CS: FUNDAMENTALS OF PROGRAMMING(LAB)

HOME ASSIGNMENT #05

- **SUBMITTED BY:-**

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- **CLASS:-**

ME-15 (SECTION-C)

- **DUE DATE:-**

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TASK # 01

1. **Write a program in C++ that prints the numbers from 1 to 150 except the multiples of 10.**

Make use of the continue statement.

```
#include <iostream>
using namespace std;
int main() {
int x;
for (x=0;x<150;x++){  // 150 iterations with
                      increment of +1
if (x%10==0){
continue;}
else {    //igmores multiples of 10
cout<<x<<",";}
}
return 0; }
```

Output

Clear

```
/tmp/fA4HSou7kv.o
1,2,3,4,5,6,7,8,9,11,12,13,14,15,16,17,18,19,21,22,23,24,25,26,27,28,29,31
,32,33,34,35,36,37,38,39,41,42,43,44,45,46,47,48,49,51,52,53,54,55,56,57
,58,59,61,62,63,64,65,66,67,68,69,71,72,73,74,75,76,77,78,79,81,82,83,84
,85,86,87,88,89,91,92,93,94,95,96,97,98,99,101,102,103,104,105,106,107
,108,109,111,112,113,114,115,116,117,118,119,121,122,123,124,125,126,127
,128,129,131,132,133,134,135,136,137,138,139,141,142,143,144,145,146,147
,148,149,
```

TASK # 02

1. **Write a C++ program to find the sum of digits of a number. The sum of digits means adding all the digits of any number, for example, we take any number like 358. Its sum of all digits is 3+5+8=16.**

```
#include <iostream>
using namespace std;
int main() {
int num,digit,digit1,digit2,digit3,sum;
for (num=0;num<1;num++){ // for one iteration
cout<<"enter your number"<<endl;
cin>>num; // taking input from users
digit = num%100 ; // to find 1st digit
digit1= (num-digit)/100;
digit3= digit%10  ; // to find 3nd digit
digit2 =(digit-digit3)/10; // for 2nd digit
sum=digit1+digit2+digit3;
cout<<"the sum of digits is = "<<sum;}
return 0;}
```

