NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

School of Computer Science and Engineering
College of Engineering

Educational simulator

For analysing Pipelined LEGv8 architecture

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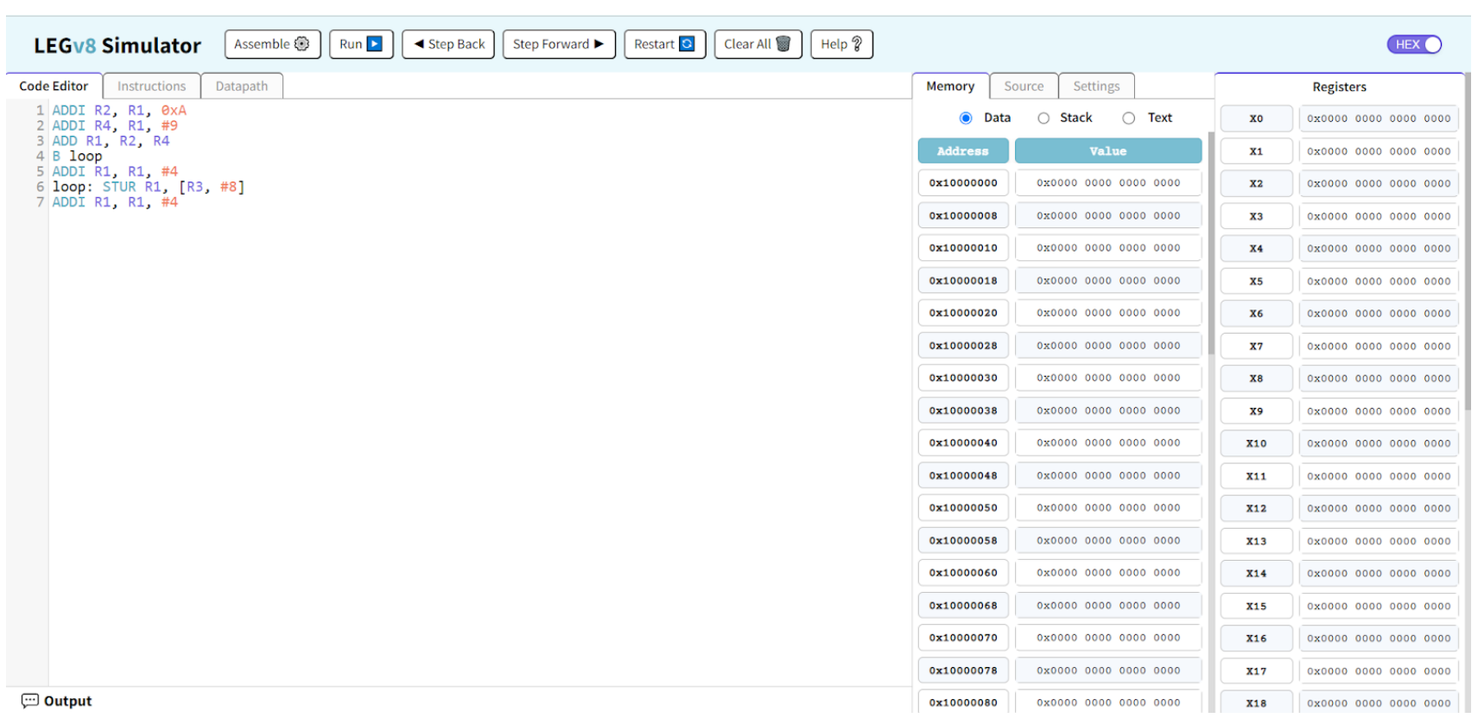
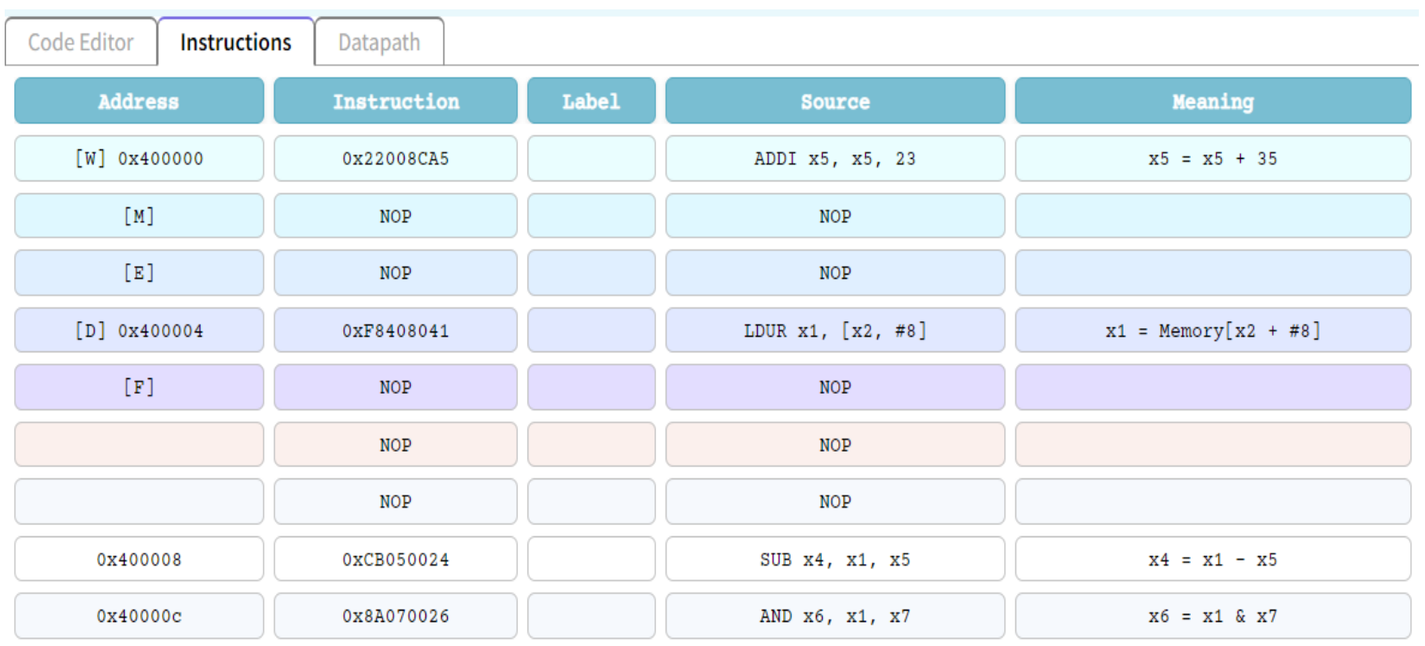


