

# Assignment 1

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Download all latex-tikz and C codes from

<https://github.com/Alokking/EE4013/tree/main/Assignment1/codes>

<https://github.com/Alokking/EE4013/blob/main/Assignment1/Assignment.tex>

## 1 PROBLEM

(Q 18) Consider the following C program.

```
#include <stdio.h>
int main()
{
    int i, j, count;
    count = 0;
    i = 0;
    for(j=-3; j<=3; j++)
    {
        if((j>=0) && (i++))
            count = count + j;
    }
    count = count + i;
    printf("%d", count);
    return 0;
}
```

Which one of the following options are correct ?

- 1) The program will not compile successfully.
- 2) The program will compile successfully and output 10 when executed.
- 3) The program will compile successfully and output 8 when executed.
- 4) The program will compile successfully and output 13 when executed.

## 2 SOLUTION

Answer : Option 2

- Initially,  $i=0$ ,  $count=0$  and a for loop is running from  $j= -3$  to  $j=3$ . If condition inside the for loop will execute when  $j \geq 0$  and  $i$  is non zero.

So for  $j=-3, -2, -1$ , it will not go inside the if condition, as  $j$  is less than 0.

- When  $j=0$ , initial value of  $i$  is also 0, so if condition will not satisfy, but  $i++$  will increment the value of  $i$  after checking the if condition. so now  $i = 1$ .
- When  $j=1$ , the value of  $i$  is 1, so it will enter the if condition and the value of count will be  $0+1 = 1$ , and  $i++$  will increment the value of  $i$  after checking the if condition. so now  $i = 2$ .
- When  $j=2$ , the value of  $i$  is 2, so it will enter the if condition and the value of count will be  $1+2 = 3$ , and  $i++$  will increment the value of  $i$  after checking the if condition. so now  $i = 3$ .
- When  $j=3$ , the value of  $i$  is 3, so it will enter the if condition and the value of count will be  $3+3 = 6$ , and  $i++$  will increment the value of  $i$  after checking the if condition. so now  $i = 4$ .
- After running the for loop, the value of count variable is 6 and the value of  $i$  is 4.

So,  $count=count+i$  will be  $6+4=10$ . Hence,

The program will compile successfully and output 10 when executed So the correct option is (2)