Shifa Tameer-e-Millat University

CS2153: Computer Organization and assembly Language, Fall 2023

Assignment No. 02

Instructor: Mr. Muhammad Haris Farooq **Due Date:** 30/11/23(Thursday)

Date: 28/11/23 **Total Marks:** 10

Instructions:

- **Late Submission is strictly not allowed**
- **Avoid unnecessary details and arguments**
- **Assessment of Assignment will be made on basis of quiz.**
- **Attempt all questions and write on simple sheets.**
- **Copying or plagiarism of any kind will result in zero marks; quiz will be on submission day of assignment.**
- **Assignment should be submitted in hard copy with title page attached on top.**

Use your knowledge of computer architecture to answer the following questions.

Q # 1. Write an ARM Assembly Program that will define two arrays of size 32-bit. Program will load the contents of one array and store into the other array

Q #2. Write an ARM Assembly Program that will define two arrays of 20 elements and use LDM/STM instruction to – Load/store 5 elements at a time

– Load/store 10 elements at a time

Q #3. Simulate ARM Assembly Programs in Keil uVision and show the output

– Load and Store array of size 16-bit

– Load and Store array of size 32-bit

– Load and Store bulk of data

Q #4. Write an assembly program that will compute result according to the equation below

Result = (Val1 + Val2) - (Val3 + Val4)

Val1 = 300 Val2

= 250

Val3 = 150

Val4 = 80

Run Your Assembly Program using ARM

Simulator to verify functionality

Q #5. Write an assembly program to compute Z

Z = - a + (b – c) – (b + d)

Define a,b,c,d & Z in data segment as 32-bit data a = 239 , b = 188 , c = 75 , d = 35

Store the result back in memory

Q #6. Write an assembly program to compute Z

Z= (a*b + c*d) / 16

Define a,b,c,d in memory as 32-bit data a = 50 , b = 60 , c = 80 , d = 40

Also define Z in memory

and store result in memory after computation