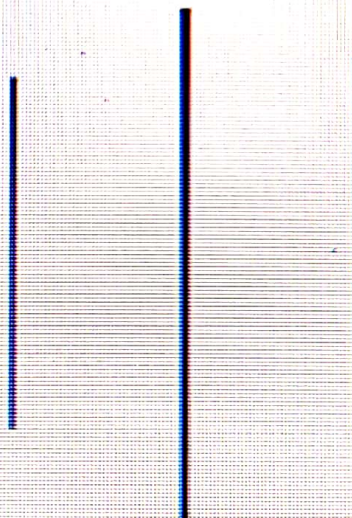


**INSTITUTE OF ENGINEERING
ADVANCED COLLEGE OF ENGINEERING
& MANAGEMENT
KUPONDOLE, LATTIPUR
(AFFILIATED TO TRIBHUVAN UNIVERSITY)**



LAB REPORT

LAB NO.: 4

SUBJECT: C PROGRAMMING

SUBMITTED BY:

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ROLL NO.: 019

DATE: 2077/02/07

SUBMITTED TO:

**DEPARTMENT OF
COMPUTER &
ELECTRONICS**

TITLE : Introduction to looping techniques in C-programming.

OBJECTIVE :

To learn about looping techniques.

THEORY :

Repetitive structure / loop structure.

Repetition means executing the same section of code more than once. In repetitive structure, a sequence of steps which is specified once, may be executed for a specified number of times or until some condition is met.

C provides 3 loop constructs for programming loop generations:

- while
- do - - while
- for.

a) While statement

It specifies that a section of code should be executed while a certain condition holds true.

Syntax:

```
while (test-expression)
{
    body of loop
}
```

Example.

```
#include <stdio.h>
#include <conio.h>
void main()
{
    int n=1, count=0;
    while (n <= 10)
```

```

while (n <= 10)
{
    count ++;
    n ++;
}

```

16) The do - .. while loop statement.

It also specifies that a section of code should be executed while a certain condition holds true.

Syntax:

```

do
{
    body of loop
}
while (test - expression);

```

Example

```

#include <stdio.h>
#include <conio.h>
void main()
{
    int n = 1, count = 0;
    do {
        count ++;
        n ++;
    }
    while (n <= 10);
}

```

17) The for loop statement.

It is used to execute a block of code for a fixed no. of repetition.

Syntax:

```

for (initialization; test - expression; update expression)
{
    body of loop
}

```

Example

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

```
#include <conio.h>
```

```
void main()
```

```
{
```

```
    int num, count;
```

```
    printf("Enter the no. of stars:");
```

