CE/CZ3001- Lab4 (Brief report)

Submission: Please submit the report when you come for Lab 5 (approx.: two weeks' time)

Write the MIPS assembly code for the computation of "e = (a-b)*(c^d)". Note that all variables are integers. The addresses and data of the variables are given in table below. You can load this data to data memory.

Data	a=0xD	b=0x3	c=0xE	d=0x2	e=0xF
Addresses	0x00000001	0x00000002	0x00000003	0x00000004	0x00000005

^ indicates XOR operation

*** indicates multiply operation**

- indicates subtraction operation

a) Write the MIPS assembly code for the computation of "e = (a-b)*(c^d)" with minimum number of instructions.
b) Modify the MIPS assembly code for the computation of "e = (a-b)*(c^d)" for a five stage pipelined architecture given in lab 4, after including NOPs for removing data-dependencies.
c) Show the snapshot of instruction and data-memory (all values in hexadecimal) from the ISIM simulation window.
d) Explain the working of the five stage pipeline both for LW and SW instruction (used in this code) using ISIM window as reference.
e) Indicate the execution time for running this program along with a snapshot of starting and ending time of the code in the ISIM simulator.
f) Calculate the steady state CPI of the code while running in a five stage pipelined architecture.