Project 2

CDA3103 - Computer Logic and Organization

Arrays in MIPS

Instructions:

- **Total points:** 100 points
  - **Printing a header :** 10 points
  - **Menu :** 10 points
  - **Sorting and Printing the sorted array :** 40 points
  - **Finding and printing minimum and maximum values:** 20 points
  - **Finding and printing the average:** 20 points

Early submission : 10 points (before April 19)

Software: MARS (MIPS Assembler and Runtime Simulator)

Submissions: Online (webcourse)

- One assembly files (yourname_Sorting.asm)

Deadline: April 30

Objectives: To learn how to:

- define, populate and print an array in MIPS
- implement functions to sort an array, find the maximum, minimum and average of the elements of an array

MARS Software:

You can find many tutorial videos on YouTube about how to use MARS. For example, there is a tutorial series starting from MIPS Tutorial 1 Intro and Mars. Watching few of them help you to know to install and use it.

Steps

1. Hard code the following array in your code
    - 2,3,1,5,6,7,1,4,8,8
2. Printout the header, general info, including
    - A general description about the project
    - The name of the developer
    - Anything else that you think is useful
3. Print Menu and ask the user to input the request
    1. Sort ascending
    2. Sort descending
    3. Calculate maximum
    4. Calculate minimum
    5. Find average
    6. Full report
    7. Exit
4. Print the output using a proper format. The outputs should be as below for any item in menu:
    1. Sort ascending: **The sorted array (ascending) is : 1 1 2 3 4 5 6 7 8 8**
    2. Sort descending: **The sorted array (descending) is : 8 8 7 6 5 4 3 2 1 1**
    3. Calculate maximum: **The maximum value is : 8**
    4. Calculate minimum: **The minimum value is : 1**
    5. Find average: **The average value is : 4**
    6. Full report: showing the outputs of 1,2,3,4,5
    7. Exit : **Good Bye**
5. Show the menu again and wait for the next request

Note: No need to include extra code for validation of the data entered by user.