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Lab 9 – Intro to MIPS assembler (part 3)

Step 4 Show resulting runs

#Evaluate the expression: 4x^2-8x+2

.data

prompt: .asciiz "Enter an input for x to evaluate 4x^2 - 8x +2: "

output: .asciiz "The output is "

negativePrompt: .asciiz "The number is negative."

positivePrompt: .asciiz "The number is positive."

.text

main:

li $v0, 4 #output the prompt for user

la $a0, prompt

syscall

li $v0, 5 #input the number and save it to $s0

syscall

move $s0, $v0

#square the input

#lw $t0, ($s0)

mul $t0, $s0, $s0

#multiply by 4

mul $t0, $t0, 4

#multiply input by -8

#lw $t2, ($s0)

mul $t2, $s0, -8

#add it all

add $t0, $t0, $t2

add $t0, $t0, 2

li $v0, 4 #print the output label

la $a0, output

syscall

li $v0, 1 #output the number that was entered

move $a0, $t0 #could also use lw $a0, $s0. Pseudo code

syscall

li $v0, 0xB

#print newline, 0xB = 11

#which is the system call to print a single character

la $a0, 0xA #0xA is the newline char

syscall

slti $t4, $t0, 0

beq $t4, 1, negative

#syscall

j positive

negative:

li $v0, 4 #print the output label

la $a0, negativePrompt

syscall

j exit

positive:

li $v0, 4 #print the output label

la $a0, positivePrompt

syscall

j exit

exit:

li $v0, 10 #exit program

syscall

