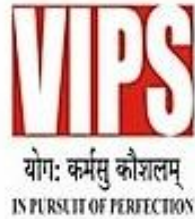


**Practical file submitted in partial
fulfillment for the evaluation of**
“Programming in C-Lab”



**VIVEKANANDA SCHOOL
OF ENGINEERING AND
TECHNOLOGY**

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Enrolment no:

Branch & Section: AI-DS (B)

Submitted To:

- Dr. Deepika Bhatia

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SECTION 1

GGSIPIU



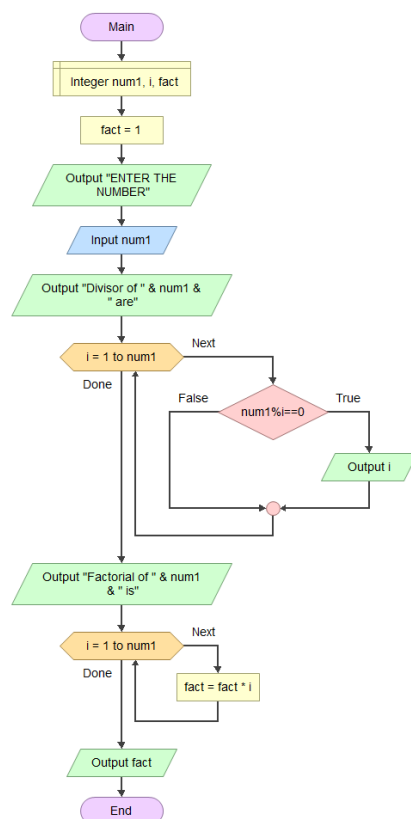
EXPERIMENT 1

Problem statement:

Write a program to find divisor or factorial of a given number.

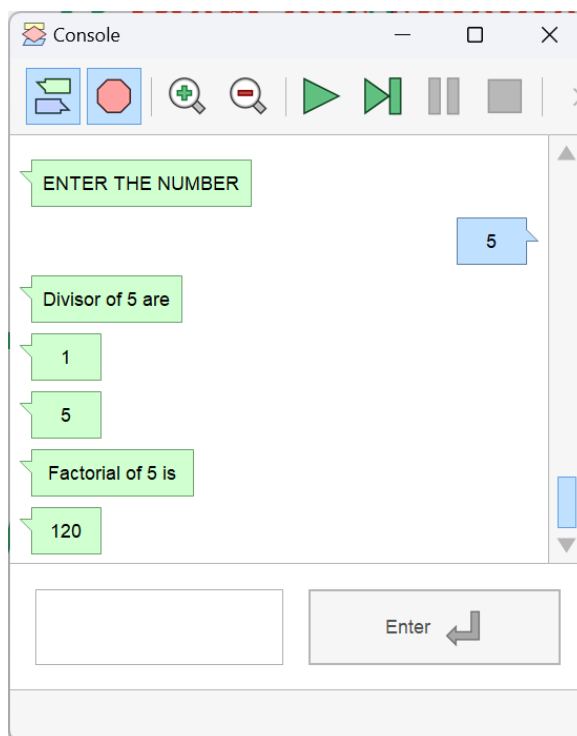
Algorithm:

Flowchart:



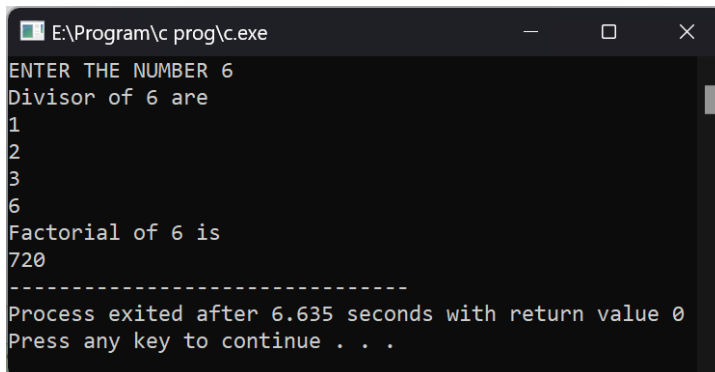
Pseudocode:

```
0  Function Main
1      Declare Integer num1, i, fact
2
3      Assign fact = 1
4      Output "ENTER THE NUMBER"
5      Input num1
6      Output "Divisor of " & num1 & " are"
7      For i = 1 to num1
8          If num1%i==0
9              Output i
10         End
11     End
12     Output "Factorial of " & num1 & " is"
13     For i = 1 to num1
14         Assign fact = fact * i
15     End
16     Output fact
17 End
```

