Continuation of last lecture - 6

Write a program that takes two numbers from the user and an operation (such as +, −, /,*) and displays the result.

- Expected output :

```
Enter 1st Number : 5
Enter 2nd Number : 4
Enter an operation (+,-,*,/) : +

Result : 5 + 4 = 9
```

Loop – Repetition structure

1. FOR LOOP
2. WHILE LOOP
3. DO WHILE LOOP

Example

```
int sum ;
sum = 1+2+3+4+5+.....+10 ;
cout << sum ;
```

Find the Sum of the first 100 Integer starting from 1

for Loop

For loop

```
for ( initialization condition ; termination condition ; increment condition )
{
    statement ( s ) ;
}
```

Example

```
int counter ;
for( counter = 0 ; counter < 10 ; counter = counter + 1 )
          cout << counter;
```

Output

0123456789

Table for 2

2 x 1 = 2

2 x 2 = 4

2 x 3 = 6

⋮

⋮

2 x 10 = 20

Output

2 x1 = 2

2 x 2 = 4

2 x 3 = 6

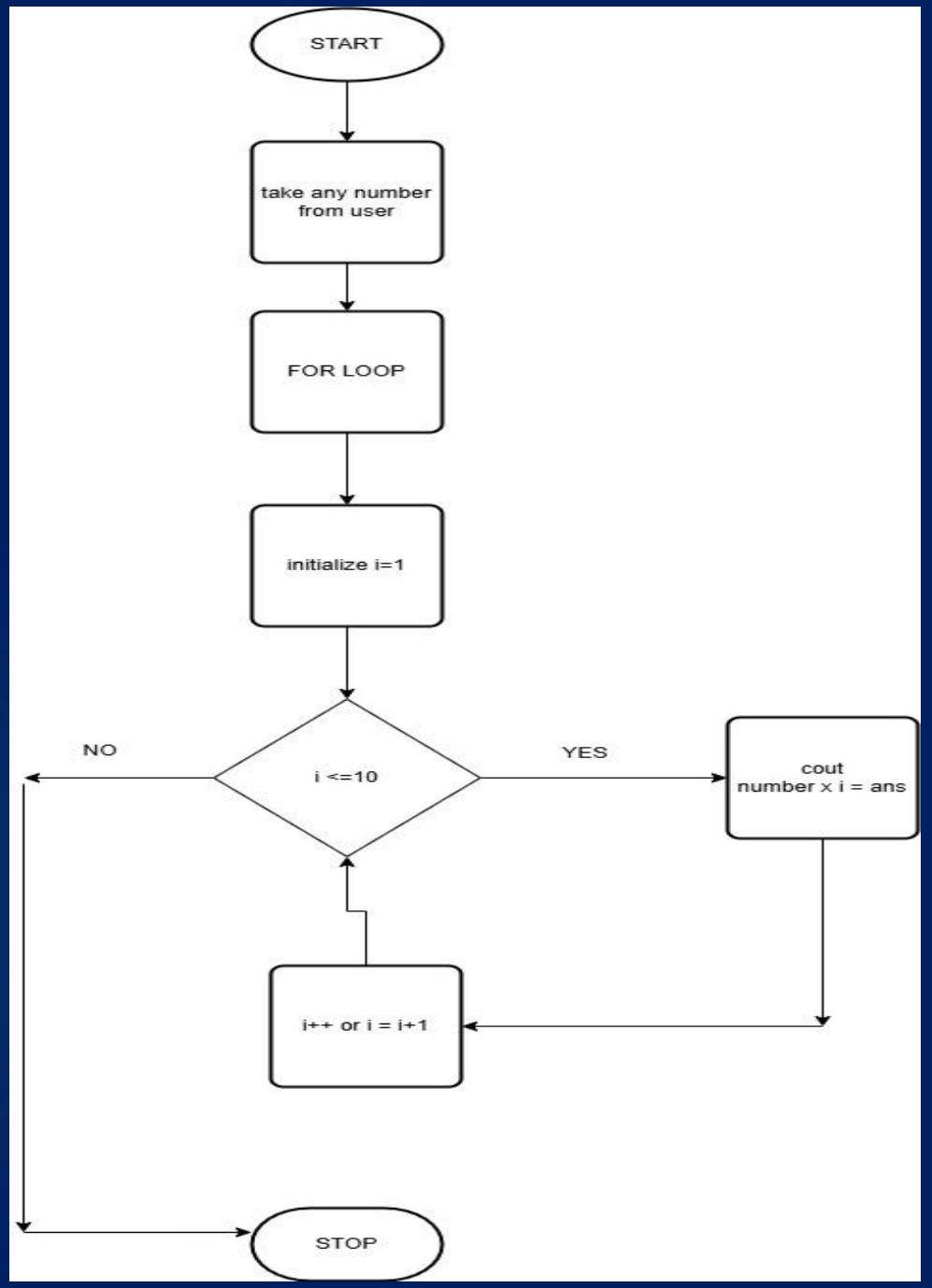
:

:

2 x 10 = 20

- Always think re-use
- Don’t use explicit constants

- Create a flowchart of the program which calculating the Table of 2


START
take any number from user
FOR LOOP
initialize i=1
i <=10
NO
YES
cout number x i = ans
i++ or i = i+1
STOP

Code

```
int num;

cout<<"Enter number of table you desire:"<<endl;
cin >> num;

for(int i=1;i<=10;i++)
{
    cout << num<< " X "<<i <<" = " << num*i<<endl;
}
```

while

```
while ( Logical Expression )
{
 statements;                    :
}
```

Find the Sum of the first 1000 Integer starting from 1

Example

```
int sum , number ;
sum = 0 ;
number = 1 ;
while ( number <= 1000 )
{
      sum  =  sum  +  number ;
      number  =  number + 1 ;
}
cout << " The sum of the first 1000 integer starting from 1 is " << sum
    ;
```

Property of While Statement

It executes zero or more times

do-while

Do while loop execute on or more times

Syntax of do-while loop

```
do
  {
   statements ;

  }
while ( condition ) ;
```

Create a simple character guessing game where the player has to guess a secret character within a limited number of attempts (i.e. 5).

Example-Guessing game

```
char c ;
int tryNum = 1 ;
do
{
    cout << "Please enter your guess by pressing a character key from a to z “ ;
    cin >> c ;
    if ( c == 'z‘ )
   {
     cout << "Congratulations! you guessed the right answer“ ;
     tryNum = 6 ;
    }
    else
     tryNum  = tryNum + 1 ;
} while ( tryNum <= 5 ) ;
```

LAB-3