CSCI 6461 Section 10 Fall 2023 Group 10 Project III – Design Document

Design Notes of the Code :

*Refer to the **CSCI 6461 Section 10 Fall 2023 Group 10 Project I – Hand Guide** and **CSCI 6461 Section 10 Fall 2023 Group 10 Project IIa – Hand Guide** for the information about design notes of project I. This document is a continuation of project IIa. Hence, we only consider the design notes/classes introduced as part of project III.

The objective of project III is to execute all the instructions that were translated into hexadecimal code as part of project IIa.

As part of this project there are no major changes in the file structure. Except for exceptions that were handled separately in a package.

In the Exceptions folder in the project structure, you can find below files

FileException.java : This class handles all the exceptions that were thrown by FileHandler.java when interpreting a file (either a json or text file).

InstFailedExecutionException: Sometimes instructions fail to execute due to different reasons. This class handles all "Instruction Failed To Execute" exceptions with all the necessary information like potential line to check in ProgramLoadFile.txt about the instruction and any locally generated exception message.

InstructionFormatException: When you don't input any instruction correctly, you can expect this exception. If you wrongly store instructions in different registers like storing 16bit word into PC or MAR, then you shall see this exception. Or else if you give different length input in the console you can get this exception.

MemoryFaultException: When there is an error when dealing with memory, you'll encounter this exception. Like if you are accessing a location that is not present in the memory.

OpCodeNotSupportedException: This exception is encountered when the operand for an instruction is not given properly or if you try to execute any instructions other than those that are described in the manual.

Simulator.java: The implementation for execution of all the instructions were implemented in this Simulator.java. Each method is appended with a comment to describe what that method does.

*When trying to execute the jar file take a note that to keep the InstructionsMetaData.json, HexFile.txt, ProgramLoadFile.txt and the jar file in a one single folder which is essential for the program to run.