Output:

Programming Code:

```
#include <stdio.h>
int main(){
    int num1, i, fact;
    fact = 1;
    printf("ENTER THE NUMBER ");
    scanf("%d", &num1);
    printf("Divisor of %d are \n", num1);
    for(int i=1;i<=num1;i++){
        if(num1%i==0){
            printf("%d\n",i);
        }
    }
    printf("Factorial of %d is \n", num1);
    for(int i=1;i<=num1;i++){
        fact = fact*i;
    }
    printf("%d", fact);
    return 0;
}
```

Output:

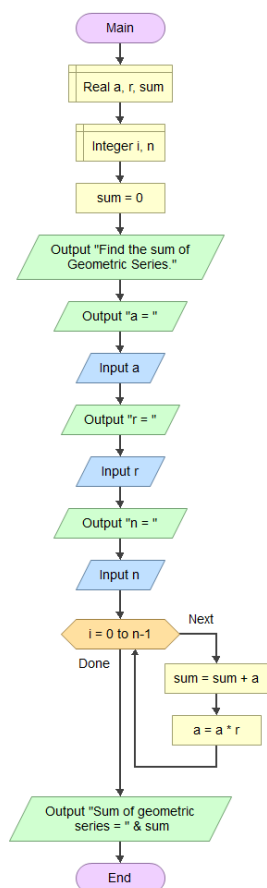
```
E:\Program\c prog\c.exe
ENTER THE NUMBER 6
Divisor of 6 are
1
2
3
6
Factorial of 6 is
720
-----
Process exited after 6.635 seconds with return value 0
Press any key to continue . . .
```

Learning Outcomes:

EXPERIMENT 2

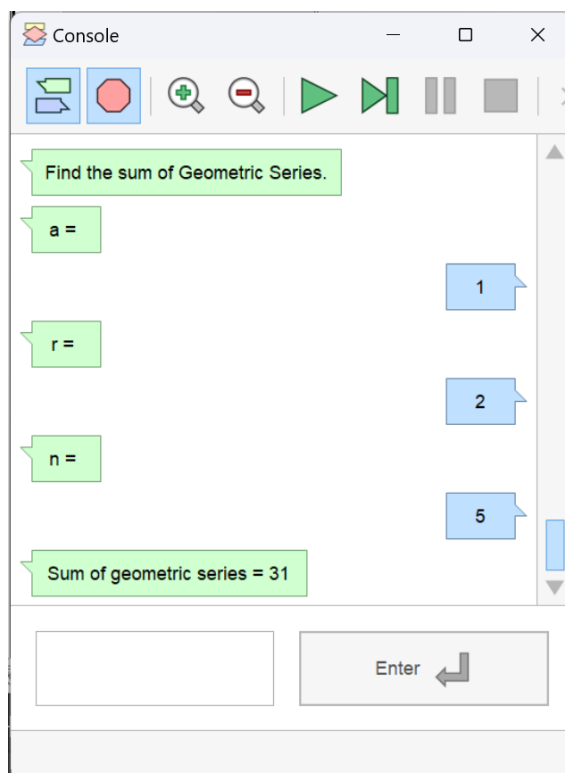
Problem statement:

Write a program to find sum of geometric series.

