

# **Fundamentals of Programming**

## **Lab Report 04**

**1<sup>st</sup> SEMESTER**



**Session: ME-15**

**Section: C**

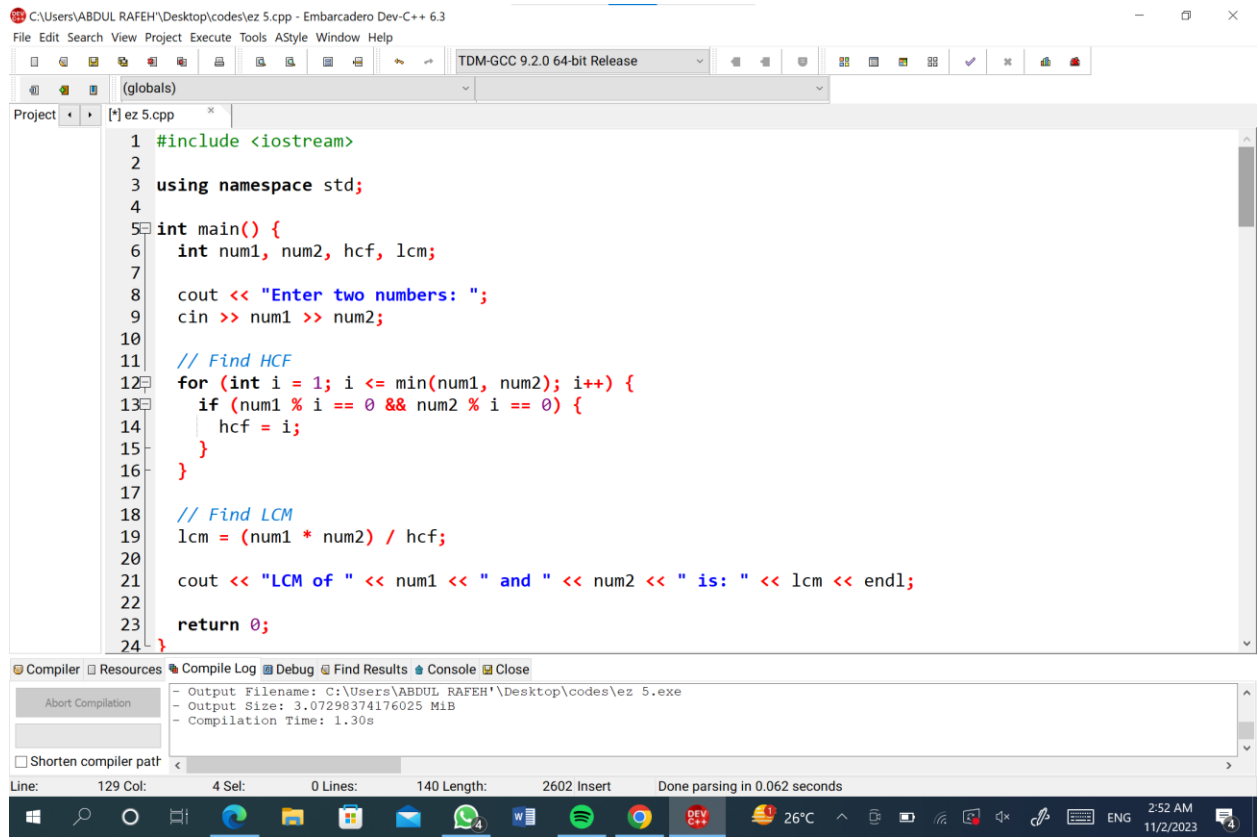
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# LAB MANUAL-5

