

IT LAB 4

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Date:19/01/2022

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Experiment 1

TASK: Create a program to generate multiplication table of any integer using while loop.

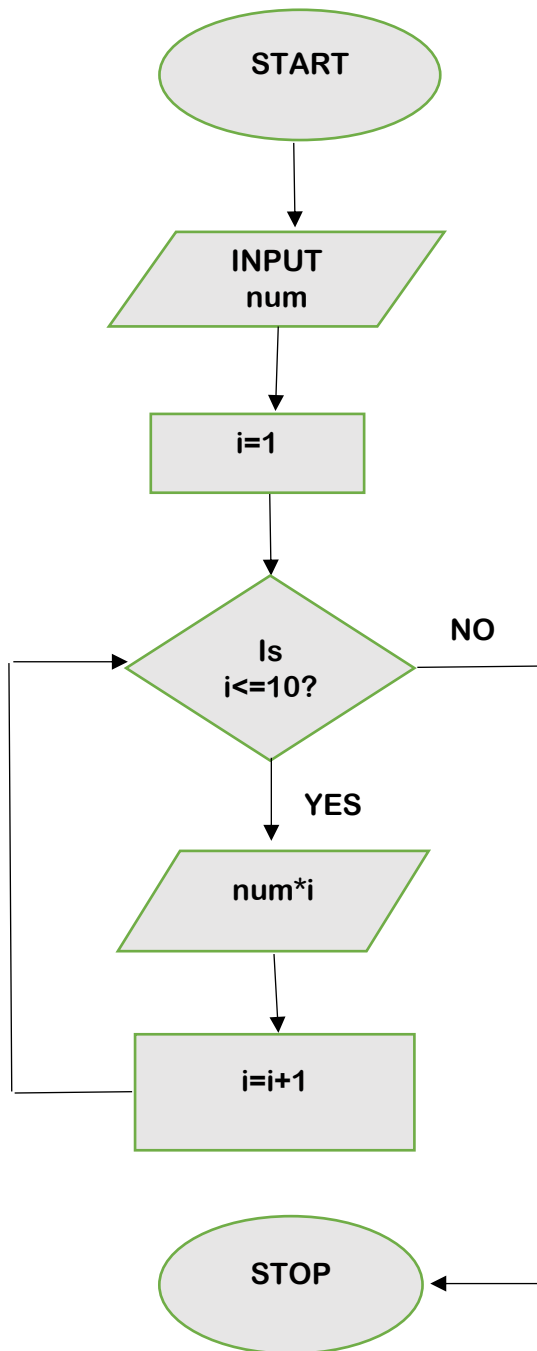
Objective: To create a program to generate multiplication table of any integer using while loop.

Software: OnlineGDB

Methodology:

1. Declare int variable “num”.
2. Input the value from user and store it in “num”. For example, 14.
3. Then run a while loop that will run from 1 to 10.
4. Each time it will calculate the successive multiple of the number “num”. With each iteration, it will print the multiple of num in specified format num*i.
5. Print the multiplication table and end the program.

Flowchart:



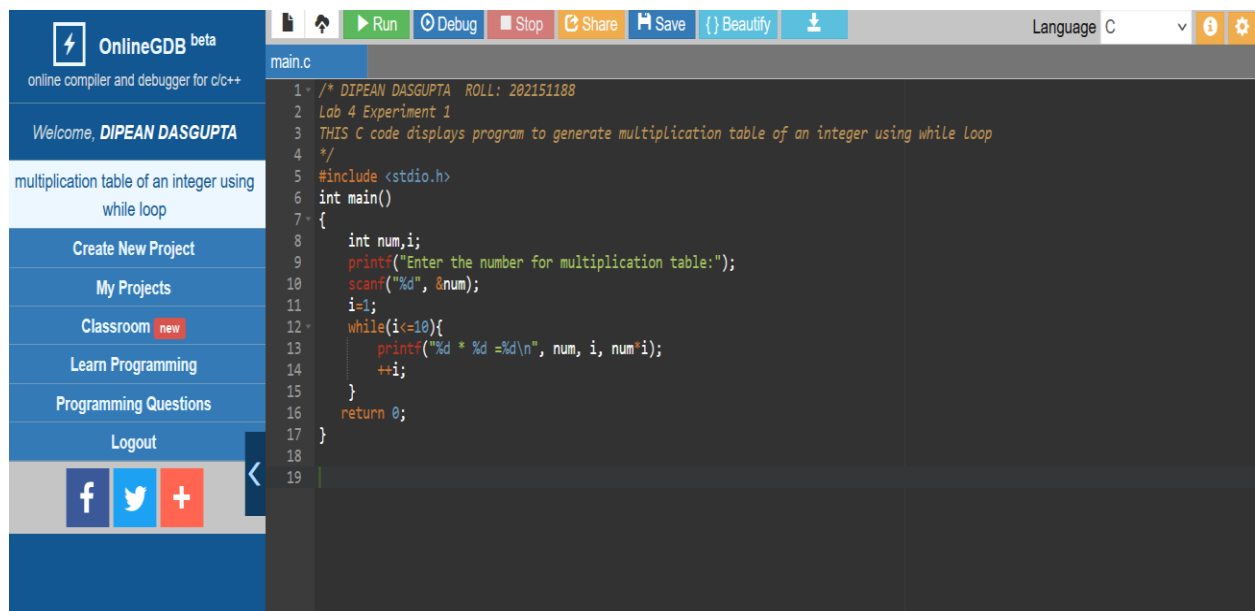
CODE:

```
#include <stdio.h>

int main()
{
    int num,i;

    printf("Enter the number for multiplication table:");
    scanf("%d", &num);

    i=1;
    while(i<=10){
        printf("%d * %d =%d\n", num, i, num*i);
        ++i;
    }
    return 0;
}
```



The screenshot displays the OnlineGDB web interface. On the left is a sidebar with navigation links: 'Create New Project', 'My Projects', 'Classroom' (marked as new), 'Learn Programming', 'Programming Questions', and 'Logout'. Below these are social media icons for Facebook, Twitter, and a general share icon. The main area shows a C program named 'main.c' with the following code:

```
1 /* DIPEAN DASGUPTA ROLL: 202151188
2 Lab 4 Experiment 1
3 THIS C code displays program to generate multiplication table of an integer using while loop
4 */
5 #include <stdio.h>
6 int main()
7 {
8     int num,i;
9     printf("Enter the number for multiplication table:");
10    scanf("%d", &num);
11    i=1;
12    while(i<=10){
13        printf("%d * %d =%d\n", num, i, num*i);
14        ++i;
15    }
16    return 0;
17 }
18
19
```

The interface includes a top toolbar with buttons for Run, Debug, Stop, Share, Save, Beautify, and Download. The language is set to C.

RESULT:

Sample 1

Enter the number for multiplication table: 14

14*1=14

14*2=28

14*3=42

14*4=56

14*5=70

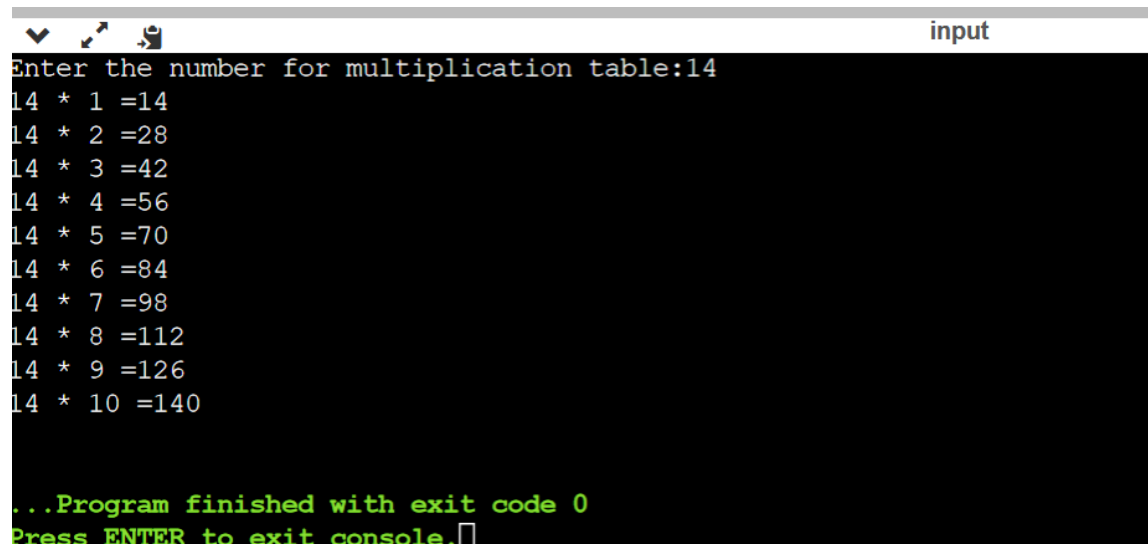
14*6=84

14*7=98

14*8=112

14*9=126

14*10=140



```
input
Enter the number for multiplication table:14
14 * 1 =14
14 * 2 =28
14 * 3 =42
14 * 4 =56
14 * 5 =70
14 * 6 =84
14 * 7 =98
14 * 8 =112
14 * 9 =126
14 * 10 =140

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

Experiment 2

TASK: Create a program to convert from degree Centigrade to Fahrenheit and vice versa using if statement.

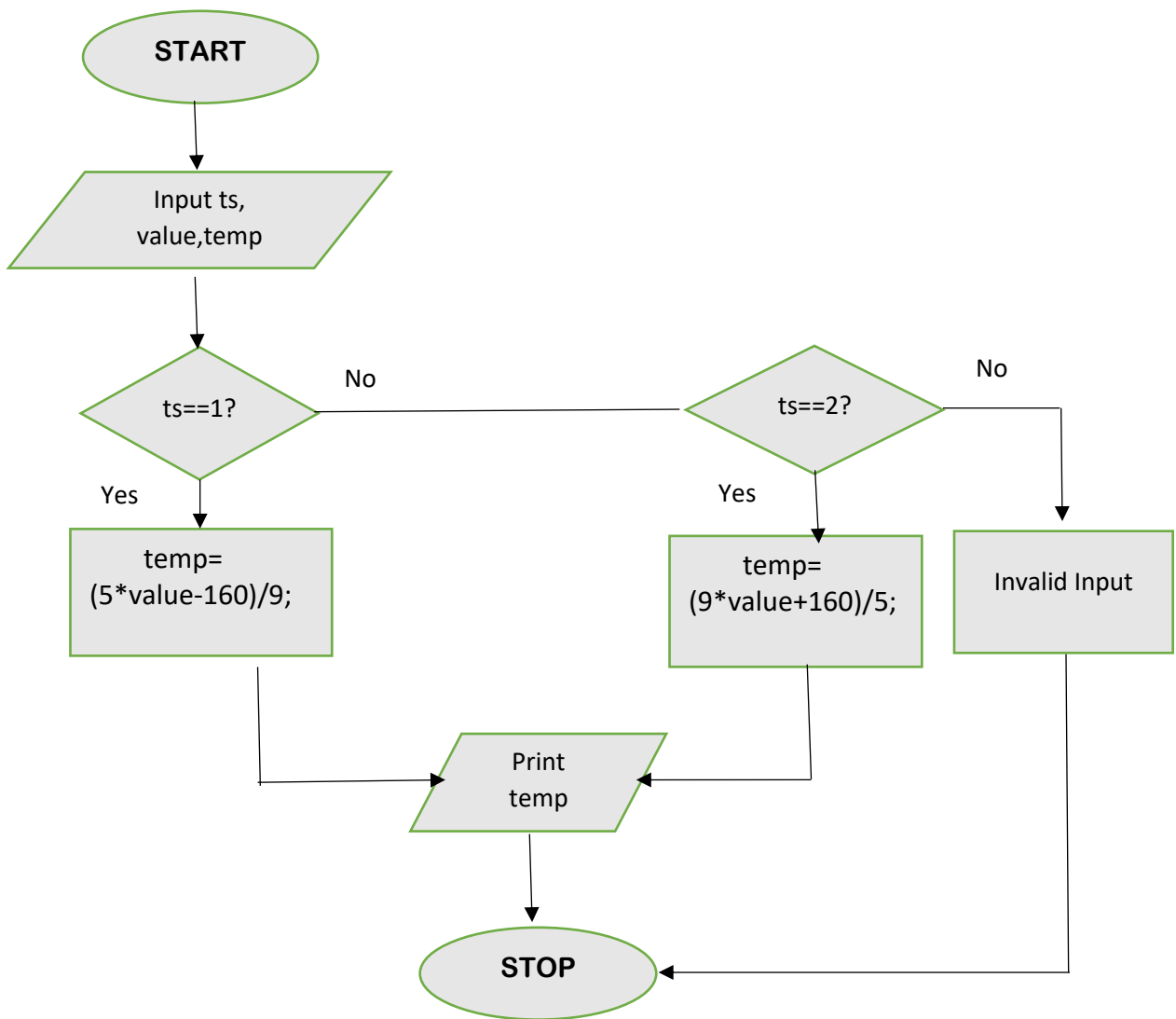
