CS2323 : COMPUTER ARCHITECTURE

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REPORT:

The way I approached this is to segregate the instructions on a 1st level using their opcode. For further segregation, I used comparison of funct3 and funct7 bits. That way I could disassemble the code easily.

Regarding the label part, I used a function called checkpoints, to note the places where a branch is taking place and I flagged it using an array. When I disassemble the corresponding instruction, I checked for the flag, if yes, I put a label there.

Regarding Error Handling:

The only times errors pop is when we try to branch to an instruction which was not declared. For these I used an integer max so that I could keep track of the total number of instructions. That way, whenever I might try to go to a non-existent instruction, error occurs.

Input handling is done using a while loop. It takes input until a particular input of “-1” is given to it, in which case is stops taking input and proceeds to disassembling.

Similarly, a for loop has been used to convert the given hex code into binary code. Also a function called ‘dth’(decimal to hex) has been implemented to output the immediate values in hex if necessary.