## 1. PROGRAM:



The screenshot displays the Embarcadero Dev-C++ IDE interface. The main window shows a C++ source file named 'ez 5.cpp'. The code is as follows:

```
1 #include <iostream>
2
3 using namespace std;
4
5 int main() {
6     int num1, num2, hcf, lcm;
7
8     cout << "Enter two numbers: ";
9     cin >> num1 >> num2;
10
11     // Find HCF
12     for (int i = 1; i <= min(num1, num2); i++) {
13         if (num1 % i == 0 && num2 % i == 0) {
14             hcf = i;
15         }
16     }
17
18     // Find LCM
19     lcm = (num1 * num2) / hcf;
20
21     cout << "LCM of " << num1 << " and " << num2 << " is: " << lcm << endl;
22
23     return 0;
24 }
```

Below the code editor, the 'Compiler' tab is active, showing the following output:

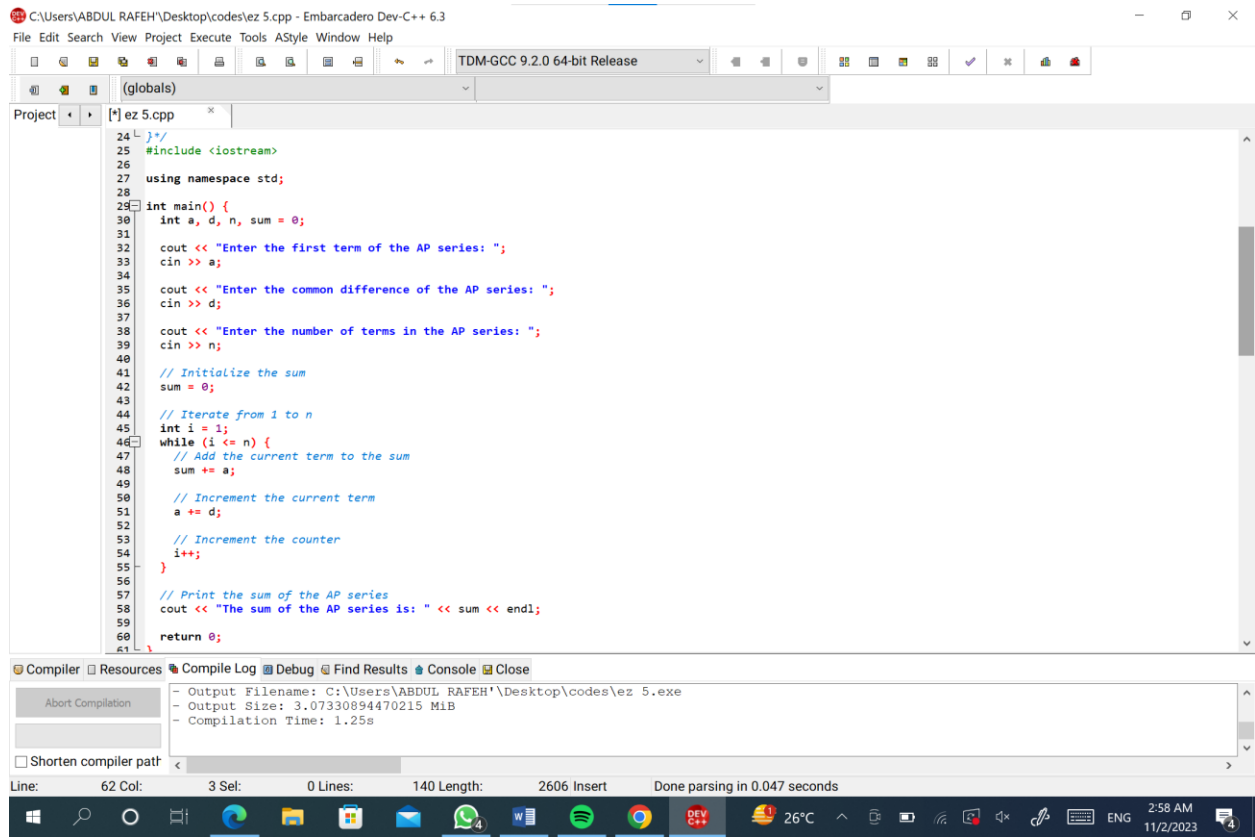
```
- Output Filename: C:\Users\ABDUL RAFAH\Desktop\codes\ez 5.exe
- Output Size: 3.07298374176025 MiB
- Compilation Time: 1.30s
```

