PW SKILLS
JAVA With DSA & System Design
Assignment – Strings in Java (Part - 1)

1. **What is a String in Java?**
   Ans: String is referring to an object which is a collection of characters in java present in a package called java.lang.String.
   By default, a String is immutable in nature.
   Example:
   String S1 = "Pw Skills";

2. **Types of string in java are?**
   Ans: There are 2 types of String in java, based on implementation-
   - **i.** **Mutable String**
   - ii. **Immutable String**

3. **In how many ways can you create string objects in java?**
   Ans: There are the following ways from which we can create string objects:
   - String s = "String literals"
     - o Creates a String Object with string literals.
   - String s = new String ();
     - o Creates an empty String Object.
   - String s = new String (String literals);
     - o Creates a String Object with string literals in heap.
   - String s = new String (StringBuffer sb);
     - o Creates an equivalent String object for StringBuffer.
   - String s = new String (char [] ch);
     - o Creates an equivalent String object for character array.
   - String s = new String (byte [] b);
     - o Creates an equivalent String object for byte array.

   Some examples of string class are:
   1. String s= "PW Skills";   //PW Skills
   2. char [] ch = {'p', 'w',',};
      String s= new String(ch);
      System.out.println(s);   //pw

   3. byte [] b = {100,101,102};
      String s= new String(ch);
      System.out.println(s);   // def

4. **What is a string constant pool?**
   Ans: String pool is a storage space in the Java heap memory where string literals are stored. It is also known as String Constant Pool (SCP) or String Intern Pool. It is privately maintained by the Java String class. By default, the String pool is empty. A pool of strings decreases the number of String objects created in the JVM, thereby reducing memory load and improving performance.

5. **What do you mean by mutable and immutable objects?**
   Ans:
   - **Mutable objects:** Mutable objects are the string objects, once if we create a String, on that String if we try to perform any operation and if those changes get reflected in the same object, then such strings are called "Mutable String".
     Example: StringBuffer, StringBuilder

- **Immutable objects:** Immutable objects are those string objects, in which once if we create a String, on that String if we try to perform any operation then those changes won't be reflected in the same object , rather a new object will be created. Such type of String is called an "Immutable String".
  Example: String

6. **Where exactly is the string constant pool located in the memory?**
   Ans: We all know that JVM divides the allocated memory to a Java program into two parts. one is Stack and another one is heap. Stack is used for execution purposes and heap is used for storage purposes. In that heap memory, JVM allocates some memory specially meant for string literals. This part of the heap memory is called String Constant Pool.