Computer Systems & Programming

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Home Tasks of Lab Manual 5

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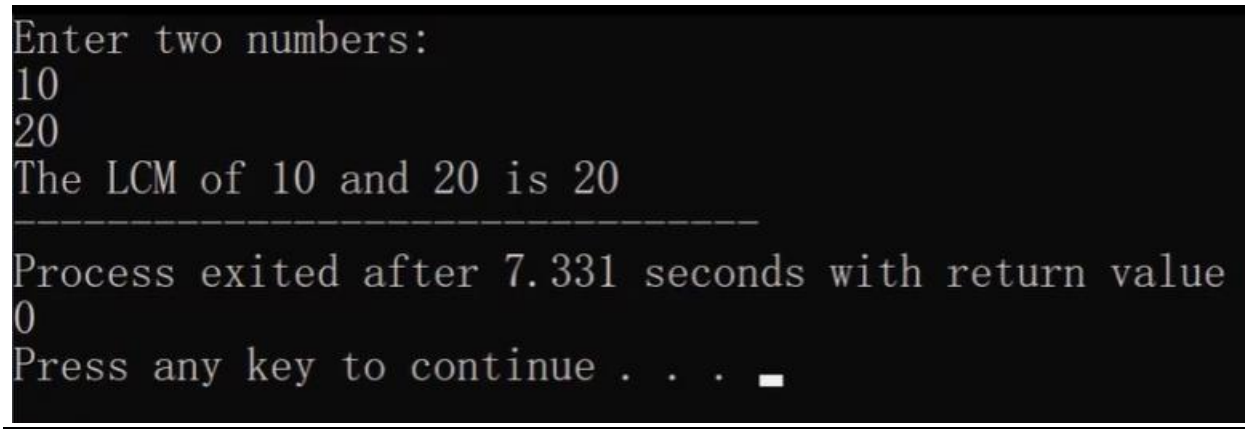
Lab Task# 1:

Write a program in C++ to find LCM of any two numbers using HCF.

Code:

```
#include <iostream>
using namespace std;
int main() {
int a,b,lcm;
cout<<"Enter 2 numbers: "<<endl;
cin>>a>>b;
if(a>b)
lcm=a;
else
lcm=b;
while(1){
if(lcm%==a && lcm%b==0){
cout<<"The LCM of "<<a<<" and "<<b<<" is "<<lcm;
break;
}
lcm++
}
return 0;
}
```

Result:



Lab Task# 2:

Write a program in C++ to find out the sum of an Arithmetic progression series.

Code:

```
#include <iostream>

using namespace std;


int main()

{

   int n1, df, n2, i, ln;

   int s1 = 0;

   cout << "\n\n Find out the sum of A.P. series:\n";

   cout << "----------------------------------------\n";

   cout << " Input  the starting number of the A.P. series: ";

   cin >> n1;

   cout << " Input the number of items for  the A.P. series: ";

   cin >> n2;

   cout << " Input  the common difference of A.P. series: ";

   cin >> df;

   s1 = (n2 * (2 * n1 + (n2 - 1) * df)) / 2;

   ln = n1 + (n2 - 1) * df;

   cout << " The Sum of the  A.P. series are : " << endl;

   for (i = n1; i <= ln; i = i + df)

   {

      if (i != ln)
```

```
        cout << i << " + ";
      else
        cout << i << " = " << s1 << endl;
   }
}
```

Result:

```
 Find out the sum of A.P. series:
----------------------------------------
 Input  the starting number of the A.P. series: 1
 Input the number of items for  the A.P. series: 8
 Input  the common difference of A.P. series: 5
 The Sum of the  A.P. series are :
1 + 6 + 11 + 16 + 21 + 26 + 31 + 36 = 148
```

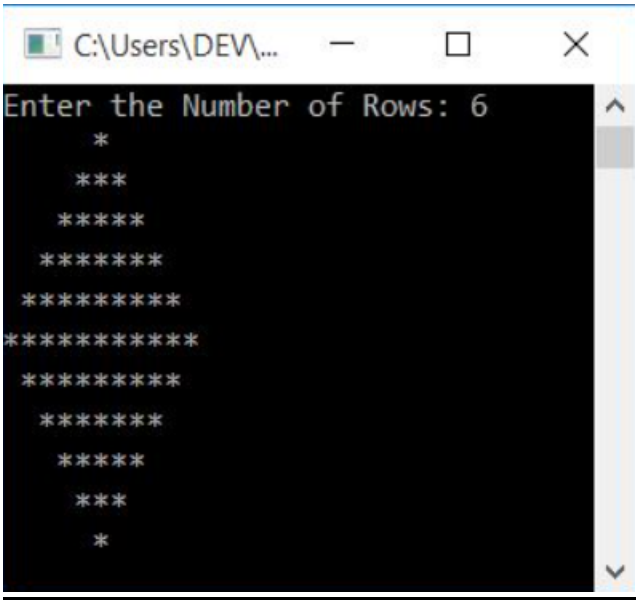
Lab Task# 3: Write a program in C++ to create a diamond.

Code:

```
#include<iostream>
using namespace std;
int main()
{
   int i, j, rowNum, space;
   cout<<"Enter the Number of Rows: ";
   cin>>rowNum;
   space = rowNum-1;
   for(i=1; i<=rowNum; i++)
   {
      for(j=1; j<=space; j++)
         cout<<" ";
```

```
        space--;
        for(j=1; j<=(2*i-1); j++)
            cout<<"*";
        cout<<endl;
    }
    space = 1;
    for(i=1; i<=(rowNum-1); i++)
    {
        for(j=1; j<=space; j++)
            cout<<" ";
        space++;
        for(j=1; j<=(2*(rowNum-i)-1); j++)
            cout<<"*";
        cout<<endl;
    }
    cout<<endl;
    return 0;
}
```

Result:



Lab Task# 4:
Write a program in C++ to convert a decimal number to binary number.

Code:

```
#include <iostream>
using namespace std;

int main() {
  int decimal, binary = 0, remainder, product = 1;
  // Since the data type is int, it can only accept values up to 1023 before switching to long.
  cin >> decimal;
  while (decimal != 0) {
    remainder = decimal % 2;
    binary = binary + (remainder * product);
    decimal = decimal / 2;
    product *= 10;
  }
  cout << "The number in the binary form is: " << binary ;
  return 0;
}
```

Answer ;