Sample test codes can be found in folder.
* *#*: create a comment in code
* *$*: `$ {name} = {value}`   
  It is used to assign the value to integer register (R\*), float register (F\*), memory (MEM[\*]), and the parameters of the program (these parameters are list in with their default values)
* *!*: `! {name} = {value}`  
  It is used to check the value of the integer register (R\*), float register (F\*), memory (MEM[\*]), and total number of cycles after the execution of the code.

Note: All ‘#’, ‘$’, and ‘!’ must be at the beginning of the line. All ‘$’ and ‘!’ must be before all the instruction code.

Team Members:

* *Aditya Pawar*: Implementation of Tomasulo algorithm, Branch Prediction and Speculation recovery.
* *Manisha Modal*: Implementation of Tomasulo algorithm and Test Benching.
* *Vivswan Shah*: Implementation of Tomasulo algorithm, Memory load/store Forwarding and Speculation recovery.

A picture containing diagram

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