

GE 211

C++ Programming

Lab #4

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Objectives

- Learn about for loop.

Exercise 1:

- Write a program that finds the summation of the even numbers 0 to n (where n is an even number greater than 0).
- Modify the program that will enable the user to find the summation from k to n (where $k < n$ both are even numbers).

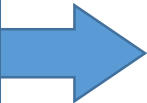
```
// C++ Lab 4 Exercise 1
// Program by: Place your name here
#include <iostream>
using namespace std;
int main()
{
int n;
cout << "Enter number to calculate the sum of the even numbers from 0 to entered number: " << endl;
cin >> n;
int sum = 0;
    for (int i = 0; i <= n; i=i+2) //Note that the variable i is a local
        sum = ?????????; //variable of the body of the for loop!
    cout << "The sum of the even numbers from 0 to " << n << " is " << sum << endl;
    return 0;
}
```

```
// C++ Lab 4 Exercise 1
// Program by: Place your name here
#include <iostream>
using namespace std;
int main()
{
int n;
cout << "Enter number to calculate the sum of the even numbers from 0 to entered number: " << endl;
cin >> n;
int sum = 0;
    for (int i = 0; i <= n; i=i+2) //Note that the variable i is a local
sum=sum+i; //variable of the body of the for loop!
    cout << "The sum of the even numbers from 0 to " << n << " is "
<< sum << endl;
    return 0;
}
```

i=0 , n=5 ,sum=0
for (int i = 0; i <= n; i=i+2)

0<=5 yes
sum=0+0
i=0+2

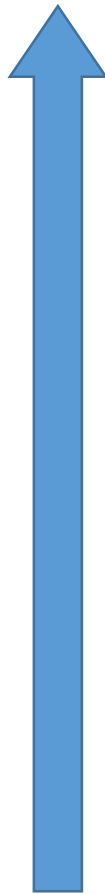
i=2 , sum=0
2<=5 yes
sum=0+2
i=2+2



i=4 , sum=2
4<=5 yes
sum=2+4
i=4+2

i=6 , sum=6
6<=5 no
Break for loop

i=6 , sum=6



Exercise 2:

- Write a program that prints out all the numbers between 3 and 20 that divides by 2 and 3.

Exercise 2:

```
// C++ Lab 4 Exercise 2
// Program by: Place your name here

#include <iostream>
using namespace std;
int main()
{
    for (int i = 3; i <= 20; i++) //Note that the variable i is a local
    {
        if ((i%2) ????????) cout <<" the number "<< i << " can divide by 2 \n";
        if ((i%3) ????????) cout <<" the number "<< i << " can divide by 3\n ";
    }
    return 0;
}
```

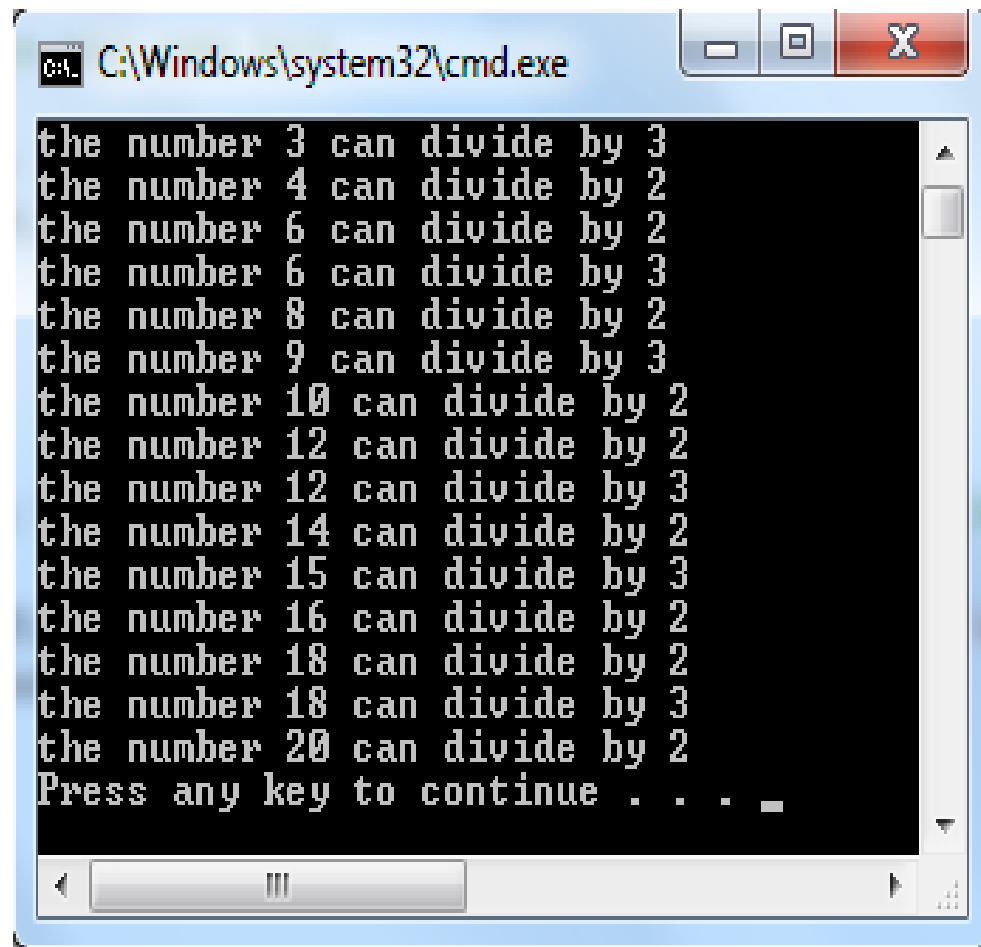

Exercise 2:

```
// C++ Lab 4 Exercise 2
// Program by: Place your name here

#include <iostream>
using namespace std;
int main()
{
    for (int i = 3; i <= 20; i++) //Note that the variable i is a local
    {
        if ((i%2) ==0) cout <<" the number "<< i << " can divide by 2 \n";
        if ((i%3) ==0) cout <<" the number "<< i << " can divide by 3\n ";
    }
    return 0;
}
```

