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MIPS Lab

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1. Answer to Part 3 2.26.1

20

Layman’s description of steps in MIPS Lab 1-5

a.

In Part 1 I read the documentation and referenced a lot of the help function in the Mars IDE to get a good idea of what tools I had to use and how to implement them. I read over some examples and made some sample programs.

b.

In Part 2 I first loaded the string <message> to a register, this register will be the pointer to the string. Then I loaded the contents of the byte that the pointer was pointing at and printed it to the console. Before the loop is reset, I print a new line character. When I reenter the loop, I check if the byte is equal to the last character of the string and if so, I end the program.

c.

In part 3 I copied the code from the text book and added a few lines to make it print the answer. I loaded the 2 starting values into temp registers. The loop starts checks if it has been run 10 times yet. If not it continues to decrement the loop counter and increment the final answer by 2. After the loop runs 10 times the answer is 20 and it is printed to console.

d.

In part 4 I asked the user what number he would like to be multiplied by 26. I take that number and use the power of sums equation to do the math. 26 in binary is 11010, which means the inputted digit is shifted 3 times and all three resulting numbers are summed up to equal the inputted digit \* 26.

e.

In Part 5 First I load 2 array pointers into separate registers, init the array size and add a loop counter. The loop is then started and checks if it has been looped 5 times, if so end. If it continues it adds the values of the 2 array indexes that are being pointed to. It then branches to 2 separate functions that print the current index and the sum of the 2 numbers. After the functions are called the flow jumps back to the loop and increments the arrays and decrements the loop counter.