**Name: ­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Advanced Programming in C++**

**Lab Exercise 5.19.2023**

1. Write a program in C++ to compute the sum of the digits of an integer using function.  
   Sample Output:  
   Input any number: 255

The sum of the digits of the number 255 is: 12

1. Write a program in C++ to enter any number and print all factors of the number.    
   Sample Output:  
   Input a number: 63  
   The factors are: 1 3 7 9 21 63
2. Write a program in C++ to find the frequency of each digit in a given integer.    
   Sample Output:  
   Input any number: 122345  
   The frequency of 0 = 0  
   The frequency of 1 = 1  
   The frequency of 2 = 2  
   The frequency of 3 = 1  
   The frequency of 4 = 1  
   The frequency of 5 = 1  
   The frequency of 6 = 0  
   The frequency of 7 = 0  
   The frequency of 8 = 0  
   The frequency of 9 = 0
3. Write a program in C++ to convert hexadecimal number to binary number.  Use lower case for hex digits.  
   Sample Output:  
   Input any 32-bit Hexadecimal Number: 5f  
   The equivalent binary number is: 01011111

|  |  |
| --- | --- |
| Hex | Binary |
| 0 | 0000 |
| 1 | 0001 |
| 2 | 0010 |
| 3 | 0011 |
| 4 | 0100 |
| 5 | 0101 |
| 6 | 0110 |
| 7 | 0111 |
| 8 | 1000 |
| 9 | 1001 |
| a | 1010 |
| b | 1011 |
| c | 1100 |
| d | 1101 |
| e | 1110 |
| f | 1111 |