Course Name - Object Oriented Programming using Java

Lecture 15 – Basic String handling & I/O

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Topic of Interest

- String Handling in Java
- Immutable class in Java
- String Class in Java
- Methods of String class
- charAt()
- compareTo()
- equals()
- equalsIgnoreCase()
- indexOf()
- length()
- subString()

String Handling in Java

The basic aim of String Handling concept is loading the string data in the main memory (RAM), manipulating the data of the String, and retrieving the part of the String etc. String Handling provides a lot of concepts that can be performed on a string such as concatenation of string, comparison of string, find sub string etc.

Java String contains an immutable sequence of Unicode characters. Java String is different from string in C or C++, where (in C or C++) string is simply an array of char. String class is encapsulated under java.lang package.

Immutable class in Java

Immutable class means that once an object is created, we cannot change its content. In Java, String, Integer, Byte, Short, Float, Double and all other wrapper classes are immutable

```
// An immutable class
final class Student
{       final String name;
        final int regNo;
        Student(String name, int
regNo)
        {       this.name = name;
                this.regNo = regNo;
        }
        public String getName()
        {
                return name;
        }
        public int getRegNo()
        {
                return regNo;
        } }
```

```
// Driver class
class Test
{       public static void main(String args[])
        {
                Student s = new Student("ABC", 101);
                System.out.println(s.getName());
                System.out.println(s.getRegNo());
                /*Uncommenting below line causes
error i.e. prog.java:32: error: cannot assign a value
to final variable regNo*/
                //s.regNo = 102;
        } }
```

Output:
ABC
101

String Class in Java

It is a predefined class in java.lang package that can be used to handle the String. String class is immutable that means its content cannot be changed at the time of execution of program. String class object is immutable that means when we create an object of String class it never gets changed in the existing object.

```
class StringHandling
{
public static void main(String arg[])
{
String s=new String("java");
s.concat("software");
System.out.println(s);
}
}
```

Output

java

Methods of String class

This length() method is used to get the number of character of any string.

```
class StringHandling
{
public static void main(String arg[])
{
int l;
String s=new String("Java");
l=s.length();
System.out.println("Length: "+l);
}
}
```

Output

Length: 4

charAt()

This method is used to get the character at a given index value.

```
class StringHandling
{
public static void main(String arg[])
{
char c;
String s=new String("Java");
c=s.charAt(2);
System.out.println("Character:
"+c);
}
}
```

Output

Character: v

compareTo()

This method is used to compare two strings by taking unicode values. It returns 0 if the strings are same otherwise returns +ve or -ve integer values.

```
class StringHandling
{
public static void main(String arg[])
{
String s1="Hitesh";
String s2="Raddy";
int i;
i=s1.compareTo(s2);
if(i==0){
System.out.println("Strings are
same");}
else{
System.out.println("Strings are not
same");
}
}}
```

Output

Strings are not same

equals()

This method is used to compare two strings. It returns true if strings are same otherwise returns false. It is a case sensitive method.

```
class StringHandling
{
public static void main(String arg[])
{
String s1="Hitesh";
String s2="Raddy";
String s3="Hitesh";
System.out.println("Compare String:
"+s1.equals(s2));
System.out.println("Compare String:
"+s1.equals(s3));
}
}
```

Output

Compare String: false
Compare String: true

equalsIgnoreCase()

This method is a case insensitive method. It returns true if the contents of both the strings are same otherwise returns false.

```
class StringHandling
{
public static void main(String arg[])
{
String s1="Hitesh";
String s2="HITESH";
String s3="Raddy";
System.out.println("Compare String:
"+s1.equalsIgnoreCase(s2));
System.out.println("Compare String:
"+s1.equalsIgnoreCase(s3));
}
}
```

Output

Compare String: true
Compare String: false

indexOf()

This method is used to find the index value of a given string. It always gives the starting index value of first occurrence of string.

```
class StringHandling
{
public static void main(String arg[])
{
String s="Java is programming language";
System.out.println(s.indexOf("programmin
g"));
}
}
```

Output

8

length()

This method is used to get the number of character of any string.

```
class StringHandling
{
public static void main(String arg[])
{
int l;
String s=new String("Java");
l=s.length();
System.out.println("Length: "+l);
}
}
```

Output

Length: 4

subString()

This method is used to get the part of a given string.

```
class StringHandling
{
public static void main(String arg[])
{
String s="Java is programming language";
System.out.println(s.substring(8)); // 8 is
starting index
}
}
```

Output

programming language

Thank You