Objective: To create program to convert from degree Centigrade to Fahrenheit and vice versa using if statement.

Software: OnlineGDB

Methodology:

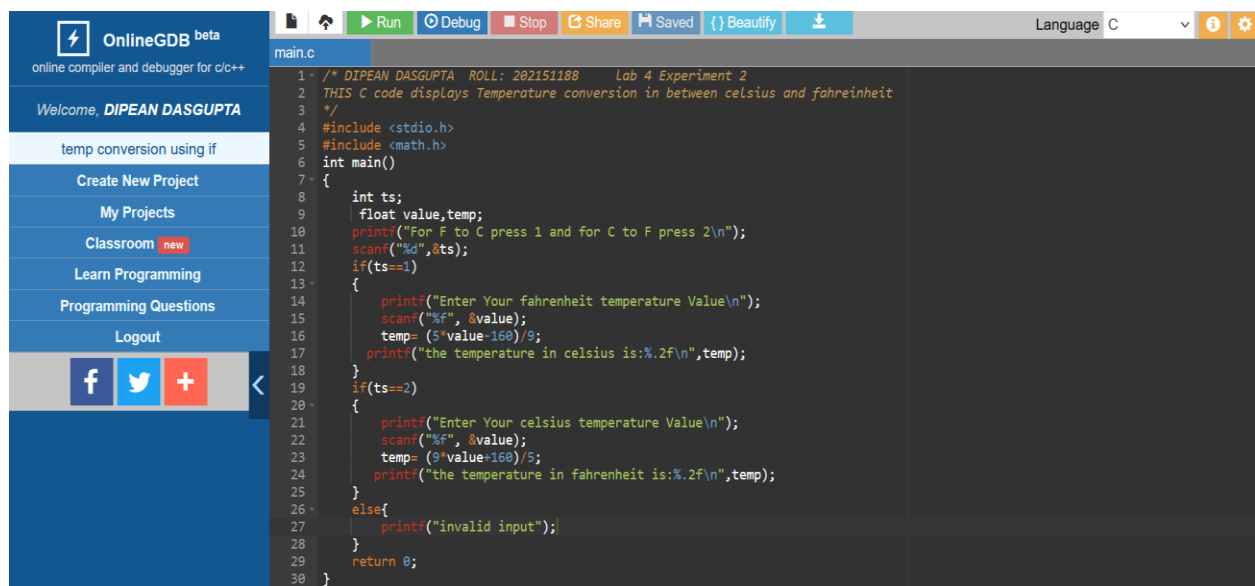
1. Declare variable ts as int and value, temp as float.
2. Set 1 for F to C and 2 for C to F.
3. Take input from user and store it in “value”.
4. For F to C, execute the formula $(5 \times \text{value} - 160) / 9$ and store the result in “temp”.
5. For C to F, execute the formula $(9 \times \text{value} + 160) / 5$ and store the result in “temp”.
6. Print the value of “temp” and end the program.

Flowchart:



CODE:

```
#include <stdio.h>
#include <math.h>
int main()
{
    int ts;
    float value,temp;
    printf("For F to C press 1 and for C to F press 2\n");
    scanf("%d", &ts);
    if(ts==1)
    {
        printf("Enter Your fahrenheit temperature Value\n");
        scanf("%f", &value);
        temp= (5*value-160)/9;
        printf("the temperature in celsius is:%.2f\n",temp);
    }
    if(ts==2)
    {
        printf("Enter Your celsius temperature Value\n");
        scanf("%f", &value);
        temp= (9*value+160)/5;
        printf("the temperature in fahrenheit is:%.2f\n",temp);
    }else{
        printf("Invalid input");
    }
    return 0;
}
```



The screenshot shows the OnlineGDB beta web interface. On the left is a sidebar with navigation links: "Create New Project", "My Projects", "Classroom new", "Learn Programming", "Programming Questions", and "Logout". Below these are social media icons for Facebook, Twitter, and a plus sign. The top of the interface has a toolbar with buttons for "Run", "Debug", "Stop", "Share", "Saved", and "Beautify". The main area is a code editor displaying a C program for temperature conversion. The code is as follows:

```
1 /* DIPEAN DASGUPTA ROLL: 202151188 Lab 4 Experiment 2
2 THIS C code displays Temperature conversion in between celsius and fahrenheit
3 */
4 #include <stdio.h>
5 #include <math.h>
6 int main()
7 {
8     int ts;
9     float value,temp;
10    printf("For F to C press 1 and for C to F press 2\n");
11    scanf("%d",&ts);
12    if(ts==1)
13    {
14        printf("Enter Your fahrenheit temperature Value\n");
15        scanf("%f", &value);
16        temp= (5*value-160)/9;
17        printf("the temperature in celsius is:%.2f\n",temp);
18    }
19    if(ts==2)
20    {
21        printf("Enter Your celsius temperature Value\n");
22        scanf("%f", &value);
23        temp= (9*value+160)/5;
24        printf("the temperature in fahrenheit is:%.2f\n",temp);
25    }
26    else{
27        printf("Invalid input");
28    }
29    return 0;
30 }
```

RESULT:

Sample 1

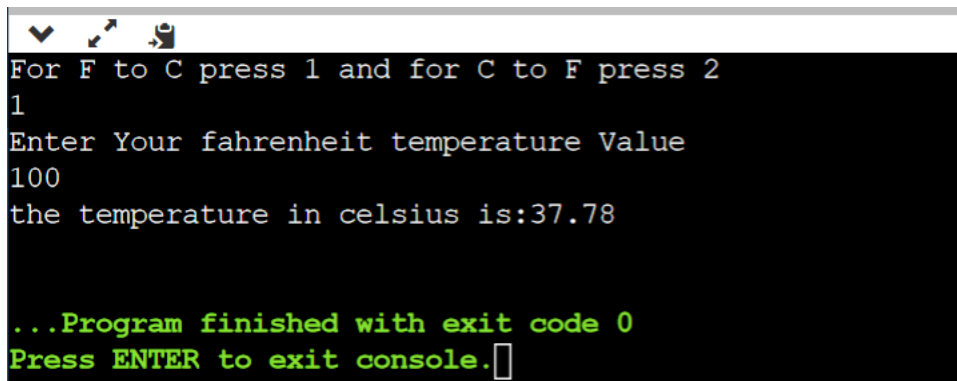
For F to C press 1 and for C to F press 2

1

Enter Your Fahrenheit temperature Value

100

the temperature in celsius is:37.78

A screenshot of a terminal window with a black background and white text. The text shows the program's instructions and user input for Sample 1. At the bottom, it indicates the program finished with exit code 0 and prompts the user to press ENTER to exit the console.

```
For F to C press 1 and for C to F press 2
1
Enter Your fahrenheit temperature Value
100
the temperature in celsius is:37.78

