

# **Laboratory Work 5 Report**

## **Control Unit Design for Multi-Cycle CPU**

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The report consists of four main parts.

The first part is answers of the preliminary work part as hard-copy. Hardcopy contains ISA configurations: From Mnemonics to Machine Code.

The second part contains the verification results of Multi-Cycle CPU controller design and lab4 comparison.

The third part consists of the three subroutines which is specified in “Validation of Operation via Microprogrammed Control” part of the preliminary work, their machine codes and the simulation results on the modelsim.

The last part contains Datapath design code, Controller Design code, unified code of Controller code and Datapath Code. Also, last part contains the controller design testbench and the unified design testbench.

### **1. Preliminary Work Part(Hard-copy)**