

IT 161_ Lab8

Name: Diyeen Dasgupta

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STD ID: 202151188

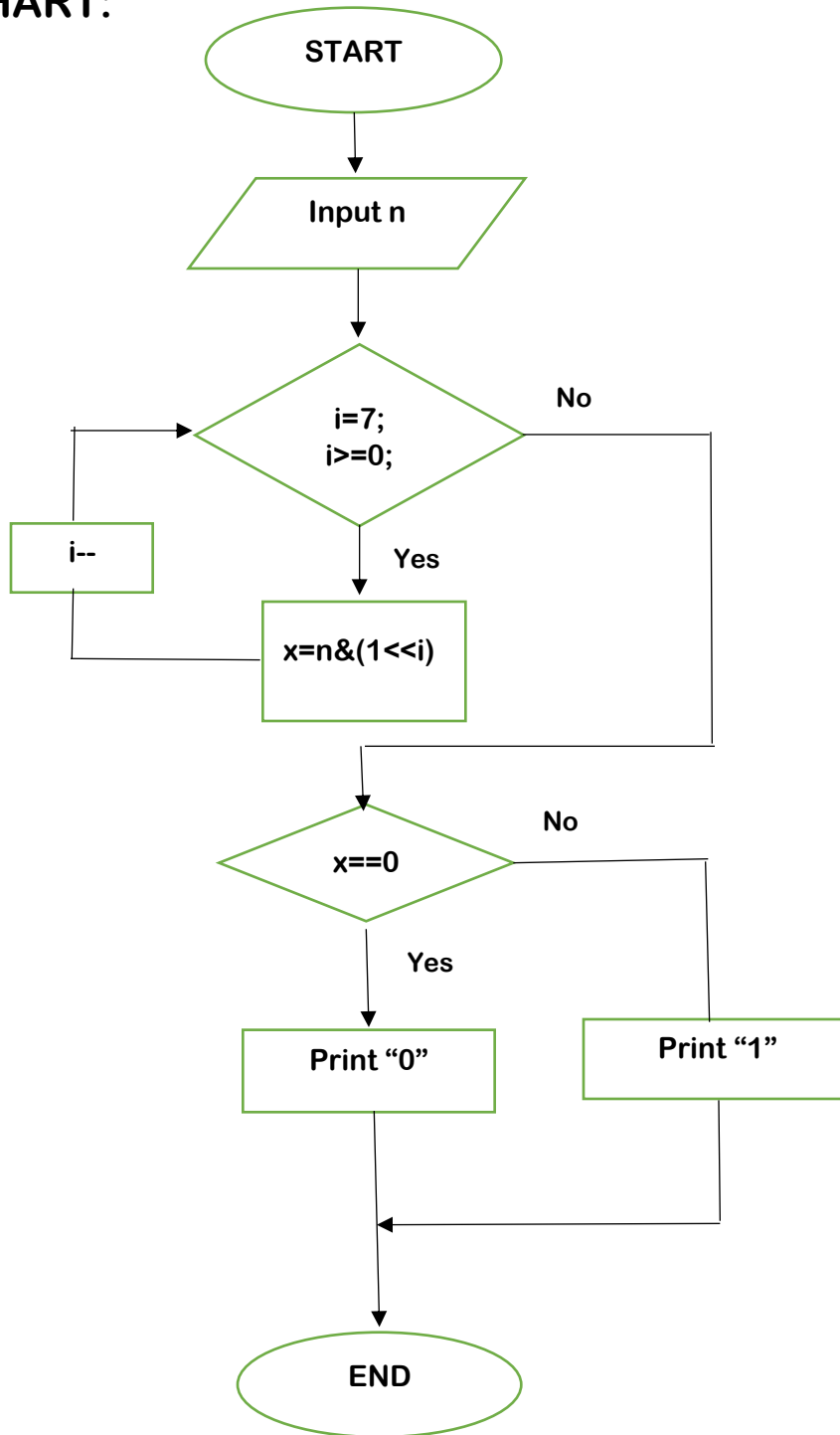
Experiment: To create a C program to display the stored binary equivalent of a given SIGNED integer (input through keyboard) on the screen, using bitwise operators.

Software: Online compiler and debugger for C.

Methodology:

1. Declare n,i,x as integer.
2. Take the input n from the user.
3. Using a for loop($i=7, i \geq 0$) perform the steps 4 and 5.
4. Use bitwise and operator and do $n \& (1 \ll i)$.
5. Store the result in x.
6. If the result $x == 0$, then print "0" else print "1".
7. Print the whole binary equivalent of the integer.
8. End of the program.

