

CE/CZ3001

PROJECT- GROUP REPORT FORMAT
DEADLINE FOR SUBMISSION: 11TH APRIL
2016 (BEFORE 5PM).

Submit to Hardware Projects Lab

Part 1

1. Provide the testbench screen shots for the execution of a program which involves LW, SW and BEQ instructions along with R & I instructions.
2. Explain the working of LW, SW, and BEQ instructions in the same program.

Part 2

1. Provide the testbench screen shots for the execution of a program involves J, JR, and JAL instructions along with R & I instructions and part 1 instructions.
2. Explain the working of J, JR, and JAL instructions in the same program.

Part 3

Section-1

1. Assembly code of the original program segment given in the assignment.
2. Machine code (The input to the Imem txt file)
3. Report the number of clock cycles taken for the execution of the program (where hazards are taken care of)
4. Execution time of the given program segment

Section- II

5. Modification of the given program segment (loop unrolling and loop fusion separately) as mentioned of the question.
 - a. Modified assembly code and Machine code (The input to the Imem txt file).
 - b. Report the number of clock cycles taken for the modified program segment (where hazards are taken care of).
 - c. Execution time of the modified code.
6. Speed up of modified code when compared to original code in Section-1

Bonus topics

Any substantial improvement made in the hardware to improve the performance of the system.

- a. Data forwarding
- b. Control hazard removal
- c. Cache implementation