ARM Assembly

Part 1

A screenshot of a computer screen

Description automatically generated

A screenshot of a computer screen

Description automatically generated

The images above show the code for the fourth program and the register values and the value of the Z-flag. The value of y after the program runs is 0 and the value of the Z-flag is 1. To find the value of the registers I typed: x/1wd 0x200a3, and that gave me the value of register 2, or y. Then to find the value of the Z-flag I types p/t $cpsr and this resulted in the Z-flag being 0001 which means the flag is set so it is 1.

A screenshot of a computer screen

Description automatically generatedPart 2

A screenshot of a computer screen

Description automatically generated

The images above are of the code and register value and Z-flag value after the code has been altered according to part 2 instructions. The value of y and the Z-flag do not change because the change is telling the program to jump to the part of the code that the part 1 code jump too, so there is no change. The only change is that when trying to find the value of y we do x/1wd 0x200a4 instead of x/1wd 0x200a3 because now the value of y is in register 3.

Part 3

A screenshot of a computer screen

Description automatically generatedA screenshot of a computer screen

Description automatically generated

The above images are the code, register values and Z-flag for ControlStructure1. To find the memory address I typed: p&x and then to view the value of that register I typed: x/1xw 0x2009c which gave me the hex value. Then to find the Z-flag I did the same and typed p/t $cpsr and got the Z-flag value to be 1.