Algorithm:**Flowchart:**

Pseudocode:

```
0  Function Main
1      Declare Real a, r, sum
2      Declare Integer i, n
3
4      Assign sum = 0
5      Output "Find the sum of Geometric Series."
6      Output "a = "
7      Input a
8      Output "r = "
9      Input r
10     Output "n = "
11     Input n
12     For i = 0 to n-1
13         Assign sum = sum + a
14         Assign a = a * r
15     End
16     Output "Sum of geometric series = " & sum
17 End
```

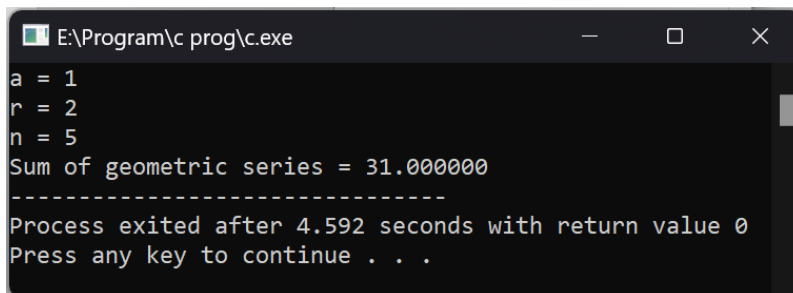
Output:

Programming Code:

```
#include <stdio.h>
int main(){
    float a, r, sum =0;
    int n;

    printf("first term, a = ");
    scanf("%f", &a);
    printf("common ratio, r = ");
    scanf("%f", &r);
    printf("number of terms, n = ");
    scanf("%d", &n);

    for(int i=0;i<n;i++){
        sum = sum + a;
        a = a * r;
    }
    printf("Sum of geometric series = %f", sum);
    return 0;
}
```

Output:

```
E:\Program\c prog\c.exe
a = 1
r = 2
n = 5
Sum of geometric series = 31.000000
-----
Process exited after 4.592 seconds with return value 0
Press any key to continue . . .
```

Learning Outcomes:



SECTION 2

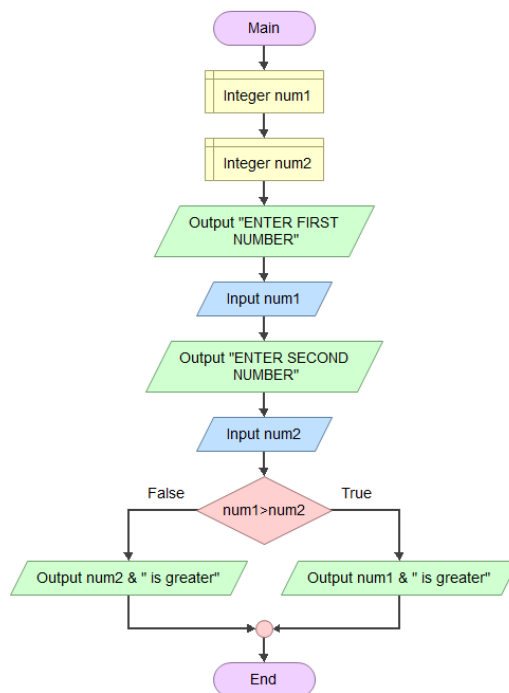
BEYOND THE CURRICULUM



EXPERIMENT 1

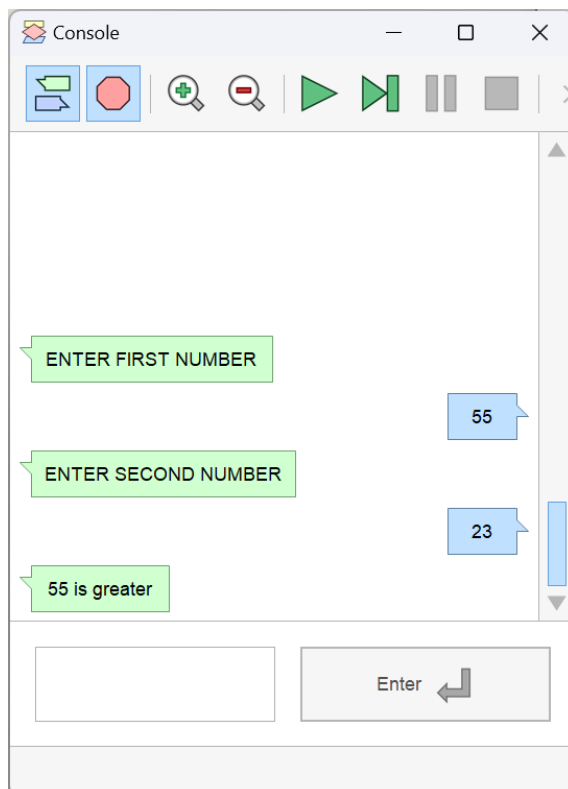
Problem statement:

Write an algorithm that reads the two numbers and print the value of the largest number. Also draw the flowchart using Flowgorithm.

Algorithm:**Flowchart:**

Pseudocode:

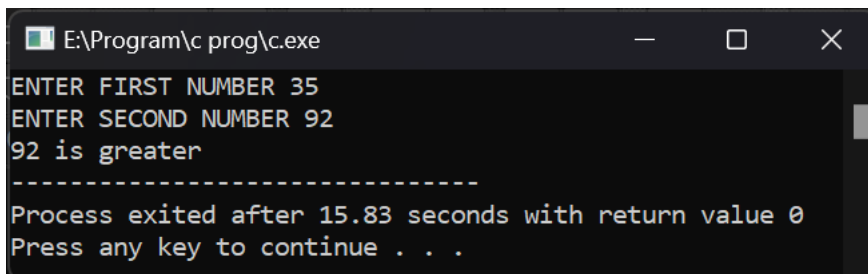
```
0  Function Main
1      Declare Integer num1
2      Declare Integer num2
3
4      Output "ENTER FIRST NUMBER"
5      Input num1
6      Output "ENTER SECOND NUMBER"
7      Input num2
8      If num1>num2
9          Output num1 & " is greater"
10     Else
11         Output num2 & " is greater"
12     End
13 End
```

Output:

Programming Code:

```
#include <stdio.h>

int main(){
    int num1, num2;
    printf("ENTER FIRST NUMBER");
    scanf("%d", &num1);
    printf("ENTER SECOND NUMBER");
    scanf("%d", &num2);
    if(num1>num2) {
        printf("%d is greater", num1);
    } else {
        printf("%d is greater", num2);
    }
    return 0;
}
```

Output:

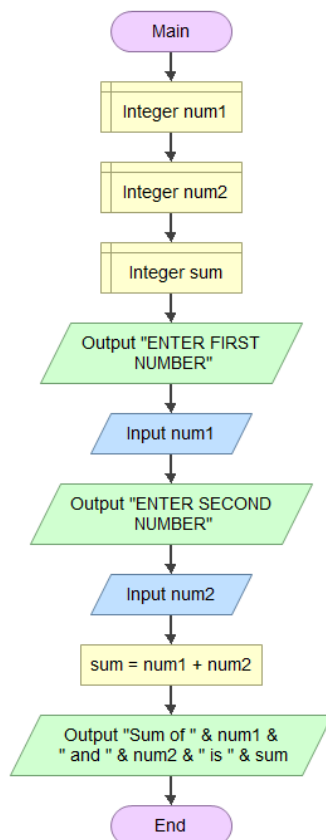
```
E:\Program\c prog\c.exe
ENTER FIRST NUMBER 35
ENTER SECOND NUMBER 92
92 is greater
-----
Process exited after 15.83 seconds with return value 0
Press any key to continue . . .
```

Learning Outcomes:

EXPERIMENT 2

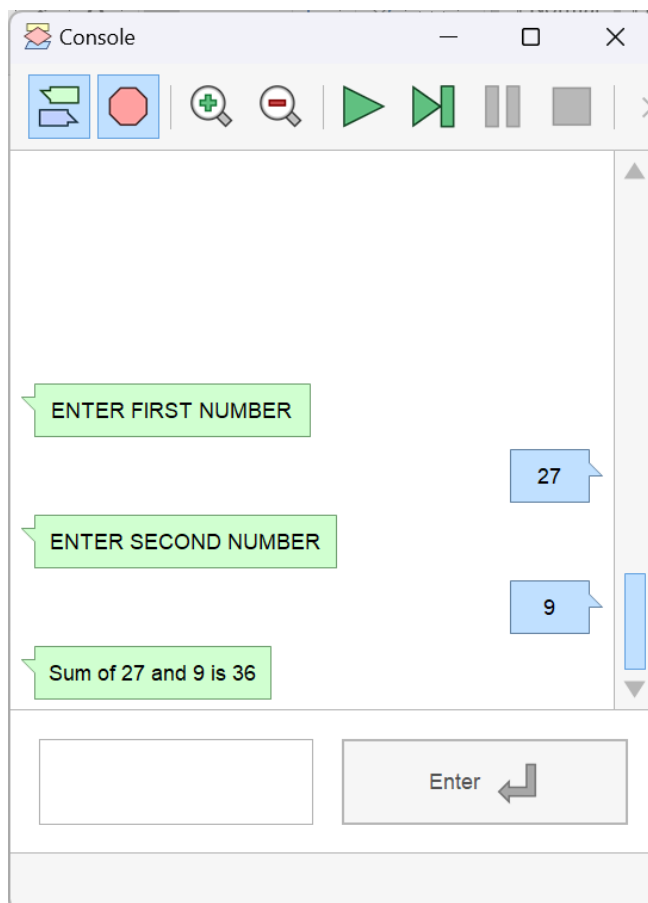
Problem statement:

Write an algorithm and draw a flowchart to find the sum of two numbers.

Algorithm:**Flowchart:**

Pseudocode:

```
0  Function Main
1      Declare Integer num1
2      Declare Integer num2
3      Declare Integer sum
4
5      Output "ENTER FIRST NUMBER"
6      Input num1
7      Output "ENTER SECOND NUMBER"
8      Input num2
9      Assign sum = num1 + num2
10     Output "Sum of " & num1 & " and " & num2 & " is " & sum
11 End
```

Output:

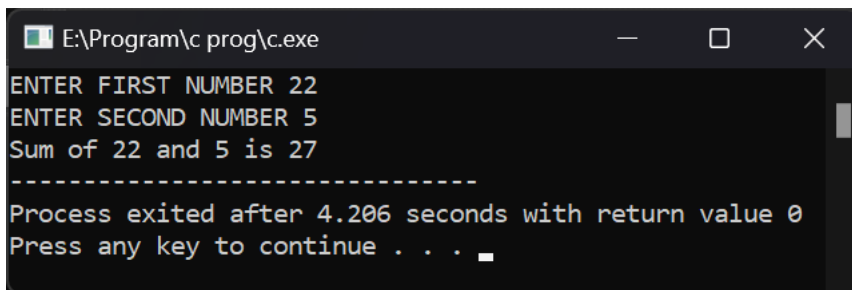
Programming Code:

```
#include <stdio.h>

int main(){
    int num1, num2, sum;
    printf("ENTER FIRST NUMBER ");
    scanf("%d", &num1);
    printf("ENTER SECOND NUMBER ");
    scanf("%d", &num2);

    sum = num1+num2;

    printf("Sum of %d and %d is %d", num1, num2, sum);
    return 0;
}
```

Output:

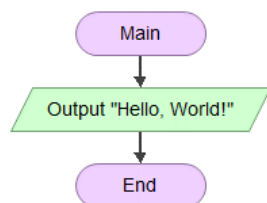
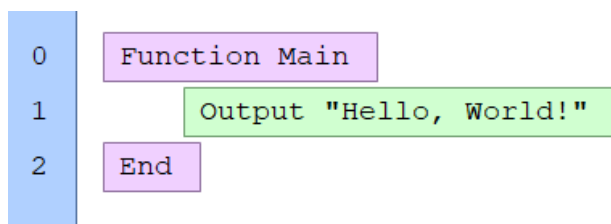
```
E:\Program\c prog\c.exe
ENTER FIRST NUMBER 22
ENTER SECOND NUMBER 5
Sum of 22 and 5 is 27
-----
Process exited after 4.206 seconds with return value 0
Press any key to continue . . .
```

