Number Programs of loop

1. Prime number in Java: **Prime number** is a number that is greater than 1 and divided by 1 or itself only. In other words, prime numbers can't be divided by other numbers than itself or 1. For example 2, 3, 5, 7, 11, 13, 17 are the prime numbers.

1. Palindrome number in java: A **palindrome number** is *a number that is same after reverse*. For example 545, 151, 34543, 343, 171, 48984 are the palindrome numbers.
2. **Factorial Program** in Java: Factorial of n is the *product of all positive descending integers*. Factorial of *n* is denoted by n!. For example:

1. 4! = 4\*3\*2\*1 = 24

2. 5! = 5\*4\*3\*2\*1 = 120

1. WAP to Generate Random Number

we often required to **generate random numbers** while we develop applications. Many applications have the feature to **generate numbers randomly**, such as to verify the user many applications use the **OTP**. The best example of random numbers is dice. Because when we throw it, we get a random number between 1 to 6.

1. WAP to reverse a number. Ex: Input: 157

Output: 751

1. **Automorphic number** : A number is called an **automorphic number** if and only if the square of the given number ends with the same number itself. For example, **25, 76** are automorphic numbers because their square is **625** and **5776**, respectively and the

last **two** digits of the square represent the number itself. Some other automorphic numbers are **5, 6, 36, 890625**, etc.

1. A number is said to be **Peterson** if the sum of factorials of each digit is equal to the sum of the number itself.
2. Sunny Number: A number is called a **sunny number** if the number next to the given number is a perfect square. In other words, a number **N** will be a sunny number if **N+1** is a perfect square.
3. A number is called a **tech number** if the given number has an even number of digits and the number can be divided exactly into two parts from the middle. After equally dividing the number, sum up the numbers and find the square of the sum. If we get the number itself as square, the given number is a tech number, else, not a tech number. For example, 3025 is a tech number.
4. **Fascinating Number**: Multiplying a number by **two** and **three** separately, the number obtained by writing the results obtained with the given number will be called

a **fascinating** number. If the result obtained after concatenation contains all digits from **1 to 9**, exactly once.

Eg:

Let's take any number (n) say 327 and check whether the given number is fascinating or not. On multiplying the given number (n) by 2 and 3, we get:

327×2=654

327×3=981

Now, concatenate the above results to the given number (n). "327"+"654"+ "981"= **327654981**