The status bar at the bottom indicates the current line and column (Line: 129, Col: 4), selection (4 Sel), and other statistics (0 Lines, 140 Length, 2602 Insert). It also shows the parsing time (Done parsing in 0.062 seconds) and the system clock (2:52 AM, 11/2/2023).

```
C:\Users\ABDUL RAFEH\Desktop\codes\ez 5.exe
Enter two numbers: 4
8
LCM of 4 and 8 is: 8

-----
Process exited after 3.823 seconds with return value 0
Press any key to continue . . .
```

## 2. PROGRAM:



```
C:\Users\ABDUL RAFEH\Desktop\codes\ez 5.exe
Enter the first term of the AP series: 4
Enter the common difference of the AP series: 5
Enter the number of terms in the AP series: 6
The sum of the AP series is: 99

-----
Process exited after 4.51 seconds with return value 0
Press any key to continue . . .
```

### 3. PROGRAM:

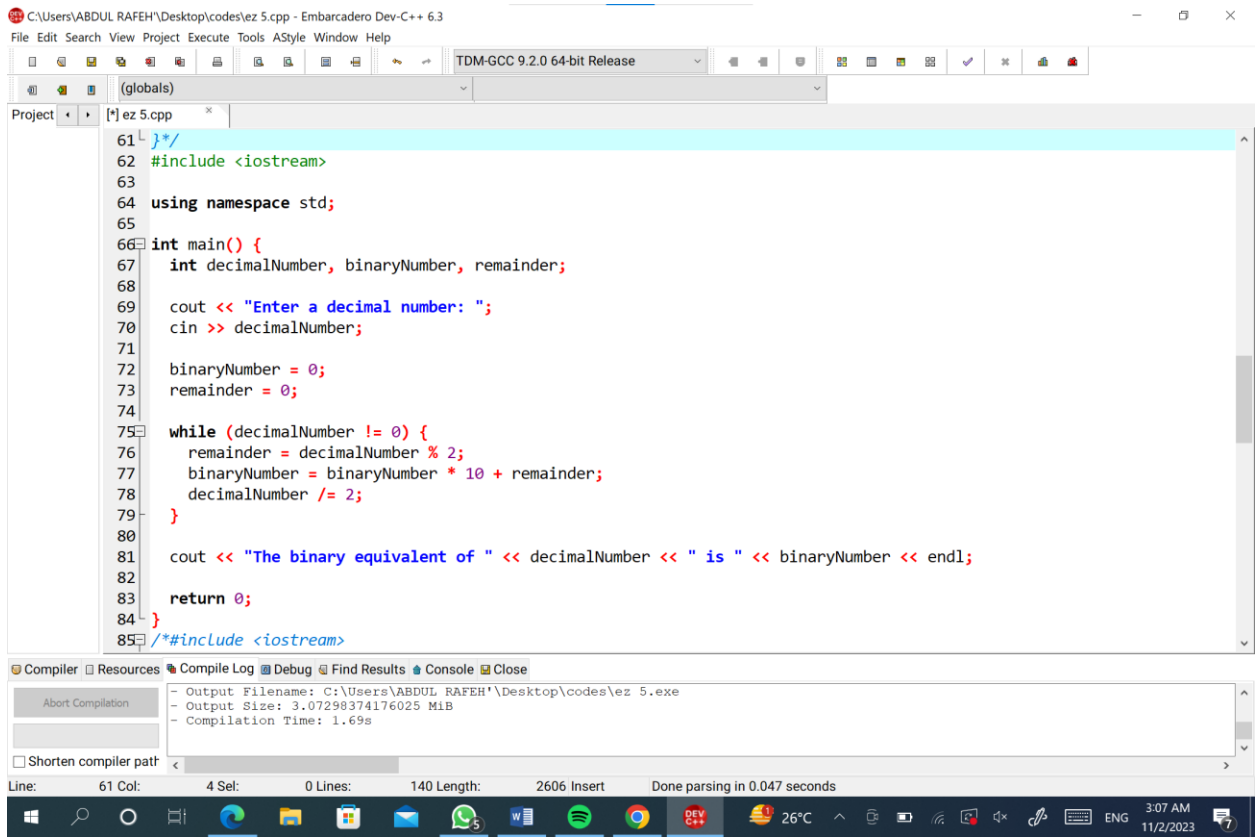
The screenshot shows a C++ IDE with the following components:

