

Write the assembly language code in the Simplified IAS (as you were instructed in class), test it with the simulator. Make sure you test your assembly code and that ALL paths work correctly. There are three questions, each worth 10 points. You MUST use comments or lose 5 points per problem in question 1 and 2

1.

```
main () {  
  
    int i,a=1,b=2;  
  
    for (i=1; i<10; i++) {  
        if (i <=4) {  
            a += i;  
            b += i;  
        } else if ((i + a >=5) || (b < 8)) {  
            if (a <= b) {  
                a = -a;  
            } else {  
                b = -b;  
            }  
        } else if (b > a) {  
            a += i;  
        } else {  
            b += i;  
        }  
    }  
  
}
```

2. Write the C/C++ code for the following equation, then write the IAS assembly language code.

$$4 \sum_{j=1}^4 (2^j - 1)$$

The equation evaluates to 64

3. Write out a detailed explanation of the Fetch-execute cycle as we gone over it in class, including data movement, operands, and interrupts. Remember the fetch-execute cycle has been evolving over the lectures. This answer must be typed.

Turning in the Assignment: (you must do both sections)

Hard copy:

1. title page:

Section #
Repo name
your Name

in large font on the page. At the bottom of the page, include a non-empty statement of help delivered and help received. It is OK to state that no help was given or received. It is **NOT** ok to omit the statement of help.

Soft copy:

1. Use this link to create your repo <https://classroom.github.com/a/igpvVC7h>
2. Assembly code for question 1 as the file name q1.asm
3. for question 2: the C/C++ code as q2.cpp and Assembly code as the file name q2.asm
4. The written explanation of the fetch-execute cycle Assembly code for question 3 as the file name q3.txt, doc, or pdf.
5. Edit the readme.md file, add the following:
 - Change X to be 4
 - Name
 - List anything that doesn't work (that you know of)
6. Remember, if the code is not on the github website, then you didn't turn it.