Tomasulo’s Simulator

Dr. Cherif Salama
Ali Elkhouly, 900212679
Moaz Hafez, 900214137

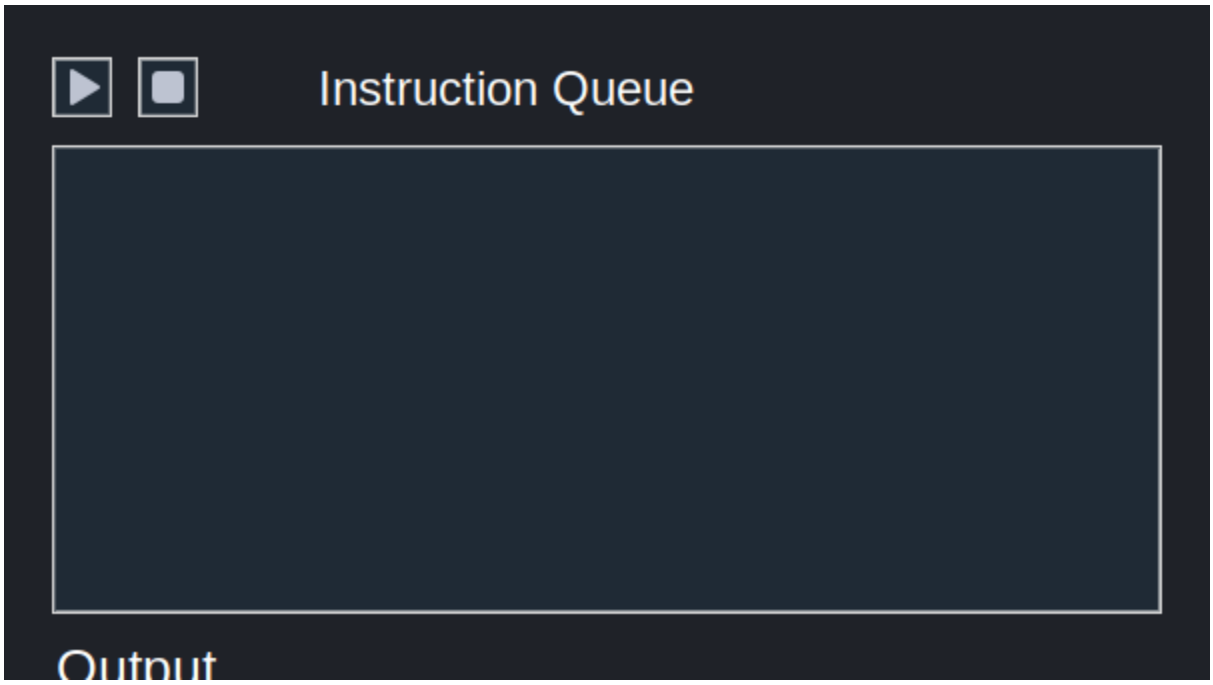
Implementation:

We started by declaring our classes. We made a Reservation Station, with the basic symbols such as vj, vk and such. In the reservation station, we also have a variable how long each station requires. We built a functional Unit to execute the current operations. Instruction Queue to state which instructions we're queuing, also with the total instructions, in case we needed to jump. Finally, we created a register file to store the values, as well as the memory.