Features

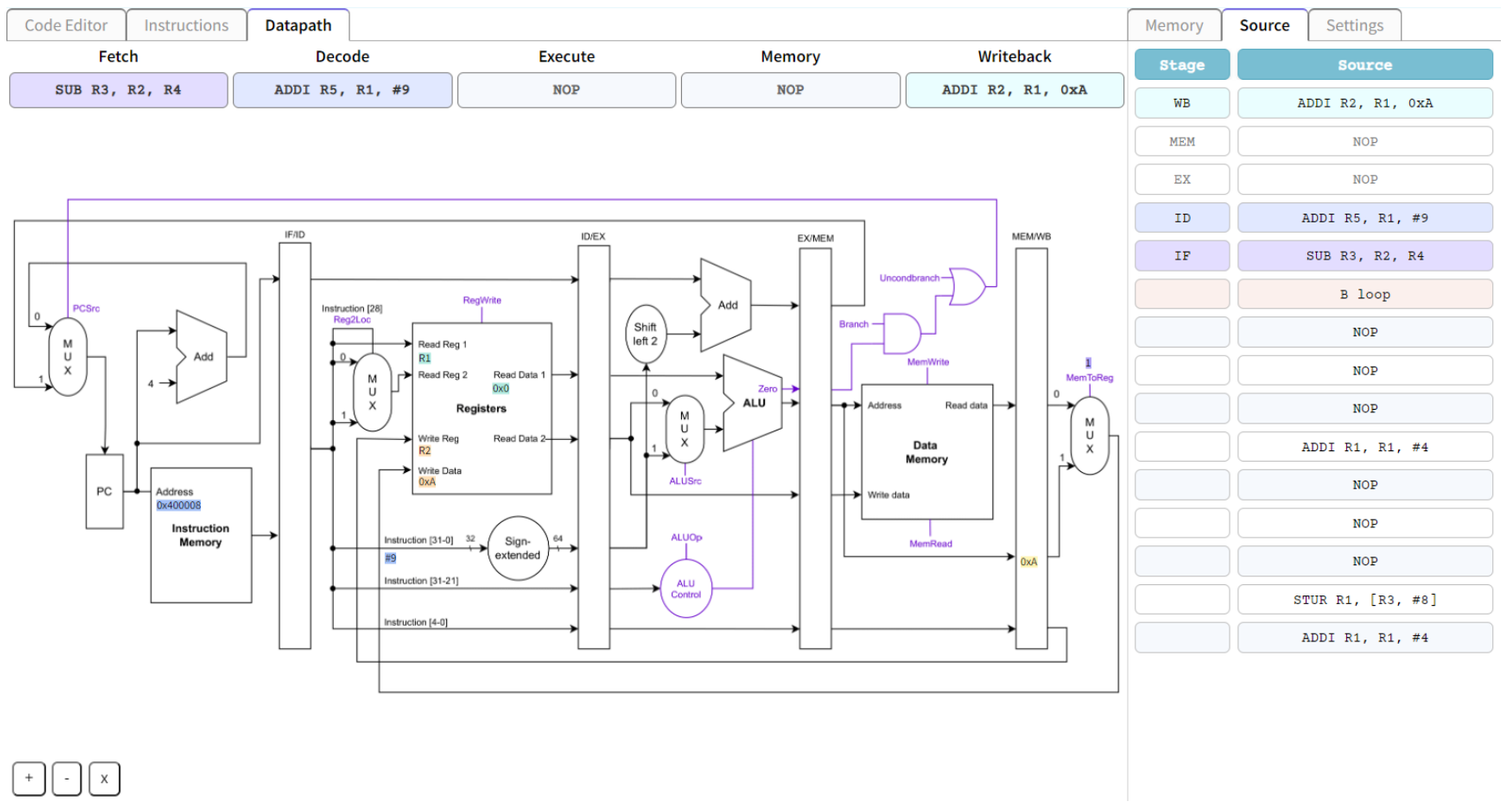
- Code Editor
- Assembler
- Single Cycle & Pipelined Execution
- Pipeline Hazard Detecting & Handling
- Datapath Visualisation
- Error Checking & Logging

Motivation

As computer architecture concepts are abstract and complex, there is a need for graphical, intuitive, and flexible teaching aids to supplement students' learning. However, there are currently no educational simulators built for the LEGv8 architecture.



Pipelined execution of assembled instructions



Datapath Visualisation during Pipelined instruction execution

Objective

Develop a **web application** that can be used by student to **enhance their learning and understanding of computer architecture** by providing them with a **user-friendly and interactive** medium to explore and learn the basic set of instructions that is supported by the **LEGv8 architecture**