

# Assignment 1

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Download all latex-tikz codes from

<https://github.com/piyushSTK/C-DS/blob/main/Assignment1/assignment1.tex>

However as  $n = 0$ ; the condition

```
if(n<0) printf("%d", n);
```

is still not satisfied and  $0/2 = 0$ . Hence it will not terminate and will not print anything as print statement is after **convert(n/2)** call.

## 1 PROBLEM

(Q 26) Consider the following C function.

```
void convert(int n){
    if(n<0) printf("%d", n);
    else{
        convert(n/2);
        printf("%d", n%2);
    }
}
```

Which of the following will happen when the function **convert** is called with any positive integer  $n$  as argument?

- 1) It will print the binary representation of  $n$  and terminate.
- 2) It will print the binary representation of  $n$  in the reverse order and terminate.
- 3) It will print the binary representation of  $n$  and will not terminate.
- 4) It will not print anything and will not terminate.

## 2 SOLUTION

Answer : D) It will not print anything and will not terminate.

### Explanation

This is a problem involving recursion, as  $n > 0$  the portion

```
else{
    convert(n/2);
    printf("%d", n%2);
}
```

will be evaluated. In this portion, **convert** is called again with value of  $n/2$  and subsequently  $n$  goes from  $n- > 0$ .