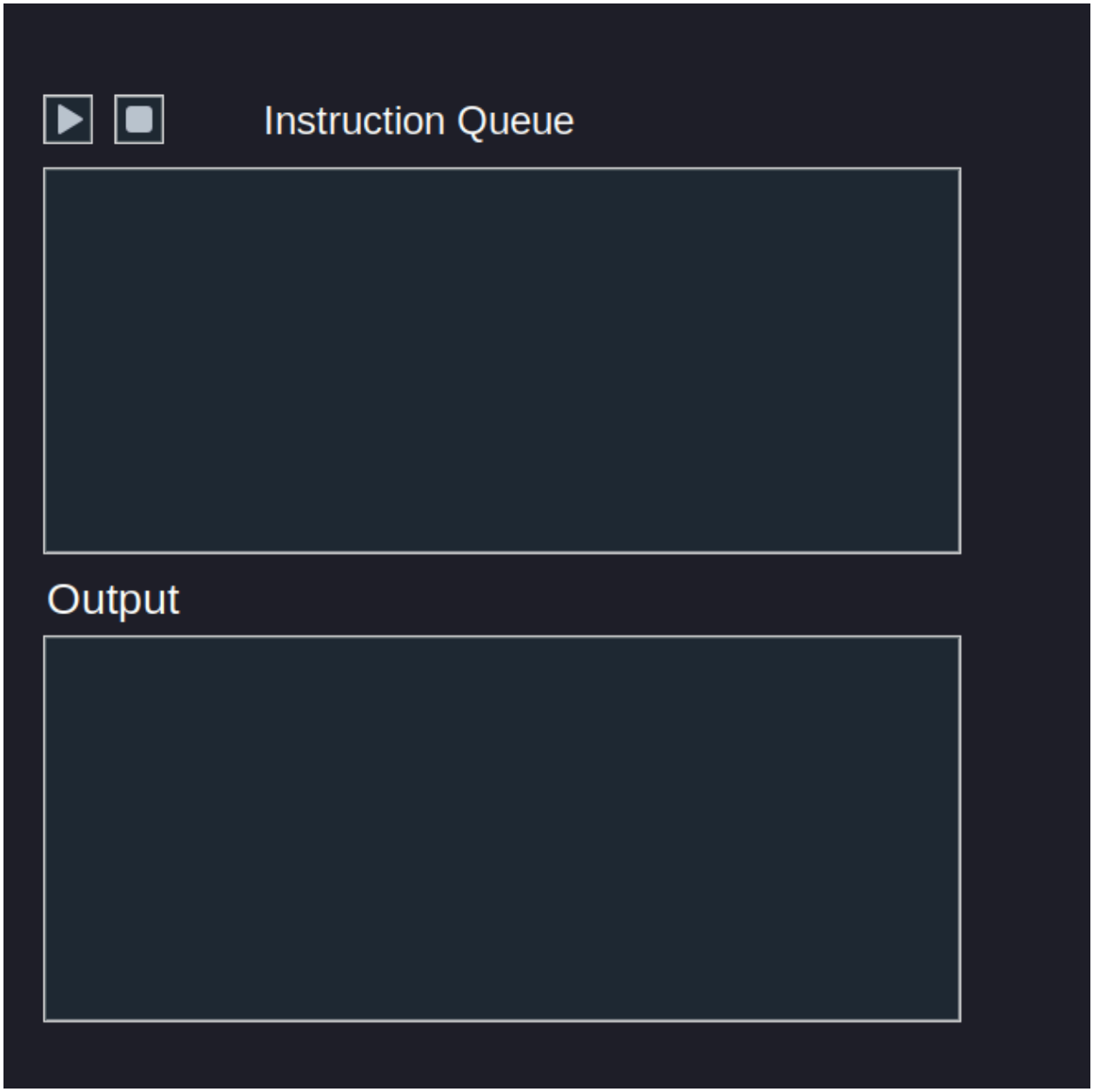
In the simulation, we fetch the instructions and assign each to its corresponding station. We make sure that no more than 1 is on the bus. We also make sure that there are no collisions between stations.

Finally, our choice of bonuses were creating a GUI that displays the output of each cycle. We used Tkinter as the GUI package, and thus used python as the backend for us, using the previous code.

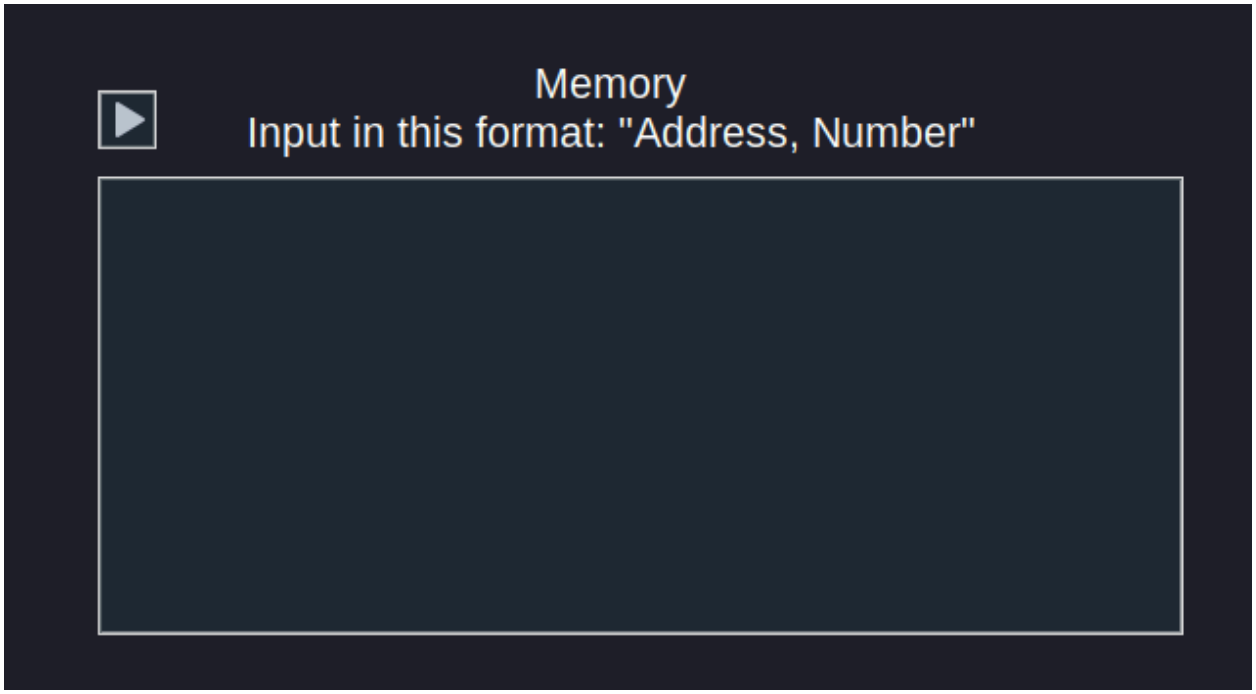
How to Run:



In this part, we write the instructions we want inside this box, then we click the play button each time we want to move 1 clock cycle. Click on the stop sign to start over,



We can check the output of each state in the table right below.



We write the memory as in the format written above, and then click on the button to write the memories.