USER GUIDE

BY-TEAM 1

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The Program Counter address starts from 3596 so we must initialize the PC with 3596(0000111000001100) by loading into a common bus and click the LOAD button near the PC and all the given instructions will be stored in the addresses starting from 3596. Then the address of the PC is transferred to the Memory Address Register and then the Memory Control Unit fetches the word from memory using the address of MAR and places it in the Memory Buffer Register. The contents of the Memory Buffer Register are then moved to the Instruction Register.

HOW SIMULATOR WORKS-

- Install Java SE 21 version (Product: x64 Installer) to run the Jar file. Link to download Java SE
  21 (https://download.oracle.com/java/21/latest/jdk-21_windows-x64_bin.exe)
- Create the following path in the machine (C: \Users\prana\Downloads\CSA_ProjectTeam\CSA_ProjectTeam\input.txt) and store the input.txt file.
- Enter 0000111000001100(3596) in the common bus and click on the LOAD Button near the PC.
- Click IPL to initialize the memory and instructions with values from the input.txt file. It also initializes and shows all data simultaneously.
- Click on the Single Step button for load and store to execute and the output value is displayed in registers.
- Click on the assembler button and select input text file(ipl.txt) which translates the input into output text which contains hexadecimal locations
- Follow the above steps and click on RUN for the instructions to be executed and the final output is displayed.

Steps to be followed:

Click the INIT button to load the program counter at the beginning. The "Custom Init" button will cause a dialog box to appear, allowing the user to select the IPL file (which need not be named Init.txt) to be used as the simulator's starting point for code execution. If the "Init" or "Custom Init" button is pressed, the PC will be identified as the first location mentioned in the file's first line.

Select LD for MAR after reading the memory locations, then click the instruction toggle bits that match the memory address. When you choose the "Load" button, the value or instruction stored in MAR will be loaded into MBR.

Locate Store Memory, Toggle the Instruction bits that correspond to the memory address by clicking on them, then click LD that corresponds to MAR. Toggle the bits for the instruction that correspond to the value or instruction by clicking on them, then click LD for MBR. When you click the "Store" button, the value or instruction that is recorded in MBR will be stored in MAR.

To do Single Step, first click the INIT button to load the initial memory address location on the PC, and then click the "SS" button to initiate Single Step. Click the "SS" button after loading the PC value containing the memory that has to be single-stepped if the memory values have been manually saved.

- Click IPL button to

- Opens file folder

- Click ipl.txt file on it

-Using the instruction selector buttons, pick address location 7.

-To execute single-step instructions, click SS.

- Program terminates is at address 10.

2. Project a

To upload the input file (ipl.txt), click the simulator's assembler button.

The output file, which has the distinct format name "" (yyyyMMddHHmms), will be downloaded into the directory containing the JAR file.