CSD211:Computer Organization and Architecture

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Instructions-
1) Use only a MARS simulator for MIPS32 programming in the lab.
2) Programs given for Brainstorming can be submitted later, but other programs you need to code in the lab only.
3) Save your programs in a separate folder with .asm extension and delete it from the system after making final submission and before leaving the lab.
4) Show the working programs to the TAs available before submitting your word file at blackboard.

Question 1: String Reversal with Procedures **Problem:** Write a MIPS program that takes a string as input, reverses the string, and prints the reversed string. You must implement the string reversal logic in a separate procedure.

Requirements:

- Use a procedure to reverse the string.
- Use a procedure to read the input string.
- Use a procedure to print the reversed string.

Question 2: Recursive Factorial Calculation **Problem:** Write a MIPS program that calculates the factorial of a given non-negative integer using a recursive procedure. The main program should read the integer, call the factorial procedure, and print the result.

Requirements:

- Use a recursive procedure to calculate the factorial.
- Use a procedure to read the input integer.
- Use a procedure to print the result.

Question 3: Array Maximum Value Finder **Problem:** Write a MIPS program that finds the maximum value in an array of integers. The main program should initialize the array and call a procedure to find and return the maximum value.

Requirements:

- Use a procedure to find the maximum value in the array.
- Use a procedure to print the maximum value.
- Use a procedure to initialize and load the array values.