AMERICAN INTERNATIONAL UNIVERSITY-BANGLADESH (AIUB)
Faculty of Science and Technology (FST)
Department of Computer Science (CS)
Introduction to Programming [**Task on Array and Loop**]

Department of Computer Science, AIUB

1. Take N numbers as input from user and print them in reverse order.

2. Take N Student marks as input and find the summation and average of the marks.

3. Take N integers as input and display Even and Odd for each integer.

4. Write a C++ program to find the largest and second largest element in a given array of integers.

5. Write a C++ program to find the smallest and second smallest elements in each array of integers.

6. Write a C++ program to take N characters but only output the vowels from those characters.

7. Take N integers as input and display prime and not prime for each of the integer.

8. Take N integers as input and display Perfect and Not Perfect for each of the integer.

9. Calculate the Factorial of a given number.
   Sample Output:
   Calculate factorial: 5
   Factorial of 5 is 120

10. Write a program in C++ to display the pattern like right angle triangle using an asterisk.
    Sample Output:
    Input number of rows: 5
    ```
    *
    **
    ***
    ****
    *****
    ```

11. Write a program in C++ to display the pattern as below using an asterisk.
    Sample Output:
    Input number of rows: 5
    ```
        *
       **
      ***
     ****
    *****
    ```

12. Write a program in C++ to display the pattern like a diamond.
Sample Output:

    Input number of rows (half of the diamond): 5

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

13. Write a program in C++ to convert a decimal number to hexadecimal number. Sample Output:
Input a decimal number: 43
The hexadecimal number is : 2B

14. Write a program in C++ to find the frequency of each digit for 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

15. Write a program in C++ to create and display unique three-digit number using 1, 2, 3, 4.
Also count how many three-digit numbers are there.
Sample Output:
The three-digit numbers are:
123 124 132 134 142 143 213 214 231 234 241 243 312 314 321 324 341 342 412 413
421 423 431 432
Total number of the three-digit-numbers are: 24