- Top Bar:** File Edit Search View Project Execute Tools ASstyle Window Help
- Toolbar:** Icons for file operations, compilation, and execution.
- Global:** TDM-GCC 9.2.0 64-bit Release
- Project:** ez 5.cpp
- Code Editor:** Contains the following C++ code:

```
85 #include <iostream>
86
87 int main() {
88     int n, i, j, space = 1;
89
90     // Get the number of rows for the diamond
91     std::cout << "Enter the number of rows for the diamond: ";
92     std::cin >> n;
93
94     // Calculate the number of spaces for the top half
95     space = n - 1;
96
97     // Print the top half of the diamond
98     for (i = 1; i <= n; i++) {
99         for (j = 1; j <= space; j++) {
100             std::cout << " ";
101         }
102         space--;
103
104         for (j = 1; j <= 2 * i - 1; j++) {
105             std::cout << "*";
106         }
107
108         std::cout << std::endl;
109     }
110
111     // Calculate the number of spaces for the bottom half
112     space = 1;
113
114     // Print the bottom half of the diamond
115     for (i = 1; i <= n - 1; i++) {
116         for (j = 1; j <= space; j++) {
117             std::cout << " ";
118         }
119         space++;
120
121         for (j = 1; j <= 2 * (n - i) - 1; j++) {
122             std::cout << "*";
123         }
124
125         std::cout << std::endl;
126     }
127
128     return 0;
129 }
```
- Bottom Bar:** Compiler Resources Compile Log Debug Find Results Console
- Status Bar:** Line: 84 Col: 4 Sel: 0 Lines: 140 Length: 2604 Insert Done parsing in 0.703 seconds
- Taskbar:** Windows taskbar with various application icons and system clock showing 3:04 AM on 11/2/2023.

[illegible]

## 4. PROGRAM :



The screenshot shows the Embarcadero Dev-C++ 6.3 IDE. The main window displays a C++ source file named 'ez 5.cpp'. The code implements a function to convert a decimal number to its binary equivalent. The code is as follows:

```
61 */
62 #include <iostream>
63
64 using namespace std;
65
66 int main() {
67     int decimalNumber, binaryNumber, remainder;
68
69     cout << "Enter a decimal number: ";
70     cin >> decimalNumber;
71
72     binaryNumber = 0;
73     remainder = 0;
74
75     while (decimalNumber != 0) {
76         remainder = decimalNumber % 2;
77         binaryNumber = binaryNumber * 10 + remainder;
78         decimalNumber /= 2;
79     }
80
81     cout << "The binary equivalent of " << decimalNumber << " is " << binaryNumber << endl;
82
83     return 0;
84 }
85 */#include <iostream>
```

Below the code editor, the 'Compiler' tab is active, showing the compilation output:

```
- Output Filename: C:\Users\ABDUL RAFAH\Desktop\codes\ez 5.exe
- Output Size: 3.07298374176025 MiB
- Compilation Time: 1.69s
```

The status bar at the bottom indicates the current line and column (Line: 61, Col: 4), selection (4 Sel: 0 Lines: 140 Length: 2606 Insert), and parsing time (Done parsing in 0.047 seconds). The system tray shows the date and time as 3:07 AM on 11/2/2023.

C:\Users\ABDUL RAFEH\Desktop\codes\ez 5.exe

Enter a decimal number: 100

The binary equivalent of 0 is 10011

-----

Process exited after 1.484 seconds with return value 0

Press any key to continue . . .

