

CSCI 6461 Computer System Architecture

Project Part 2 Design Notes

Team - 5

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Classes

Simulator.java

All of the instructions needed to move data between memory and general-purpose registers, between processor registers and I/O devices, and to carry out operations like conditional movements are contained in this file.

Constants.java

All of the constants used in the simulator's design are defined by this class.

MainFrame.java

Methods for updating the user interface (UI) are included in this class.

Memory.java

This class provides a 2048-word capacity that can be increased to 4096 words, simulating memory for the CISC architecture.

OpCodes.java

This class defines the opcodes used in the simulator.

Register.java

This class gives the size of the register and represents a register in a computer system that can store a binary value.

Util.java

This is a utility class that implements general-purpose word conversions.

Word.java

This class represents a word in the simulator, capable of holding a 16-bit binary value.

GUI

CSCI 6461 Machine Simulator

MemoryCache Cache miss!

Console Input (Enter 21 numbers)

Console Output

Op-codes 15 14 13 12 11 10

GPR 9 8 7 6 5

IXR

I

Address 4 3 2 1 0

Buttons: Load PC, Load MAR, Load MBR, Load GPR0, Load GPR1, Load GPR2, Load GPR3, Load IXR1, Load IXR2, Load IXR3, IPL, Upload Value, ST+, Store, Load, Reset, Run, HLT

In part 2, we added a Program 1 load button to load Program 1 and developed an extended text box to show the Keyboard Console, Printer Display, and CACHE at the bottom of the GUI.