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|  | **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 integers as input and display prime and not prime for each of the integer.
2. Take N integers as input and display Perfect and Not Perfect for each of the integer.
3. Calculate the Factorial of a number.

Sample Output:

Your input to calculate factorial: 5

Factorial of 5 is 120

1. Write a program in C++ to display the pattern like right angle triangle using an asterisk.

Sample Output:

Input number of rows: 5

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

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

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1. 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
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

1. 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