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

SAMPLE 2

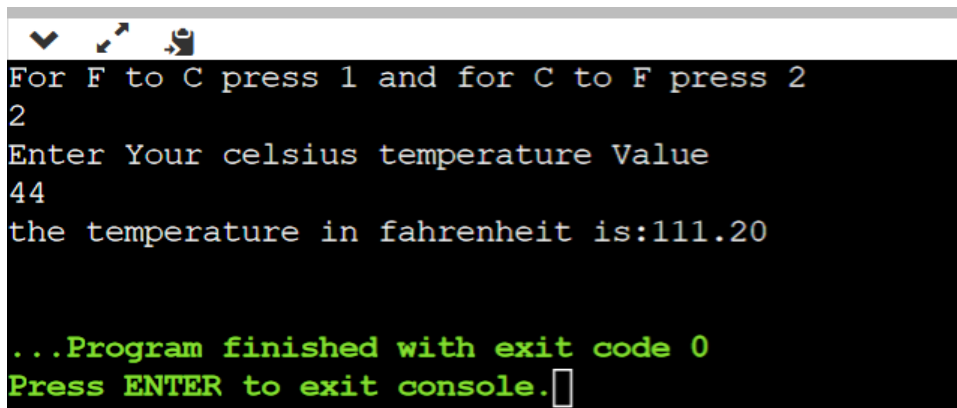
For F to C press 1 and for C to F press 2

2

Enter Your Celsius temperature Value

44

the temperature in fahrenheit is:111.20

A screenshot of a terminal window with a black background and white text. The text shows the program's instructions and user input for Sample 2. At the bottom, it indicates the program finished with exit code 0 and prompts the user to press ENTER to exit the console.

```
For F to C press 1 and for C to F press 2
2
Enter Your celsius temperature Value
44
the temperature in fahrenheit is:111.20

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


Experiment 3

Task: Create a program to find the greatest in 3 numbers using nested-if.

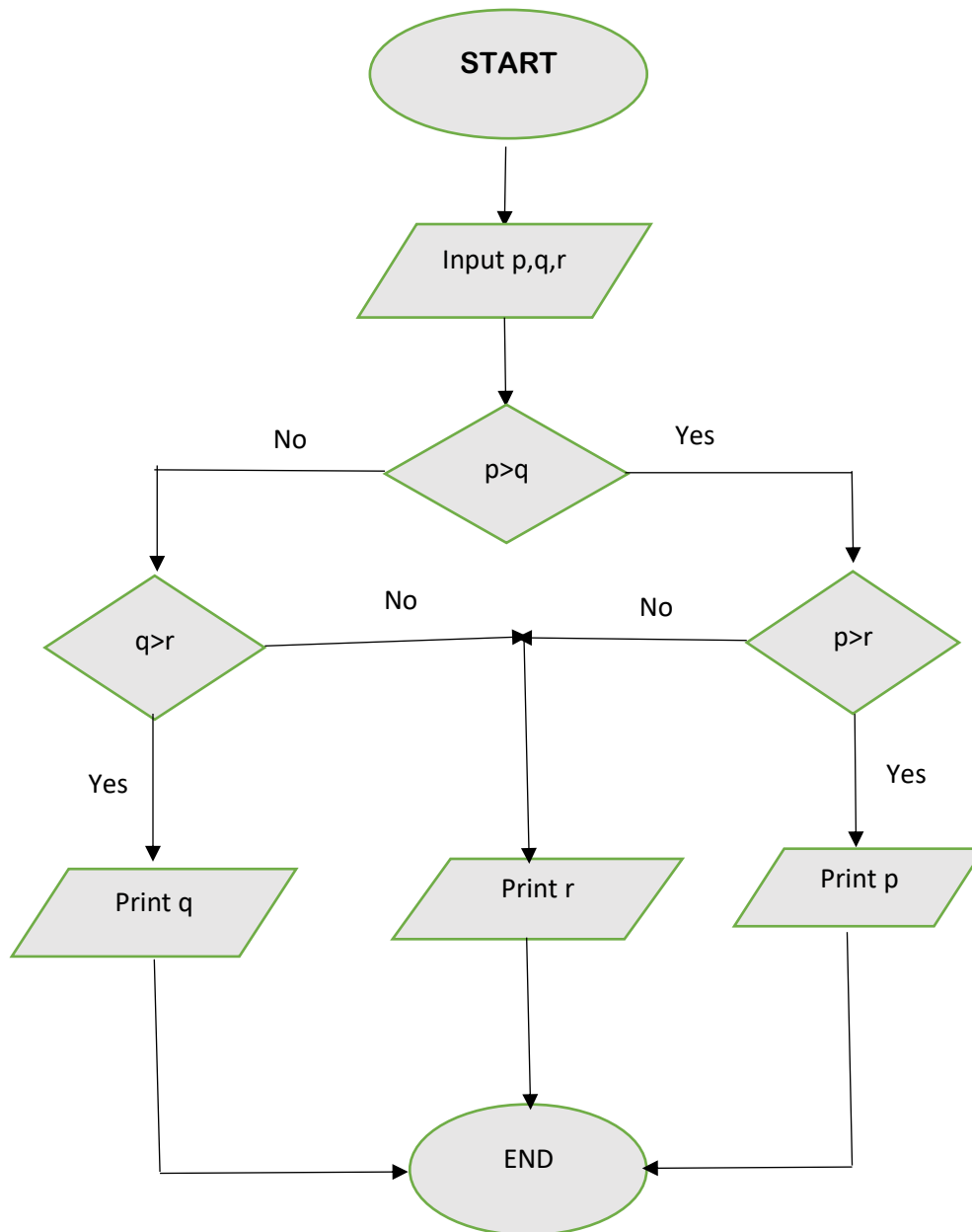
Objective: To create program to find the greatest in 3 numbers using nested-if.

Software: OnlineGDB

Methodology:

1. Declare 3 variables p,q,r as int.
2. Input the values from user.
3. if(p>q) and if(p>r), p is the greatest number; else r is the greatest number.
4. If (q>p) and if(q>r), q is the greatest number, else r is the greatest number.
5. Show the result in output and end the program.

FLOWCHART:



CODE:

