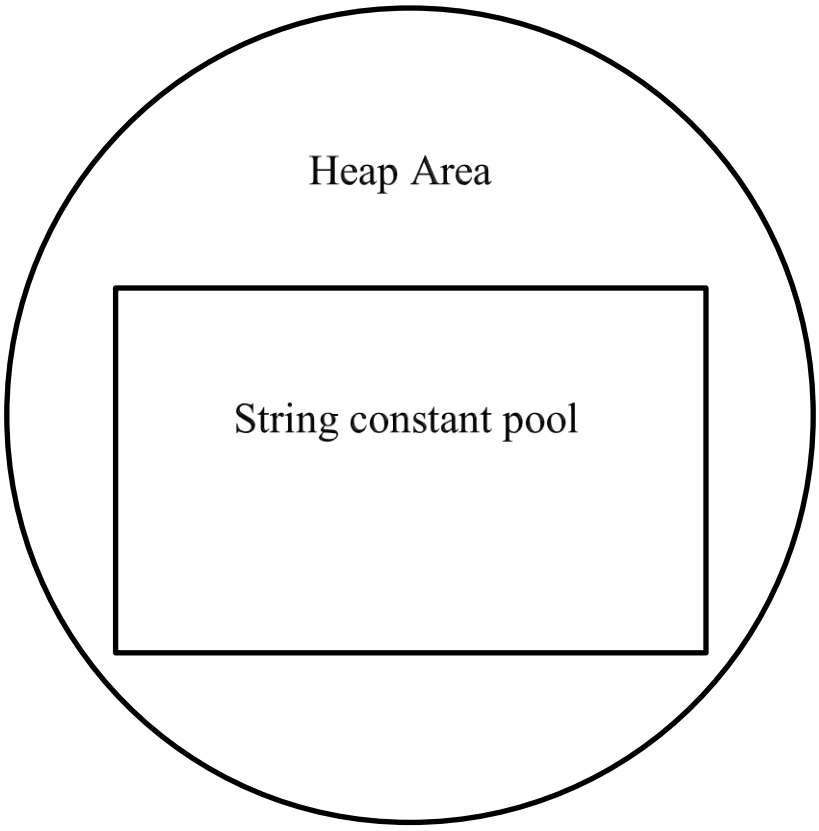
STRING

String Literal

- Strings are collection of characters enclosed within double quotes.
- Strings are non-primitive (mutlivalued) data.
- In java, Strings are stored as objects where object can be created for any of the following classes:
    - java.lang.String
    - java.lang.StringBuilder
    - java.lang.StringBuffer
- Whenever string literal is used in java, by default object is created for String class inside **String constant pool**.

String constant pool/ String pool/ String area

- String constant pool is an area located inside heap area.
- For every unique string literal one object is created for java.lang.String class.
- In case, if there is a duplicate string then new object won't be created instead existing objects address is returned.

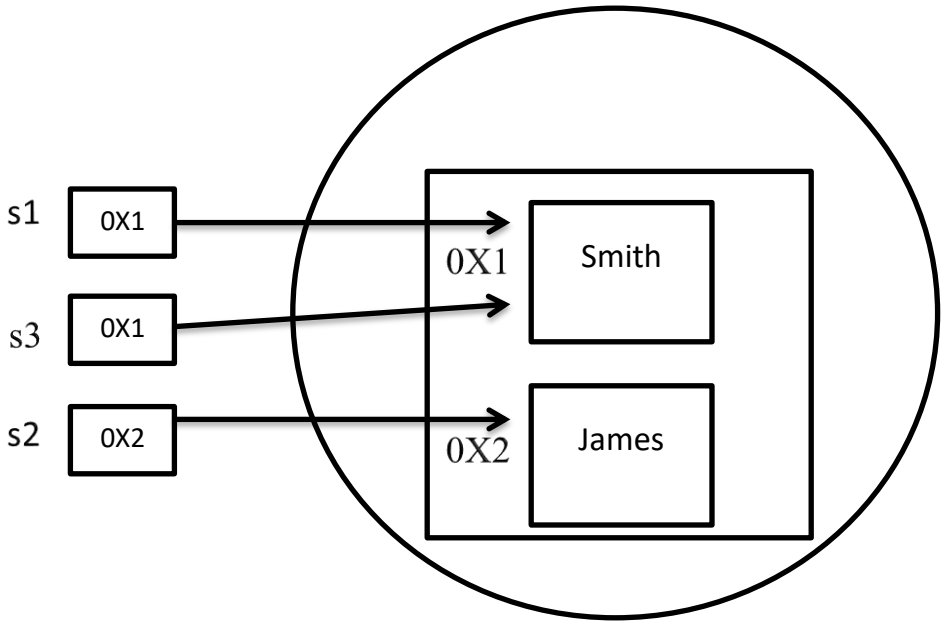


Example:

String s1= “Smith”;

String s2= “James”;

String s3= “Smith”;



java.lang.String

- String is an inbuilt class present in java.lang package.
- It is a final class.
- In string class toString(), equals() and hashCode() method of java.lang.Object class is overridden.
- By creating object for string class all the string literals are implemented.

Creating String by using new keyword and constructor

Whenever strings are stored by using constructor by default one object is created for every unique string in the string constant pool and for every new keyword one object is created inside the heap area.

Methods of String class

1. public char charAt(int index): It returns the characters at the specified index.
2. public int length(): It returns the length of the string.
3. public int indexOf(char ch): It returns the index of a character in the string which has first occurrence. If the character is not present it returns -1.
4. public int lastIndexOf(char ch): It returns the index of the character that has last occurance. If the character is not present it returns -1.
5. public String toUpperCase(): It converts the String to uppercase.
6. public String toLowerCase(): It converts the String to lowercase.
7. public boolean equals(String s): It compares the two string literals.
8. public boolean equalsIgnoreCase(String s): It compares the two string literals without considering the case.
9. public String concat(String s): It concatenates the specified string litera in the actual string.
10. public String replace(char oldchar, char newchar): It replaces the specified old character with the specified new character.
11. public String substring(int beginIndex): It extracts a substring from specified index to end.
12. public String substring(int beginIndex, int endIndex): It extracts a substring from specified begin index to end index.
13. public char[] toCharArray(): It converts a string to a char type array.
14. public String trim(): It removes unnecessary spaces before and after the string.
15. public String[] split(String s): It splits the string from the specified string.

Characteristics of String class

- String objects are immutable in nature, i.e, once value has been assigned even if you make a change in the object, original object is not affected but new object is created and that object is referred by the reference variable.
- To create a mutable String object, java.lang.StringBuffer or java.lang.StringBuilder can be used.

java.lang.StringBuffer

- StringBuffer is an inbuilt class present in java.lang package.
- It is a final class.
- It is used to create mutable object for the String.
- In StringBuffer class toString() method of java.lang.Object class is overridden but equals() and hashCode() are not overridden.