Assignment

Strings in Java:-

Q1) What is a string in java?

A) String in java are a sequence of characters. In the java programming language, strings are objects.

Q2) What are the types of string in java?

A) There are two types of string in java:
1. Immutable String- These are those strings whose content cannot be changed once created.
2. Mutable String- These strings whose content can be changed without creating a new object.

Q3) In how many ways can you create string objects in java?

A) There are two ways to create a string object in java:
1. By String Literal
2. By new Keyword

Q4) What is a string constant pool?

A) String constant pool is nothing but a storage area in java heap where string literals store. It is also known as String Intern Pool. it is just like object allocation. By default, it is empty and privately maintained by the java string class.

Q5) What do you mean by mutable and immutable objects?

A) Mutable objects are those that allow you to change their value or data in place without affecting the object's identity. In contrast, immutable objects don't allow this kind of operation.

Q6) Where exactly is the string constant pool located in the memory?

A) The string constant pool is located exactly in heap memory of JVM.

Q7) What is a mutable string in java? Explain with an example.

A) Mutable strings are those strings whose content can be changed without creating a new object. StringBuffer and StringBuilder are mutable versions of string in java. Ex:

Q8) WAP to reverse a string.

A) public class Reverse
```
    {
        public static void main (String args[])
          {
              String string="PWSKILLS";
```

```java
        String reversedStr="";
        for(int i=string.length();i>=0;i--)
          {
              reversedStr=reversedStr+string.charAt(i);
          }
        System.out.println("Original string:"+string);
        System.out.println("Reverse          of          given
string:"+reversedStr);
          }
      }
```

Q9) WAP to reverse a sentence while preserving the position.
A) public class ReverseStringPreserveSpace

```java
    {
         static void reverseString(String input)
           {
             char[]inputArray=input.toCharArray();
             char[]result=new char[inputArray.length];
             for(int i=0;i<inputArray.length;i++)
               {
                  if(inputArray[i]==' ')
                    {
                       result[i]=' ';
                    }
               }
             int j=result.length-1;
             for(int i=0;i<inputArray.length;i++)
               {
                  if(inputArray[i] !=' ')
                    {
                       if(result[j]==' ')
                       {
                           j--;
                       }
                    result[j]=inputArray[i];
                    j--;
                    }
               }
         System.out.println(input+"-->"+String.valueOf(result);
         }
    public static void main(String args[])
```

```
        {
            reverseString("Think Twice");
        }
    }
```

Q10) WAP to sort a string alphabetically.

A)
```
public class SortAStringAlphabetically
    {
        public static void main(String args[])
          {
              Scanner sc=new Scanner(System.in);
              System.out.println("Enter String:");
              String s=sc.nextLine();
              Char[] c=s.toCharArray();
              Arrays.sort(c);
              System.out.println(c);
          }
    }
```

Q11) Write a simple string program to take input from the user.

A)
```
public class ScannerUserInput
    {
        public static void main(String args[])
          {
              System.out.println("How old are you?");
              Scanner stringScanner=new Scanner(System.in);
              String age=stringScanner.next();
              System.out.println(age+"is a good age to be!");
          }
    }
```

Q12) How do you concatenate two strings in java?Give an example.

A)In java,two strings can be concatenated by using the + or += operator,or through the concat() method, defined in the java.lang.Ex;
```
  class TestStringConcatenation
    {
        public static void main(String args[])
          {
              String s1="Sachin";
              String s2="Tendulkar";
              System.out.println(s3);
          }
```

}

Q13) How do you find the length of a string in java? Give an example.

A) In java, length of a string is found using length(). Ex:

```
class CalcLength
  {
     public static void main(String args[])
       {
          String name="PWSKILLS";
          int length=name.length();
          System.out.println("The          length          of          string
"+name+"is:"+length);
       }
  }
```

Q14) How do you compare two strings in java? Give an example.

A) We can compare string in java on basis of content and reference. It is authentication by equals() method, sorting by compareTo() method and reference matching by ==operator. Ex:

Q15) WAP to find out the length of the string"Refrigerator".

