

National University of Computer and Emerging Sciences



Lab Manual
for
Programming Fundamentals

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Problem 1:

Write a program in C++ to find the frequency of each digit in a given integer.

Problem 2:

Write a program that displays the following using while loop.

Output:

```
4    4    4    4
3    3    3
2    2
1
```

Problem 3:

Write a code in C++ that generates the following output using do while.

Output:

```
1 1
1 2
1 3
2 1
2 2
2 3
3 1
3 2
3 3
```

Problem 4:

Write a C++ program that displays the pyramid star pattern using for loop.

Output:

```
  *
 ***
*****
*****
```

Problem 5:

Write a C++ program that displays the heart pattern with your name message inside it using for loop.

Output

A screenshot of a Windows command prompt window. The title bar at the top reads "C:\Documents and Settings\admin\Desktop\program.exe". The main area of the window is black with white text. A large heart shape is formed by a pattern of asterisks (*). In the center of the heart, the text "Happy Valentine's Day" is displayed. Below the heart, the text "Process returned 0 (0x0) execution time : 0.141 s" and "Press any key to continue." are visible.