Length Varibale vs Length() Method

Length Variable:

1. length is a final variable applicable for arrays.
2. With the help of length variable, we can obtain the size of the array.

```
char ch[] = {'h', 'e', 'l', 'l', 'o'};
System.out.println(ch); // hello
System.out.println(ch.length); // 5
```

Length Method()

1. length() method is a final method which is applicable for string objects.
2. length() method returns the number of characters presents in the string.

```
String s1 = "hello";
System.out.println(s1); // hello
System.out.println(s1.length()); // 5
```

concat():
This method combines both the strings

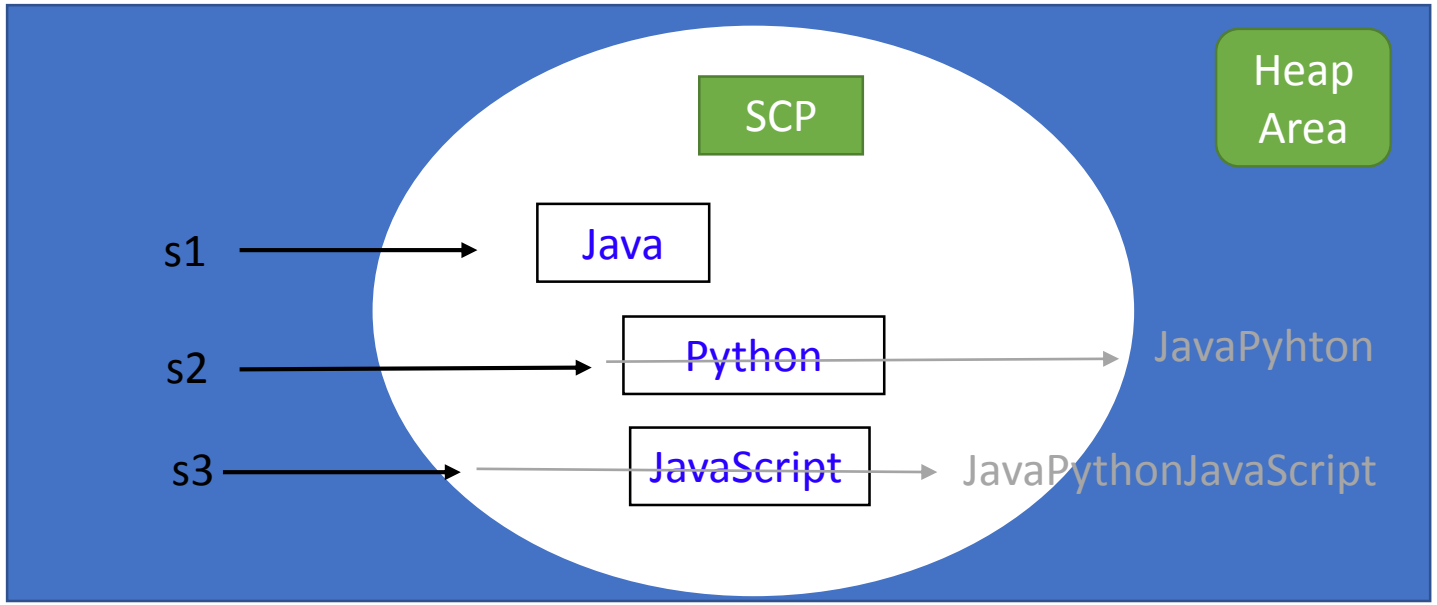
```
public String concat(String str) {
}

String s1 = "Java";
String s2 = "Python";

System.out.println(s1.concat(s2)); // JavaPython

String s3 = "JavaScript";
System.out.println(s3.concat(s1)); // JavaScriptJava

String s4 = "Spring";
String s5 = "Django";
String s6 = "React Js";

System.out.println(s4.concat(s5).concat(s6)); // SpringDjangoReact Js

String s7 = "MySQL";
System.out.println(s7.concat("Oracle")); // MySQLOracle
```

String Immutable:

String Objects are immutable once we create modification is not possible

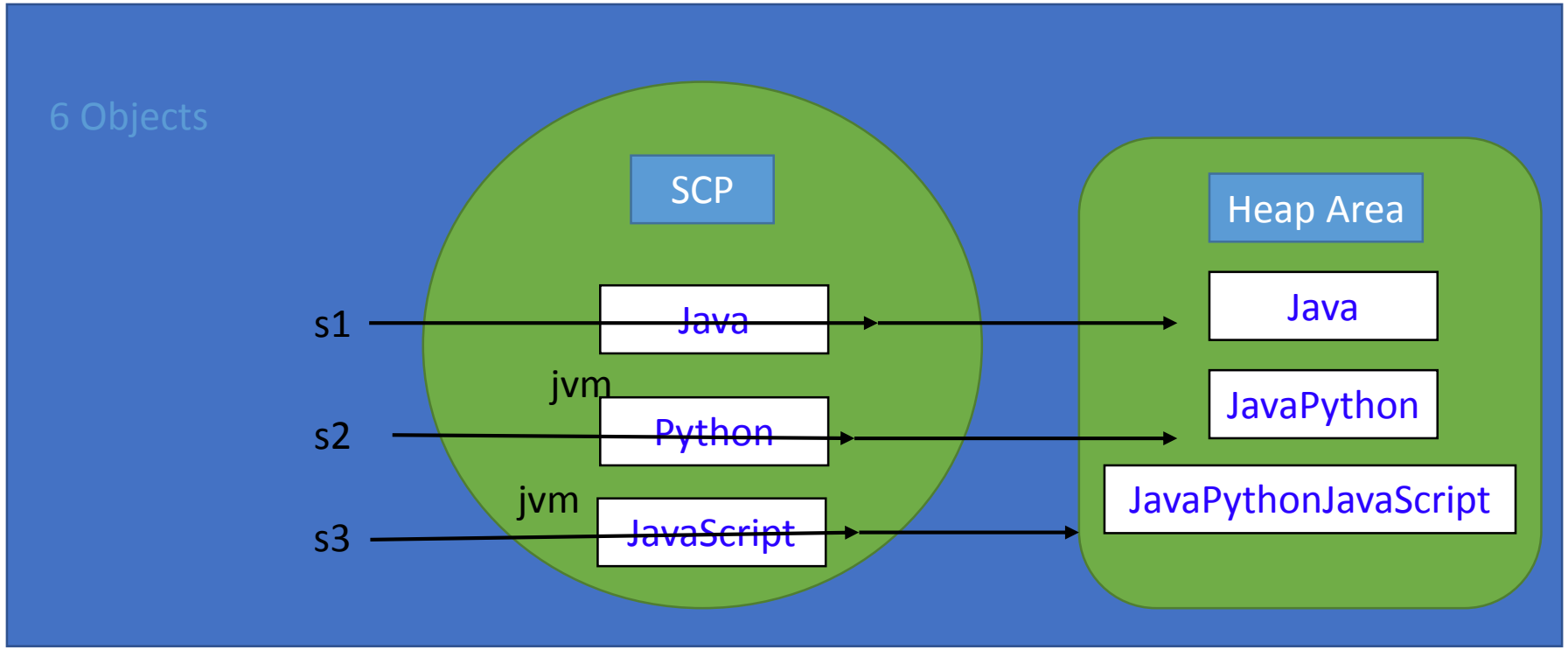
Every time we are creating new objects s1, s2, s3 they are stored in SCP area but orginal string is not changing

```
String s1 = "Java";
String s2 = s1.concat("Python");
String s3 = s2.concat("JavaScript");

System.out.println(s1); // Java
System.out.println(s2); // JavaPython
System.out.println(s3); // JavaPythonJavaScript
```



String Immutable:

```
String s1 = new String("Java");
String s2 = s1.concat("Python");
String s3 = s2.concat("JavaScript");

System.out.println(s1); // Java
System.out.println(s2); // JavaPython
System.out.println(s3); // JavaPythonJavaScript
```



equals():

It compares the content of strings, if content is same returns true else it will return false

```
public boolean equals(Object anObject) {

}
```

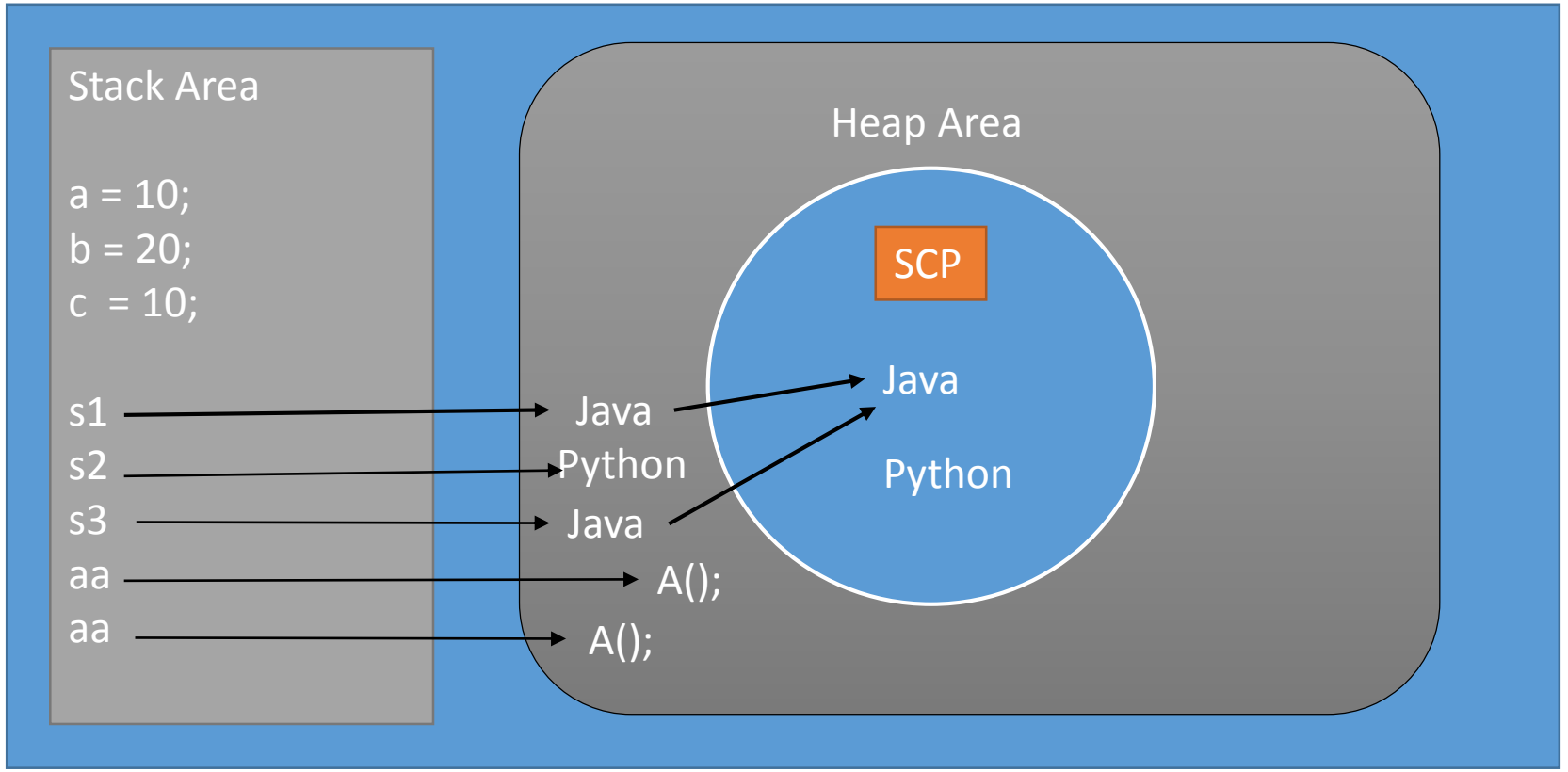
```
String s1 = new String("Java");
String s2 = new String("Python");
String s3 = new String("JavaScript");
String s4 = new String("Java");

System.out.println(s1.equals(s2)); // false
System.out.println(s2.equals(s1)); // false
System.out.println(s3.equals(s2)); // false
System.out.println(s4.equals(s1)); // true
```

Diff bw == and .equals() method

== is used for refrence comparision
.equals() method for content comparision

```
int a = 10;
int b = 20;
int c = 10;

// reference comparison
System.out.println(a == b); // false
System.out.println(a == c); // true
```

```
String s1 = new String("Java");
String s2 = new String("Python");
String s3 = new String("Java");

// here object reference are different bcoz of objects
System.out.println(s1 == s2); // false
System.out.println(s1 == s3); // false
```




```
A aa = new A();
A aaa = new A();
System.out.println(aa==aaa); // false
```

Diff bw == and .equals() method

```
//here object class equals() method is called so its false,  it works like == operator
B b1 = new B();
B b2 = new B();
System.out.println(b1.equals(b2)); //false

String s1 = new String("Java");
String s2 = new String("Python");
String s3 = new String("Java");

// content comparison for string objects, if data is there then it will return true or else false
//here string class equals() method is called so its true
System.out.println(s1.equals(s2)); //false
System.out.println(s1.equals(s3)); //true
```

equalsIgnoreCase()

This method is used to compare the two strings irrespective of the content (lower and upper case)

```
public boolean equalsIgnoreCase(String anotherString) {

}
```

```
String s1 = new String("Java");
String s2 = new String("java");

System.out.println(s1.equals(s2)); // false
System.out.println(s1.equalsIgnoreCase(s2)); // true
```

compareTo()

The comparison is based on the Unicode value of each character in the strings.

```
public int compareTo(String anotherString) {
}
```

```
String s1 = new String("A");
String s2 = new String("B");
String s3 = new String("A");
System.out.println(s1.compareTo(s2)); // s1<s2 returns negative
System.out.println(s1.compareTo(s3)); // s1 == s2 returns 0
System.out.println(s2.compareTo(s3)); // s2>s3 returns positive
```

compareToIgnoreCase()

```
String s1 = new String("A");
String s2 = new String("a");
String s3 = new String("B");

System.out.println(s1.compareToIgnoreCase(s2)); // s1 == s2 returns 0 irrespective of case sensitive
System.out.println(s1.compareTo(s2)); //65-97 = -32 //-32
System.out.println(s1.compareToIgnoreCase(s3)); //-1
```

Object class equlas() method ans String class equlas() method

```
//here object class equals() method is called so its false,  it works like == operator
B b1 = new B();
B b2 = new B();
System.out.println(b1.equals(b2)); //false

//here string class equals() method is called so its true
// content comparison for string objects, if data is there then it will return true or else false
String s1 = new String("Java");
String s2 = new String("Python");
String s3 = new String("Java");

System.out.println(s1.equals(s2)); //false
System.out.println(s1.equals(s3)); //true
```

startsWith() method checks if this string starts with the given prefix.
It returns true if this string starts with the given prefix; else returns false.

```
public boolean startsWith(String prefix) {
}
```

```
String s1 = new String("Java and Python");
System.out.println(s1.startsWith("J")); // true
System.out.println(s1.startsWith("P")); // false
```

endsWith() method checks if this string ends with a given suffix.
It returns true if this string ends with the given suffix; else returns false.

```
public boolean endsWith(String suffix) {
}
```

```
System.out.println(s1.endsWith("Python")); // true
System.out.println(s1.endsWith("Java")); // false
```

contains() method searches the sequence of characters in this string.
It returns true if the sequence of char values is found in this string otherwise returns false.

```
public boolean contains(CharSequence s) {
}
```

```
String s1 = new String("Java and Python");
System.out.println(s1.contains("and")); // true
System.out.println(s1.contains("is")); // false
```

charAt() method returns a char value at the given index number

```
public char charAt(int index) {

}
```

```
String s1 = new String("Programming");
System.out.println(s1.charAt(0)); // P
System.out.println(s1.charAt(4)); // r
System.out.println(s1.charAt(20)); // java.lang.StringIndexOutOfBoundsException
```