FLOWCHART:



CODE:

```
#include <stdio.h>

int main()
{
    int n,i,x;
    printf("Enter an integer");
    scanf("%d",&n);
    for(i=7;i>=0;i--)
    {
        x=n&(1<<i);
        if(x==0)
            printf("0");
        else
            printf("1");
    }
    return 0;
}
```



The screenshot shows a code editor window titled 'main.c'. The editor has a toolbar with buttons for Run, Debug, Stop, Share, Save, Beautify, and Download. The code in the editor is identical to the one shown in the previous block. The code is written in C and is intended to find the binary equivalent of a signed integer using bitwise operators. The code is as follows:

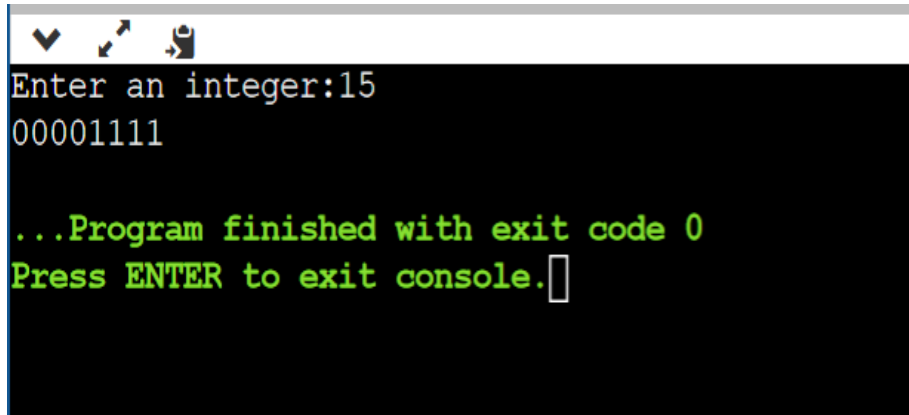
```
1  /*DIPEAN DASGUPTA ROLL:202151188
2  LAB 8: To find the binary equivalent of a signed integer using bitwise operator*/
3
4  #include <stdio.h>
5
6  int main()
7  {
8      int n,i,x;
9      printf("Enter an integer");
10     scanf("%d",&n);
11     for(i=7;i>=0;i--)
12     {
13         x=n&(1<<i);
14
15         if(x==0)
16             printf("0");
17         else
18             printf("1");
19     }
20
21     return 0;
22 }
23
```

RESULT:

Sample1:

Enter an Integer:15

Binary equivalent is: 00001111

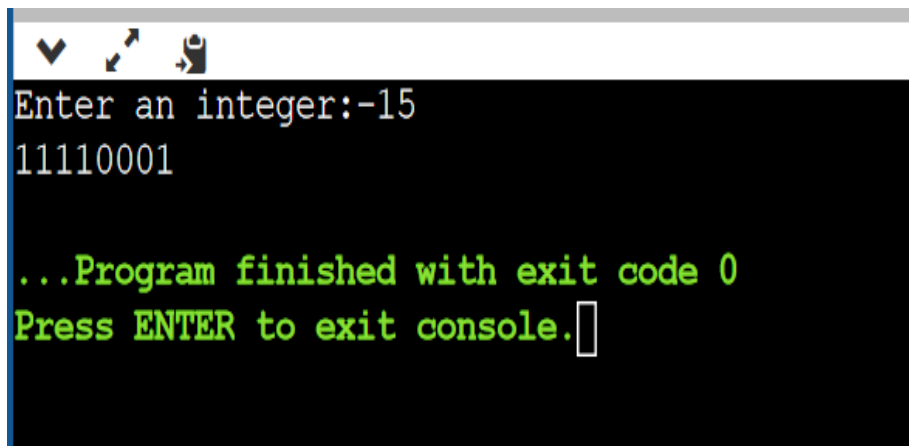
A screenshot of a console window with a black background and white text. At the top, there are three small icons: a downward arrow, a left arrow, and a right arrow. The text in the console reads: "Enter an integer:15", followed by "00001111" on the next line. Then, in green text, it says "...Program finished with exit code 0" and "Press ENTER to exit console." followed by a cursor icon.

```
Enter an integer:15
00001111

...Program finished with exit code 0
Press ENTER to exit console.
```

Sample2:

Enter an Integer: -15

A screenshot of a console window with a black background and white text. At the top, there are three small icons: a downward arrow, a left arrow, and a right arrow. The text in the console reads: "Enter an integer:-15", followed by "11110001" on the next line. Then, in green text, it says "...Program finished with exit code 0" and "Press ENTER to exit console." followed by a cursor icon.

```
Enter an integer:-15
11110001

...Program finished with exit code 0
Press ENTER to exit console.
```