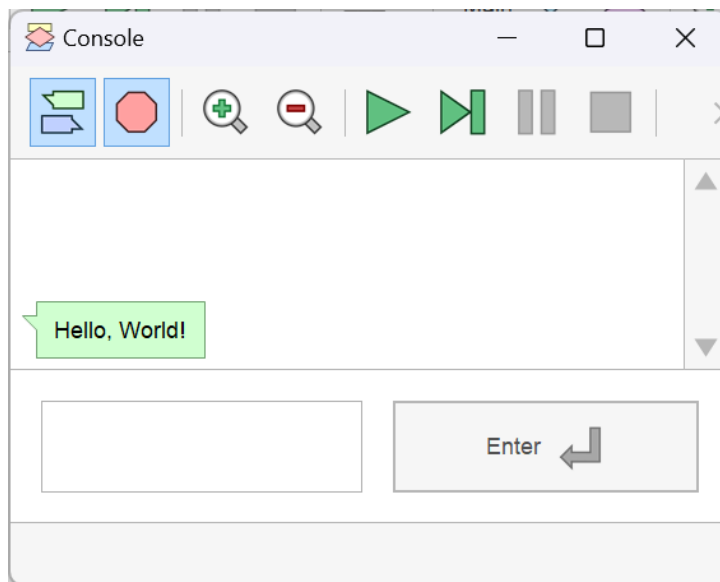
Learning Outcomes:

EXPERIMENT 3

Problem statement:

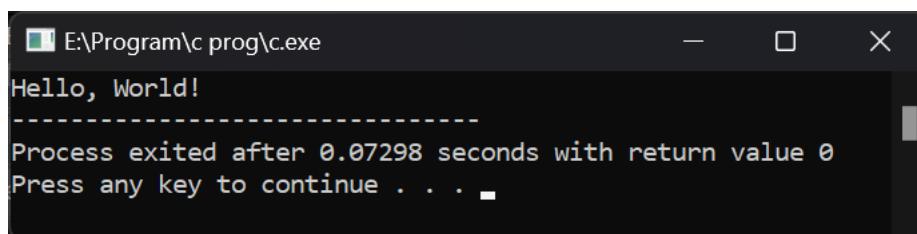
Write a C program to print Hello world. Also draw the flowchart using Flowgorithm.

Algorithm :**Flowchart:****Pseudocode:**

Output:**Programming Code:**

```
#include <stdio.h>

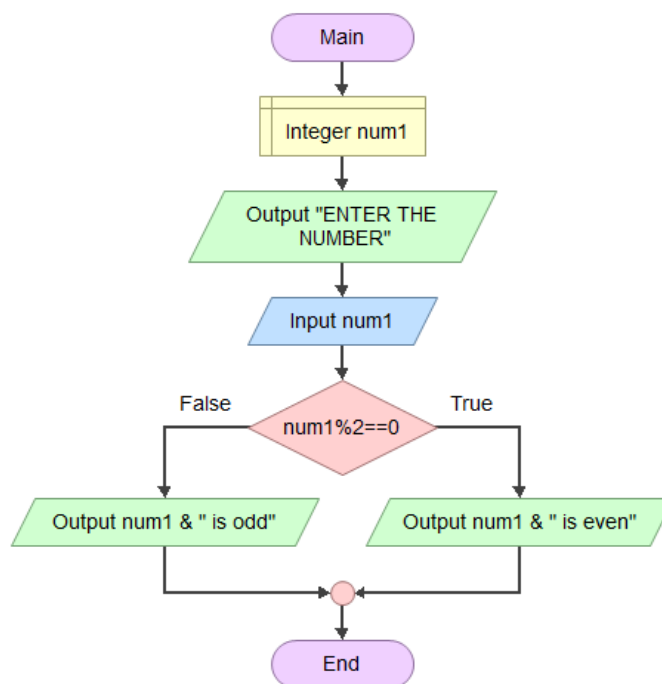
int main(){
    printf("Hello, World!");
    return 0;
}
```