replace() method returns a string replacing all the old char to new char

```
public String replace(CharSequence target, CharSequence replacement) {
}
```

```
String s1 = new String("Java");
System.out.println(s1.replace("J", "j")); // java

String s2 = new String("Python");
System.out.println(s2.replace("Python", "Java")); // Java

String s3 = new String("Java Programming Java Programs");
System.out.println(s3.replace("Pro", "pro")); // Java programming Java programs
System.out.println(s3.replaceAll("a", "A")); // JAvA ProgrAmming JAvA ProgrAms
System.out.println(s3.replaceFirst("P", "p")); // Java programming Java Programs
```

lastIndexOf() method returns the last index of the given character value or substring.
If it is not found, it returns -1. The index counter starts from zero.

```
public int lastIndexOf(String str) {
}

// We are having 3 "likes" but it searches from last index
String s1 = "I like Java and I like JavaScript and I like Python";
System.out.println(s1.lastIndexOf("like"));// 40
System.out.println(s1.lastIndexOf("live")); // -1
```

indexOf() nethod

```
public int indexOf(String str) {
}

// We are having 3 "likes" but it searches from begging index
String s2 = "I like Java and I like JavaScript";
System.out.println(s2.indexOf("like"));// 2-->Starts finding from begging of statement

public int indexOf(String str, int fromIndex) {
}

System.out.println(s2.indexOf("like", 7)); // 18
```

```
public String toUpperCase() {

}

String s = "Java"; // 0123
// toUpperCase
System.out.println(s.toUpperCase());// JAVA

public String toLowerCase() {

}
// toLowerCase
System.out.println(s.toLowerCase());// java
```

```
public String substring(int beginIndex) {

}

String s = "Java"; // 0123
System.out.println(s.substring(1));// ava

public String substring(int beginIndex, int endIndex) {

}

System.out.println(s.substring(1, 3));// av
```

Case: 01 Split() Method

```
public String[] split(String regex) {
}
```

```
String s1 = new String("Hello Java Hello Python");
String[] s2 = s1.split(" ");
for (String string : s2) {
System.out.println(string);
}
```

```
Hello
Java
Hello
Python
```

Case:02 Split() Method

```
String s1 = new String("Hello:Java:Hello:Python");
String[] s2 = s1.split(":");
for (String string : s2) {
System.out.println(string);
}
```

```
Hello
Java
Hello
Python
```

Case:03 Split() Method

```
String s1 = new String("Hello - Java - Hello - Python");
String[] s2 = s1.split(" - ");
for (String string : s2) {
System.out.println(string);
}
```

```
Hello
Java
Hello
Python
```

Case:04 Split() Method

```
String s1 = new String("HelloJavaandHelloPython");
String[] s2 = s1.split("and");
for (String string : s2) {
System.out.println(string);
}
```

```
HelloJava
HelloPython
```

Case:05 Split() Method

```
public String[] split(String regex, int limit) {

}
```

```
String s1 = new String("HelloJava and HelloPython");
String[] s2 = s1.split(" ", 2);
for (String string : s2) {
System.out.println(string);
}
```

```
HelloJava
and HelloPython
```

Case 01: join()

```
public static String join(CharSequence delimiter, CharSequence... elements) {

}
```

```
String s1 = String.join(" ", "Hello", "Java", "Hello", "Python");
System.out.println(s1); // Hello Java Hello Python
```

Case 02: splict()

```
String s1 = String.join(" and ", "Hello", "Java", "Hello", "Python");
System.out.println(s1); // Hello and Java and Hello and Python
```

Case 03: splict()

```
String s1 = String.join("", "Hello", "Java", "Hello", "Python");
System.out.println(s1); // HelloJavaHelloPython
```

Diff bw Split and Join

```
String s1 = new String("Hello Java Hello Python");
String[] s2 = s1.split(" ");
for (String string : s2) {
System.out.println(string);
}

System.out.println();

//returns string
String s3 = String.join("", "Hello", "Java", "Hello", "Python");
System.out.println(s3); // HelloJavaHelloPython
```