A)
```
class Length
  {
     public static void main(String args[])
       {
          String na="Refrigerator";
          int len=na.length();
          System.out.println("The length of the string"+na+"is:"+len);
       }
  }
```

Q16) WAP to check if the letter 'e' is present in the word "Umbrella".

A)
```
class Check_Letter
  {
     public static void main(String args[])
       {
          String str="Umbrella";
          boolean pre=false;
          for(int i=0;i<str.length();i++)
            {
               if(str.charAt(i)=='e')
                 {
```

```
                    pre=true;
                    break;
                }
            }
        System.out.println(pre);
    }
```

Q17) WAP to delete all consonants from the string"Hello,have a good day".

A) class delete
```
    {
        public static void main(String args[])
        {
            String s;
            int j=0;
            System.out.println("Enter a string");
            Scanner sc=new Scanner(System.in);
            s=sc.nextLine();
            char ch[]=new char[20];
            for(int i=0;i<s.length();i++)
            {
                        if(s.charAt(i)=='a'||s.charAt(i)=='A'||s.charAt(i)
==’e’||s.charAt(i)==’E’||s.charAt(i)==’i’||s.charAt(i)==’I’||s.charAt(i)==’
o’||s.charAt(i)==’O’||s.charAt(i)==’u’||s.charAt(i)==’U’)
                {
                    ch[j++]=s.charAt(i);
                }
                else
                {
                    continue;
                }
            }
            for(int i=0;i<j;i++)
            {
                System.out.print(ch[i]);
            }
                System.out.println();
            }
        }
```

Q18) WAP to reverse a string without using the inbuilt method.

A) class Reverse

```java
    {
      public static void main(String args[])
        {
           String s;
           Scanner sc=new Scanner(System.in);
           System.out.print("Enter a String:");
           s=sc.nextLine();
           System.out.print("After reverse string is:");
           int i=s.length();
           while(i>0)
             {
                System.out.print(s.charAt(i-1);
                i--;
             }
        }
    }
```

Q19) WAP to know whether the given string is a palindrome.

A) public class Palindrome
```java
    {
      public static void main(String args[])
        {
           String str="PWSKILLS";
           boolean flag=true;
           str=str.toLowerCase();
           for(int i=0;i<str.length()/2;i++)
             {
                if(str.charAt(i)!=str.charAt(str,length()=i-1))
                  {
                     flag=false;
                     break;
                  }
             }
           if(flag)
            {
              System.out.println("Given string is palindrome:");
            }
           else
            {
              System.out.println("Given string is not a palindrome");
            }
```

```
            }
        }
```

Q20) WAP to convert uppercase to lowercase and vice-versa.

```
A) public class ChangeCase
    {
        public static void main(String args[])
         {
            String str="Physics Wallah Skills";
            StringBuffer newStr= new StringBuffer(str);
            for(int i=0;i<str.length();i++)
                {
                    if(Character.isLowerCase(str.charAt(i)))
                      {
                          newStr.setcharAt(i.Character.toUpperCase(str.
charAt(i)));
                      }
                        elseif(Character.isUpperCase(str.charAt(i)))
                          {
                              newStr.setcharAt(i.Character.toLowerCase(str
.charAt(i)));
                          }
                }
            System.out.println("String            after            case
conversion:"+newStr);
            }
        }
```

Q21) WAP to remove a particular character from a string.

```
A) public class Remove
    {
        public static void main(String args[])
         {
            String str="PWSKILLS";
            System.out.println(charRemoveAt(str.7));
         }
        public static String charRemoveAt(String str.intp)
           {
              return str.substring(0,p)+str.substring(p+1);
           }
      }
```

Q22) WAP to find out the index of substring.

A) public class Substring
    {
        public static void main(String args[])
        {
            String str="PWSKILLS";
            int index1=str.indexOf('S');
            int index2=str.indexOf('L');
            System.out.println(index1+" "+index2);
            int index3=str.indexOf('S',2);
            System.out.println(index3);
            int index4=str.indexOf(' ');
            System.out.println(index4);
        }
    }

The End