```
#include <stdio.h>
```

```
int main(){  
    int p, q, r;
```

```
    printf("Enter three numbers : ");  
    scanf("%d %d %d", &p, &q, &r);
```

```
    if(p>q){  
        if(p>r){  
            printf("the greatest number is:%d",p);  
        } else {
```

```
            printf("the greatest number is: %d",r);  
        }  
    } else {
```

```
        if(q > r) {
```

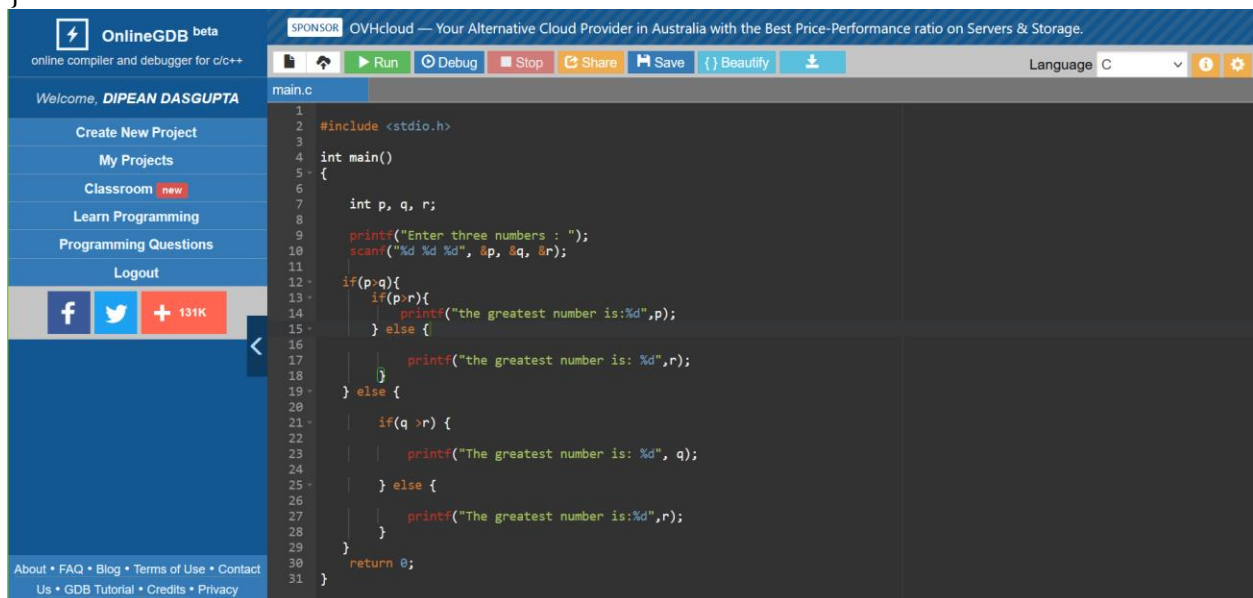
```
            printf("The greatest number is: %d", q);
```