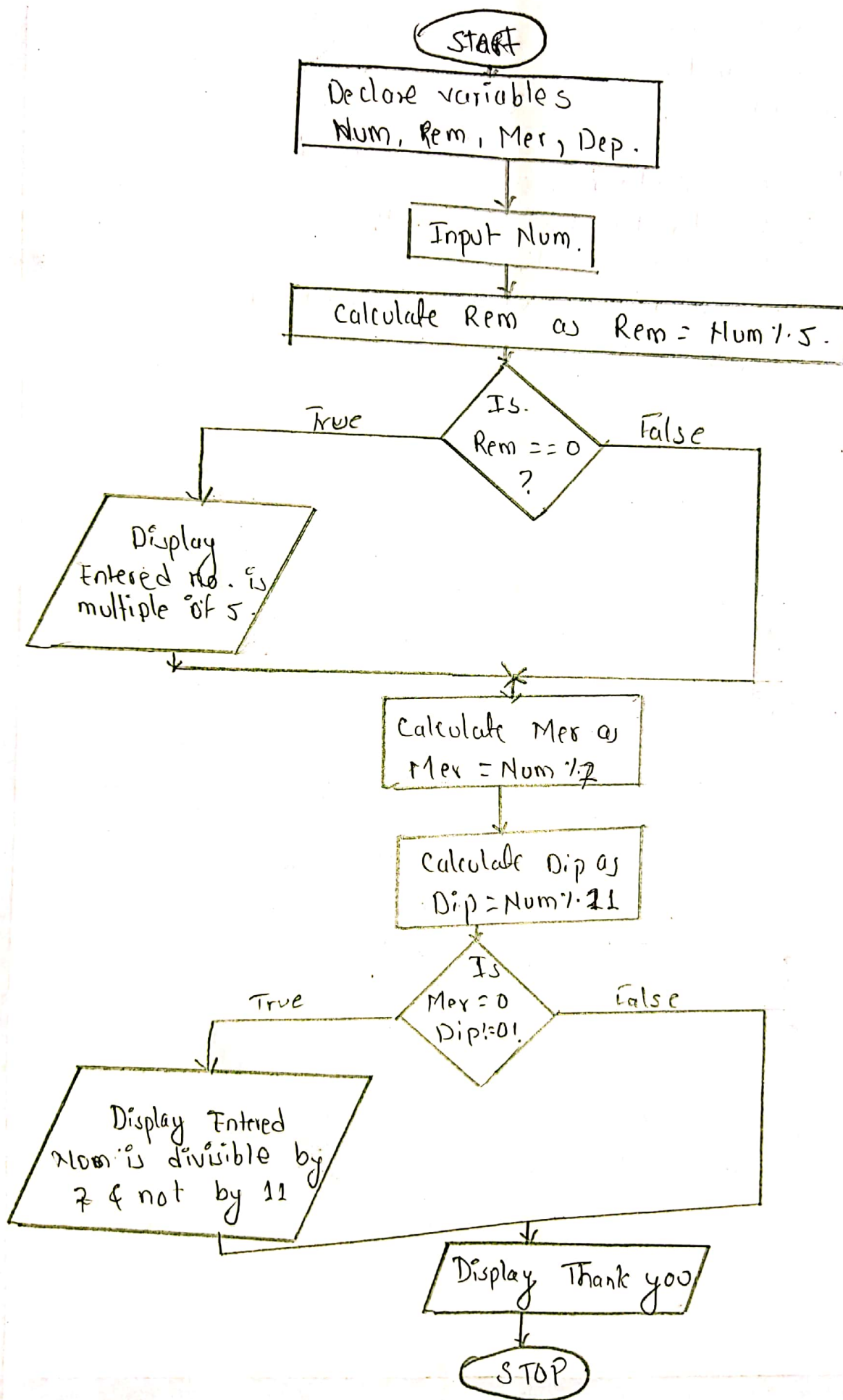
```
    scanf("%d", &num);
```

```
    for(count = 0; count < num; count++)
```

```
    { printf("*");
```

```
    }
```

```
}
```



1) WAP a program that a no. & test the no. wheather it is multiple of 5 or not, dividble by 7 but not by eleven.

Step 1: Start

Step 2: Declare variable Num, Rem, Mer, Dip;

Step 3: Input Num

Step 4: Calculate Rem as $Rem = Num \% 5$

Step 5: If $Rem = 0$, goto step 6 else goto step 7

Step 6: Display the entered number as multiple of 5.

Step 7: calculated Mer as $Mer = Num \% 7$.

Step 8: Calculate Dip as $Dip = Num \% 11$

Step 9: If $Mer = 0$ & $Dip \neq 0$ then go to step 10 else go to step 12.

