

MIPS Programming – Homework

Due Date: Saturday, June 23, 8PM

This homework must be done **INDIVIDUALLY**. Before starting working on the homework read again the academic integrity policy. Last semester 8 students failed the class due to cheating and plagiarism. No YouTube videos or other sources.

Use ONLY instructions listed in the Integer Instruction Set

(especially when it comes to branches – use only beq, bne or comparisons to zero, no blt, bgt, subi, no multi...) You can use li and move.

Note: for all programs that you will write be sure that you give a **detailed documentation**. Each program should be commented (documented) with the following information:

1. Your name
Last modified date:
Program name
2. Description (what the program does)
C (or java) -pseudo-code
3. Registers Use (name of registers and what they will store)

Program1 (60 points)

Write a MIPS assembly language program that will cover the following steps:

Prompts the user to enter a first integer in the range [-20, 5]

Prompts the user to enter a second integer < 0

Compute $(8 * \text{int1} + \text{int2} - 26)$ // don't use *subi*; don't use *mul*, *muli*

Print the value of the result together with a result message

Repeat

The program should enforce the rule that the two entered integers must be in the mentioned intervals. **If the entered integer is not in the specified range, the program prompts again the user to enter an integer in the specified range.**

Create a **sentinel** (sentinel value **99**) that will allow the user to exit the program.

Name your program: **yourlastname_h1.s**

Upload the homework on Blackboard under MIPS_H1

Program 2 (40 points)

Write a MIPS assembly language program that accomplishes the following tasks:

The program will prompt the user to enter 10 values that will represent the elements of an array.

Compute and display the average of these elements.

Display the elements of the array on one column, in reverse order with a step of 2.

For example: If you array elements are: 1 2 3 4 5 6 7 8 9 11

The display will be

11

8

6

4

2

Name your program: **yourlastname_h2.s**

Upload the homework on Blackboard under MIPS_H1

No cheating and/or plagiarism are allowed.