```
        } else {
```

```
            printf("The greatest number is:%d",r);  
        }
```

```
    }  
    return 0;
```

```
}
```



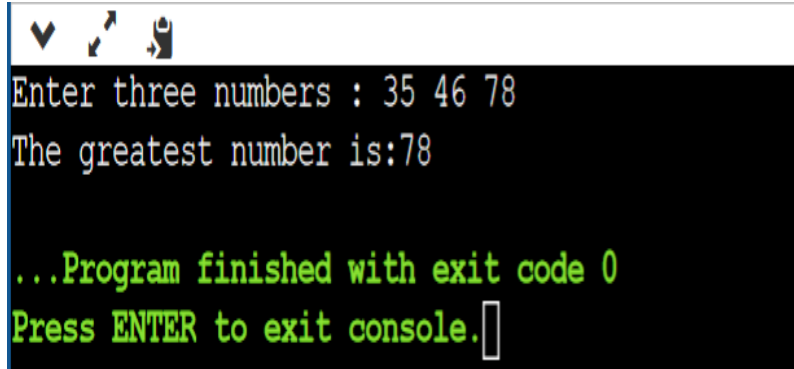
The screenshot shows the OnlineGDB beta interface. The left sidebar contains navigation links: 'Welcome, DIPEAN DASGUPTA', 'Create New Project', 'My Projects', 'Classroom new', 'Learn Programming', 'Programming Questions', 'Logout', and social media links for Facebook, Twitter, and a '+ 131K' button. The main area displays the C code being executed, with line numbers 1 through 31. The code is the same as provided in the previous blocks. The top bar includes a 'SPONSOR' for OVHcloud and a 'Language' dropdown set to 'C'. The bottom of the interface shows a footer with links: 'About • FAQ • Blog • Terms of Use • Contact Us • GDB Tutorial • Credits • Privacy'.

RESULT:

Sample 1

Enter Three Numbers: 35 46 78

The greatest Number is: 78

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 magnifying glass, and a document. The text in the console reads: "Enter three numbers : 35 46 78", "The greatest number is:78", "...Program finished with exit code 0", and "Press ENTER to exit console." followed by a cursor icon.

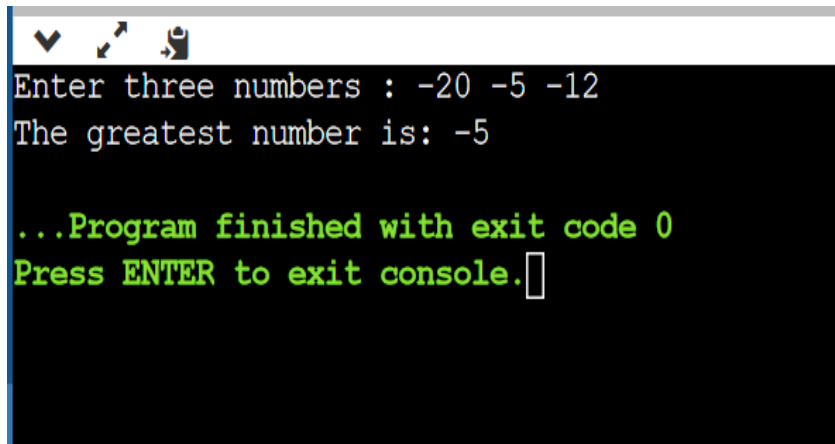
```
Enter three numbers : 35 46 78
The greatest number is:78

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

Sample 2

Enter three Numbers: -20 -5 -12

The greatest Number is: -5

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 magnifying glass, and a document. The text in the console reads: "Enter three numbers : -20 -5 -12", "The greatest number is: -5", "...Program finished with exit code 0", and "Press ENTER to exit console." followed by a cursor icon.

```
Enter three numbers : -20 -5 -12
The greatest number is: -5

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

