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2nd Semester
C++ Lab. 1st year student.
Computer Programming (comp-104)
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C++ Lab#6

Objective

- **Nested Loop**

Example: The following code is for testing an input (int) x whether it is prime number or not:

```
int x,i;
 bool FirstSupposed = true;
 cout<<"enter x=";
cin>>x;
for(i=2;i<=x/2;i++){
    if(x%i==0){
        FirstSupposed=false;
        break;
    }
}
if(FirstSupposed==true)cout<<"it is prime number"<<endl;
else cout<<"it is NOT prime number"<<endl;
```

The variable "FirstSupposed" is just as an indication for the primality test, where this variable still true (unchanged) whenever x is prime number, on the contrary this variable is going to change to be false whenever x is not prime number.

i.e. x is divisible by i

To write a code that calculate the sum of all prime numbers less than 100.

Note that the testable number x in the above code is changed with j (the counter of outer loop) in the following code.

```
int i, j, sum=0;
for(j=1; j<100; j++){
    bool FirstSupposed = true;
    cout<<"enter x=";
    cin>>x; // using j (counter of outer loop) instead of x
    for(i=2;i<=x/2;i++){
        if(j%i==0){  // using j instead of x
            FirstSupposed=false;
            break;
        }
    }
    if(FirstSupposed==true)sum+=j;   //cout<<"it is prime number"<<endl;
}
cout<<"sum of prime numbers less than 100="<<sum<<endl;
```

It is the above code

Q1) Write a C++ program to count the number of primes between two given numbers x and y. For Example, the number of primes between 4 and 18 is 5

Your code must keep the run using Do-While-loop.

Q2) Write A C++ program to print the multiplication table. Your code must keep the run using Do-While-loop.

Q3) Trace the following C++ code and conclude the output:

```
int i, j,k;
for(i=1;i<3;i++)
    for(j=i;j<4;j++)
        for(k=2;k>=1;k--)
            cout<<i<<"*"<<j<<"*"<<k<<"="<<i*j*k<<endl;
```