Task 4 Observations

We created the word variables val1, val2, val3, and a and initialized their values in the .data section. Then using registers, we loaded each word variables’ address as well as value and assigned them to their respective registers. Next we completed the equation “Register = val2 + 9 + val3 – val1”, by manipulating registers values and adding and subtracting them until the final value was achieved. We added r1 and r2 to the location r1, added r1 and r3 to the location r1, and subtracted r4 from r1 to the location r1.

Failure 1

We attempted to skip loading the address into each register, however, we discovered that both the address and value are required for the program to function, because it will not know where to access the value without having a location to pull it from. The error we discovered w as a “Segmentation Fault.” Looking into the error we found out that segmentation faults are caused by an illegal attempt to read or write memory.

Failure 2

Initially writing the code we attempted to place .section and .data as well as .section and .text on different lines, however, the program failed and would not run. We found that they both needed to be on the same lines for the program to function. .section specifically requires for you to specify the section you are trying to access in the same line.