Output:**Learning Outcomes:**

EXPERIMENT 4

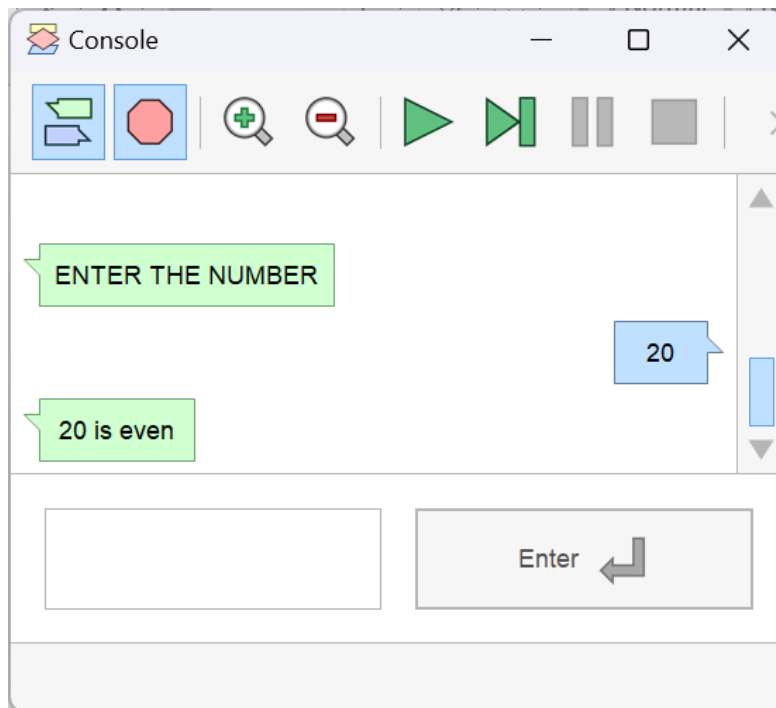
Problem statement:

Write a program and draw a flowchart to check whether a number is even or odd.

Algorithm:**Flowchart:**

Pseudocode:

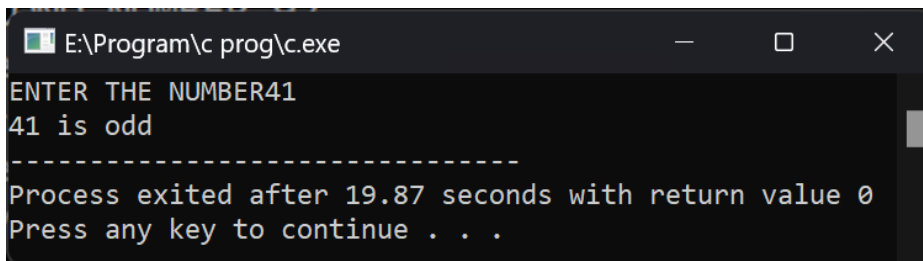
```
0  Function Main
1      Declare Integer num1
2
3      Output "ENTER THE NUMBER"
4      Input num1
5      If num1%2==0
6          Output num1 & " is even"
7      Else
8          Output num1 & " is odd"
9      End
10 End
```

Output:

Programming Code:

```
#include <stdio.h>

int main(){
    int num1;
    printf("ENTER THE NUMBER");
    scanf("%d", &num1);
    if(num1%2==0) {
        printf("%d is even", num1);
    } else {
        printf("%d is odd", num1);
    }
    return 0;
}
```

Output:

```
E:\Program\c prog\c.exe
ENTER THE NUMBER41
41 is odd
-----
Process exited after 19.87 seconds with return value 0
Press any key to continue . . .
```

Learning Outcomes: