Universal Machine Project CSC 411

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Help Received

We have received help from TA's such as Vincent and Ayman. We have also used Github Co – Pilot. We also took some of the source code provided in the lab rumdump to reference and help with assigning opcodes and register indices.

Implementation and departures from design

Everything has been correctly implemented.

There have been departures from design, we were originally going to write the majority of our functions in one file called opcodes.rs although we deviated from that and created separate files for input/output and memory related functions, then a separate file for register related functions.

Another departure from the design, was that we were originally going to have several structs, but decided to encapsulate these all into one struct. The struct has almost all of our original structures as properties.

Architecture

Our modules are iomemfuns.rs, lib.rs, main.rs, opfuns.rs, regfuns.rs, exec.rs, and rumload.rs.

Register functions are not within Iomemfuns.rs scope, and memory related functions are not within regfuns.rs scopes. Main.rs only purpose is to create a UM and start execution, as well as the collection of program instructions.

Run – Time

Executing 50 million instructions for our current machine takes 0.309 seconds

Hours Working

- We spent 2 to 3 hours analyzing the assignment

- We spent 4 to 5 hours preparing the design
- We spent 8 to 10 hours solving the problem after analysis