**Assignment 1**

**1. Write a program to calculate the factorial of a number using while loop.**

The factorial of a positive number n is given by:
factorial of n (n!) = 1 * 2 * 3 * 4 * ... * n

**2. Write a program to print fibonacci series (10 values).**

A series where the next term is the sum of previous two terms.
The first two terms of the Fibonacci sequence is 0 followed by 1.
The Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21, ...

**3. Write a program to sort the elements of an array in ascending order.**

**4. Write a program to check current year is leap year or not. Users will enter a year value.**

**5. Write a program to print the first 10 prime numbers.**

**6. Write a program to calculate the area of triangle. Users will enter the values for base and height of the triangle.**

**7. Write a program to print the sum of the first 20 natural numbers.**

**8. Write a program to reverse the elements of an array where the array size as well as the array values are entered by the user.**

**9. Write a program to print only even numbers till 50.**

**10. Write a program to print this output using a two-dimensional array.**

Triangle Array
0
00
000
0000
00000
000000
0000000
00000000
000000000
0000000000

**Assignment 2**

1. **Write a program to print the occurrence of each character in the String**
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2. **Write a program to check if a given string is a palindrome or not.**
   Palindrome example : trurt

3. **Write a program to check "brown" is present in the string : A brown fox ran away fast**

4. **Write a program to convert String to a character array and character array to String.**

5. **Write a program to throw NumberFormatException and handle it appropriately with proper message.**
   If you pass invalid input to parseInt(str), this exception will be thrown.

6. **Write a program where a method declares that it throws ArithmeticException.**

7. **Write a program with nested try blocks.**

8. **Write a program to re-throw an exception. ( throw inside catch block)**

**Assignment 3**

**Write java programs to :**

1. **Find duplicate characters with their occurrences count using HashMap.**
2. **Reverse an Arraylist.**
3. **Check if a particular key exists in HashMap.**
4. **Convert keys of a map to a list.**
5. **Copy all elements of a HashSet to an Object array.**
6. **Get highest and lowest value stored in TreeSet**
7. **Sort ArrayList of Strings alphabetically.**
8. **Get Set view of keys from HashTable.**