Assignment String

Ans 1. Mutable String in Java:
Mutable means changing over time or that can be changed. In this string, we can change the value of the string and JVM doesn't create a new object and also we can change the value of the string in the same object.

To create a mutable string in java, Java has two classes StringBuffer and StringBuilder where the String class is used for the immutable string.
example:

```
public class main
{
   public static void main (String[] args)
   {
      StringBuffer str1 = new StringBuffer("pwskills");
      StringBuilder str2 = new StringBuilder("Learning");

      System.out.println("Value of str1 before change :" +
str1);
      System.out.println("Value of str2 before change :" +
str2);

      str1.append(".com");
      str2.append(" website");
```

```
        System.out.println("Value of str1 after change :" +
str1);
        System.out.println("Value of str2 after change :" +
str2);
    }
}
```

Output:

```
Value of str1 before change :pwskills
Value of str2 before change :Learning
Value of str1 after change :pwskills.com
Value of str2 after change :Learning website
```

Ans 2.Program to reverse a string:

Input:PWSKILLS

Output:SLLIKSWP

```
public class main {
    public static void main(String[] args) {
        String input = "PWSKILLS";
        String reversed = reverseString(input);
        System.out.println("Input: " + input);
        System.out.println("Output: " + reversed);
    }

    public static String reverseString(String str) {
        String reversed = "";
        for(int i = str.length() - 1; i >= 0; i--) {
            reversed = reversed + str.charAt(i);
        }
        return reversed;
    }
```

```
}
```

Ans 3. Program to reverse a sentence while preserving the positions :

Input: Think Twice

Output: kniht eciwt

```
public class main {
   public static void main(String[] args) {
      String input = "Think Twice";
      String reversed = reverseSentence(input);
      System.out.println("Input: " + input);
      System.out.println("Output: " + reversed);
   }
   public static String reverseSentence(String sentence) {
      String[] words = sentence.split(" ");
      StringBuilder reversedSentence = new
StringBuilder();

      for(int i = words.length - 1; i >= 0; i--) {
         reversedSentence.append(new
StringBuilder(words[i]).reverse().toString());
         if(i > 0) {
            reversedSentence.append(" ");
         }
      }
      return reversedSentence.toString();
   }
}
```

Ans 4. Program to sort a string alphabetically:

```
public class main {
   public static void main(String[] args) {
      String input = "PWSKILLS";
      String sorted = sortStringAlphabetically(input);
      System.out.println("Input: " + input);
      System.out.println("Output: " + sorted);
   }

   public static String sortStringAlphabetically(String str)
{
      char[] charArray = str.toCharArray();
      Arrays.sort(charArray);
      return new String(charArray);
   }
}
```

Output:
Input: PWSKILLS
Output: IKLLPSSW