Exercise 2:

The output



```
C:\Windows\system32\cmd.exe
the number 3 can divide by 3
the number 4 can divide by 2
the number 6 can divide by 2
the number 6 can divide by 3
the number 8 can divide by 2
the number 9 can divide by 3
the number 10 can divide by 2
the number 12 can divide by 2
the number 12 can divide by 3
the number 14 can divide by 2
the number 15 can divide by 3
the number 16 can divide by 2
the number 18 can divide by 2
the number 18 can divide by 3
the number 20 can divide by 2
Press any key to continue . . .
```

PostLab 3

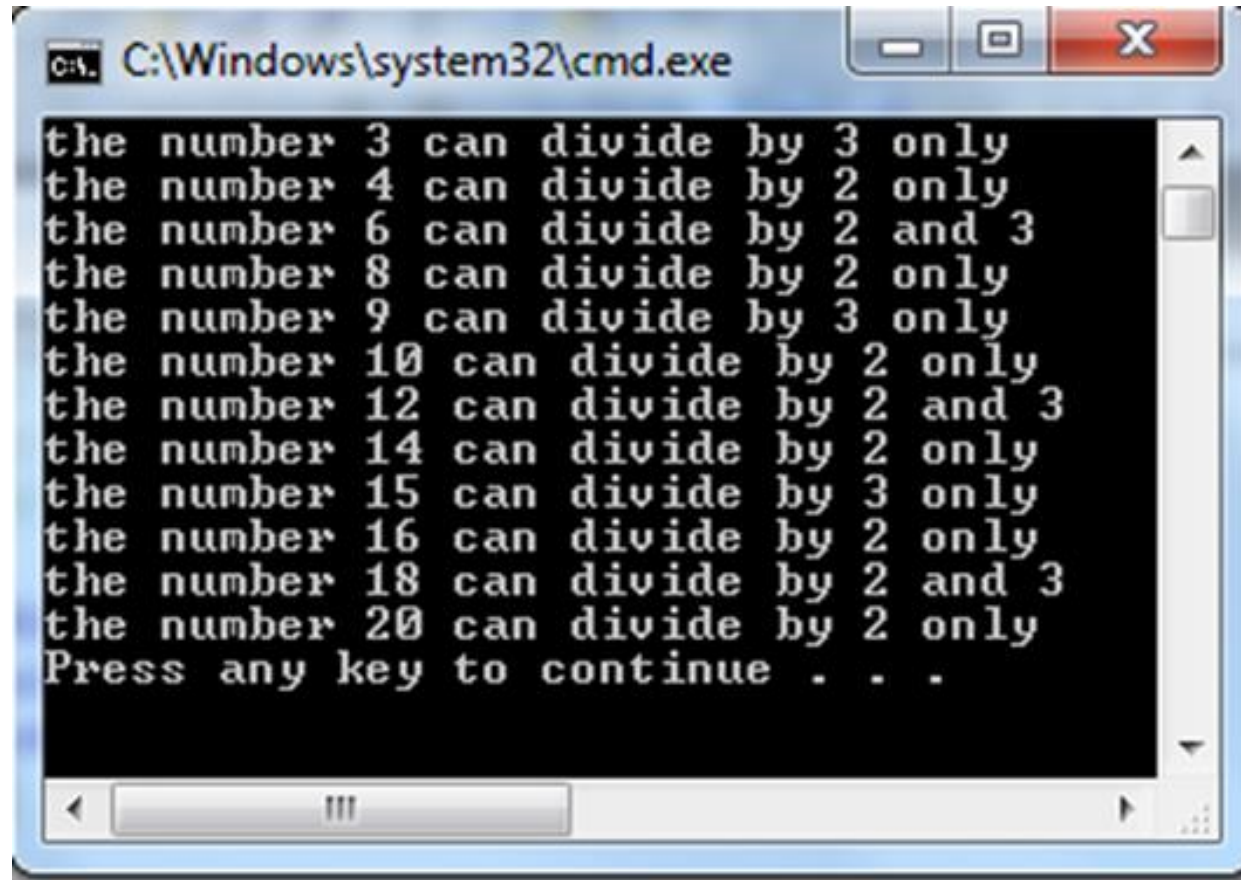
Q1.

- Modify Exercise 1 so that it calculates the following:
- `sume` : is the summation of all even numbers between `k` and `n`
- `sumo` : is the summation of all odd numbers between `k` and `n`
- `sum` : is the summation of all numbers between `k` and `n`

PostLab 3

Q2.

- Modify Exercise 2 so the output will look like:



```
C:\Windows\system32\cmd.exe
the number 3 can divide by 3 only
the number 4 can divide by 2 only
the number 6 can divide by 2 and 3
the number 8 can divide by 2 only
the number 9 can divide by 3 only
the number 10 can divide by 2 only
the number 12 can divide by 2 and 3
the number 14 can divide by 2 only
the number 15 can divide by 3 only
the number 16 can divide by 2 only
the number 18 can divide by 2 and 3
the number 20 can divide by 2 only
Press any key to continue . . .
```