

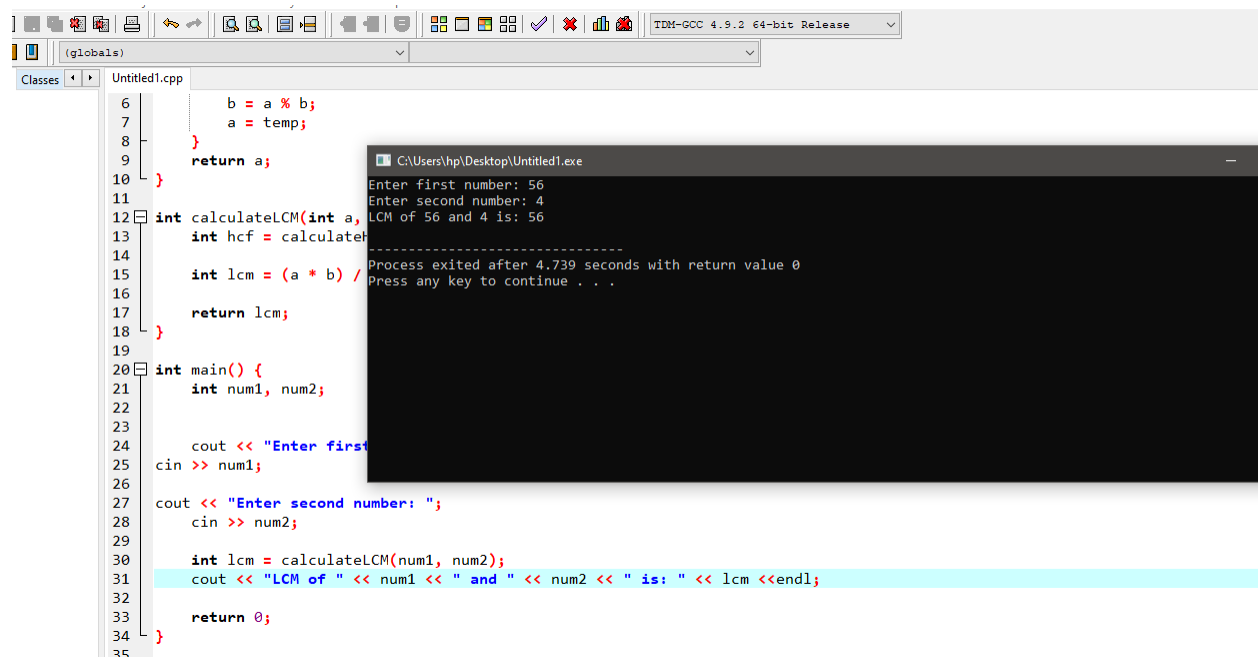
Lab 5 Home task

Talha rafique

471701

Question:1

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



```
6 |         b = a % b;  
7 |         a = temp;  
8 |     }  
9 |     return a;  
10 | }  
11 |  
12 | int calculateLCM(int a,  
13 |     int hcf = calculateHCF(a, b))  
14 | {  
15 |     int lcm = (a * b) / hcf;  
16 |     return lcm;  
17 | }  
18 |  
19 |  
20 | int main() {  
21 |     int num1, num2;  
22 |  
23 |     cout << "Enter first number: ";  
24 |     cin >> num1;  
25 |  
26 |     cout << "Enter second number: ";  
27 |     cin >> num2;  
28 |  
29 |     int lcm = calculateLCM(num1, num2);  
30 |     cout << "LCM of " << num1 << " and " << num2 << " is: " << lcm << endl;  
31 |  
32 |     return 0;  
33 | }  
34 |  
35 |
```

Output:

```
Enter first number: 56  
Enter second number: 4  
LCM of 56 and 4 is: 56  
Process exited after 4.739 seconds with return value 0  
Press any key to continue . . .
```

Question:2

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

The screenshot shows a C++ IDE with a menu bar (Edit, Search, View, Project, Execute, Tools, AStyle, Window, Help) and a toolbar. The main window displays a C++ program in a file named 'Untitled1.cpp'. The code calculates the sum of an arithmetic progression series based on user input for the number of terms (n), the first term (a), and the common difference (d). The formula used is $sum = (n * (2 * a + (n - 1) * d)) / 2$. The program prompts the user to enter these values and then outputs the sum. The output window shows the execution results: 'Enter the number of terms (n): 5', 'Enter the first term (a): 2', 'Enter the common difference (d): 3', and 'Sum of the arithmetic progression series: 40'. The program exits after 9.397 seconds with a return value of 0.

```
1 #include <iostream>
2 using namespace std;
3 int main() {
4     int n;
5     int a;
6     int d;
7     cout << "Enter the number of terms (n): ";
8     cin >> n;
9
10    cout << "Enter the first term (a): ";
11
12    cin >> a;
13
14    cout << "Enter the common difference (d): ";
15    cin >> d;
16
17    int sum = (n * (2 * a + (n - 1) * d)) / 2;
18
19
20    cout << "Sum of the arithmetic progression series: " << sum << endl;
21    return 0;
22 }
23
```

Output window (C:\Users\hp\Desktop\Untitled1.exe):

```
Enter the number of terms (n): 5
Enter the first term (a): 2
Enter the common difference (d): 3
Sum of the arithmetic progression series: 40
-----
Process exited after 9.397 seconds with return value 0
Press any key to continue . . .
```

Question:3

Write a program in C++ to create a diamond.

