

### **1.What is a string in java ?**

#### **ANSWER:-**

String refers to a object in java present in package called java.lang.String

String refers to collection of characters.

Example:-

```
String name="santha raju";
```

### **2.Types of string in java ?**

#### **ANSWER;-**

In java strings are two types:-

1.immutable string

2.mutable string

#### **1.immutable string:-**

Once if you create a string ,on that string if we try to perform any operation then those changes won't reflected in the same object,rather a new object will be created .Such type of strings are known as immutable string.

Example:-

```
String str=new String("raju");
```

#### **2.mutable string:-**

Once if we create a string ,on that string if we try to perform any operations and if the changes reflected in the object then such objects are known as mutable strings.

Example:-

```
StringBuilder name=new StringBuilder("raku");
```

### **3.In how many ways can we create string objects in java ?**

#### **ANSWER:-**

1.using string literal

```
string str="hello";
```

2.Using new operator

```
String str=new String("hello");
```

3.Using string concatenation

```
String str="hel"+"lo";
```

4.Using value of method

```
String str=String.valueOf("hello");
```

5.Using the format method

```
String str=String.format("%str","hello");
```

### **4.What is a string constant pool ?**

#### **ANSWER:-**

In Java, the string constant pool is a special memory area within the heap memory where all the string literals are stored. It helps in improving the memory utilization and performance of the Java application. When you create a string literal, Java checks if the same string already exists in the constant pool. If yes, the reference to the existing string is returned, otherwise a new string object is created in the constant pool and its reference is returned. This

mechanism of reusing existing string objects in the constant pool, rather than creating new objects, helps in reducing memory usage and improving the performance of the application.

### **5.What do you mean by mutable and immutable objects ?**

**ANSWER:-**

In programming, an object is considered mutable if its state can be changed after it is created. An object is considered immutable if its state cannot be changed after it is created.

Mutable objects: For example, a `StringBuilder` object in Java is mutable, as it provides methods to modify its contents, like `append()`, `insert()`, etc.

Immutable objects: On the other hand, a `String` object in Java is immutable, as once it is created, its contents cannot be changed. Any operation that appears to modify a `String` object actually creates a new `String` object with the desired modifications.

Immutable objects have several advantages, such as they are safe to use in multi-threaded environments as their state cannot be changed by another thread once created, and they can be easily shared and reused without the risk of data being modified

### **6.Where exactly the string constant pool was located in the memory ?**

**ANSWER:-**

The string constant pool in Java is located in the heap memory. The heap is a shared memory area that is used to store all objects created in a Java application. When a string literal is created, Java first checks if an equivalent string already exists in the constant pool. If it exists, the reference to the existing string is returned, otherwise a new string object is created in the constant pool and its reference is returned.

In summary, the string constant pool is a special memory area within the heap memory that is used to store all string literals and improve the memory utilization and performance of a Java application.