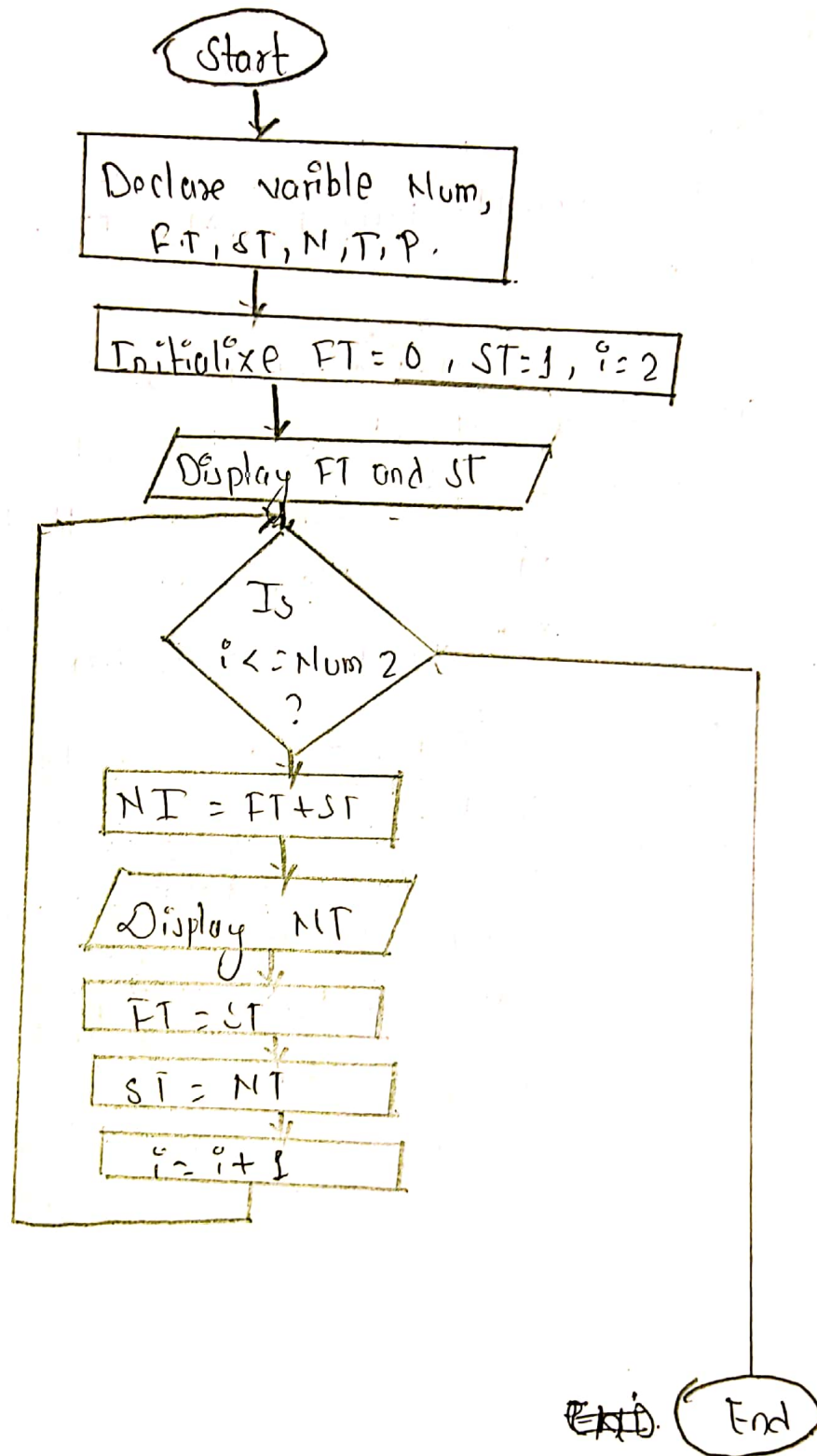
Step 10: Display as the entered no. is dividde by 7 but not dividde by 11.

Step 11: Display thank you & goto step 13

Step 12: Display thank you.

Step 13: End.

Flowchart to generate first n fibance number.



Q) WAP to generate first n Fibonacci number

Step 1 : Start

Step 2 : Declare variable Num, FT, ST, NT, i

Step 3 : Input Num

Step 4 : Initialize $FT=0$, $ST=1$, $i=1$

Step 5 : Display FT & ST

Step 6 : If $i \leq (Num-2)$ go to step 7 else goto step 12

Step 7 : Assign value of NT as $NT = FT + ST$

Step 8 : Display NT

Step 9 : Assign value of FT as $FT = ST$

Step 10 : Assign value of ST as $ST = NT$

Step 11 : Increase the value of i by 1 i.e. $i = i + 1$ & go to step 6

Step 12 : stop.

1) WAP to calculate HCF & LCM of two integers. Provided by user.

Step 1: Start

Step 2: Declare variable $a, b, c, d, \text{rem}, \text{HCF}, \text{LCM}$.

Step 3: Read a & b

Step 4: $c = a, d = b$

Step 5: $\text{rem} = c \bmod d$
if $\text{rem} = 0$
 $\text{HCF} = d$
 goto step 7
else,
 $c = d$
 $d = \text{rem}$
 go to step 5

Step 6: Print HCF

Step 7: $\text{LCM} = (a \times b) / \text{HCF}$

Step 8: Print L.C.M.

Step 9: STOP.