Output

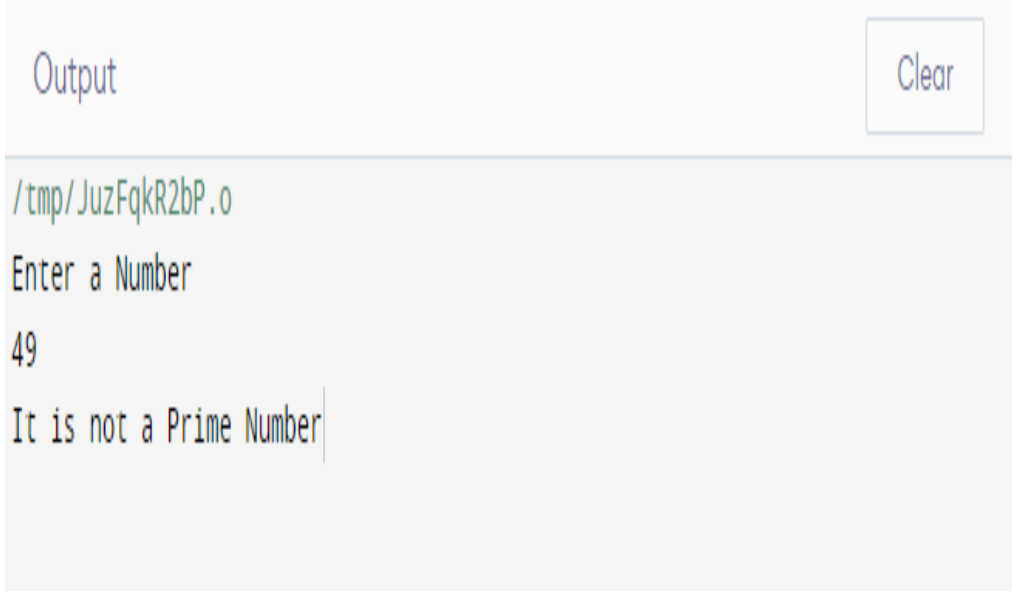
Clear

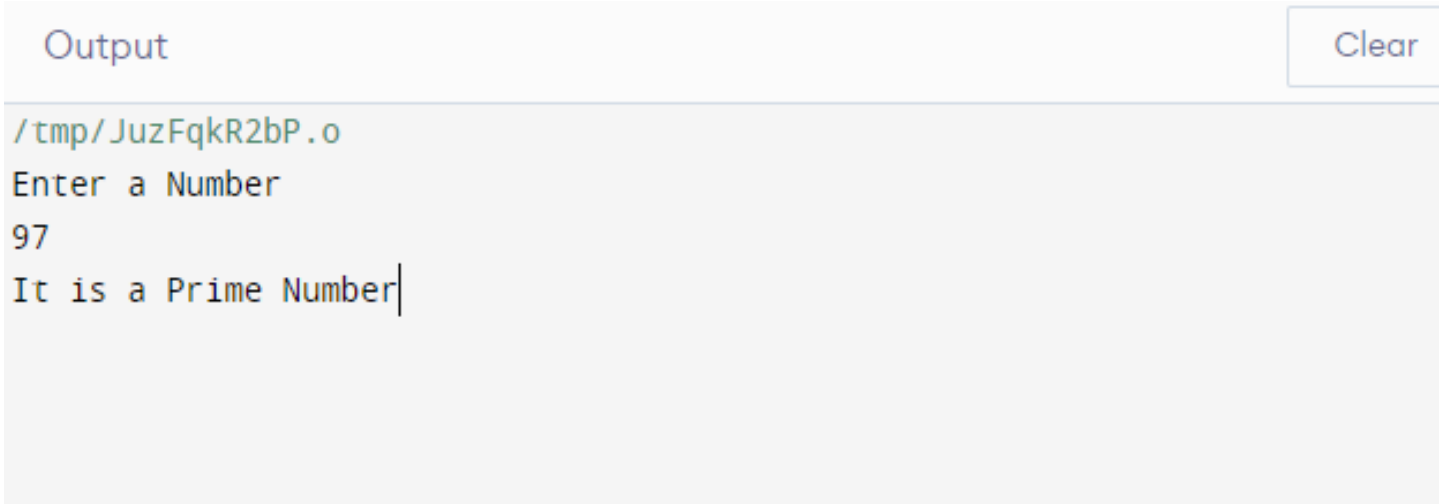
```
/tmp/DxBH4ps1Mm.o
enter your number
689
the sum of digits is = 23
```

TASK # 03

- **Write a program in C++ to check whether a number is prime or not.**

```
#include<iostream>
using namespace std;
int main(){
int x, y, z=0;
 cout<<"Enter a Number "<<endl; cin>>x;  //taking input from users
if (x!=1&&x!=0){ //1 and 0 are not prime
 for(y=2; y<x; y++){
   if(x%y==0){ // prime numbers are only divisible by 1 or themselves
  z=1;   //will be later used as a condition
  break;}}  // to stop unnecessary iterations
  if(z==1){
        cout<<"It is not a Prime Number";}
  else
        {cout<<"It is a Prime Number";}}
else {cout<<"it is not a prime number"; }
 return 0;}
```





METHODOLOGY

- All the tasks performed before hand use for loops as well as if-else statements execute the required commands
- Loops are repetitive structures used to carry out a single command multiple times. Basic types of loops include while loop, do while loop, and for loop.
- Among all the types of loops, for loop is the easiest and the most effective as it allows the user to initialize the variable, determine the starting and ending points as well as mention the increments all in one step. That is why for loop has been predominantly used in the tasks above.