Object-Oriented Programming (CS F213)

Module II: Arrays and Strings in Java

CS F213 RL 8.3: Important String Methods - II

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CS F213 RL 8.3 : Topics

- Important String Methods
  - ➢ Searching Strings [indexOf() and lastIndexOf()]
  - ➢ Modifying a String [substring(), replace() and trim()]
  - ➢ Data Conversion [valueOf()]
  - ➢ Changing Case of Characters [toUpperCase() and toLowerCase()]

Searching Strings : indexOf() and lastIndexOf()

- int indexOf(int ch) → Searches the index of character 'ch' in this string and returns that index value (if found) otherwise returns -1 (if not found)
- int lastIndexOf(int ch) → Searches the last index of character 'ch' in this string and returns that index value (if found) otherwise returns -1 (if not found)
- int indexOf(String str) → Searches the index of string "str" in this string and returns that index value (if found) otherwise returns -1 (if not found)
- int lastIndexOf(String str) → Searches the last index of string "str" in this string and returns that index value (if found) otherwise returns -1 (if not found)
- int indexOf(int ch, int startIndex) → Searches the index of charcter 'ch' in this string starting from startIndex and returns that index value (if found) otherwise returns -1 (if not found)
- int lastIndexOf(int ch, int startIndex) → Searches the last index of character 'ch' in this string starting from startIndex and returns that index value (if found) otherwise returns -1 (if not found)
- int indexOf(String str, int startIndex) → Searches the index of string "str" in this string starting from startIndex and returns that index value (if found) otherwise returns -1 (if not found)
- int lastIndexOf(String str, int startIndex) → Searches the last index of string "str" in this string starting from startIndex and returns that index value (if found) otherwise returns -1 (if not found)

Searching Strings : indexOf() and lastIndexOf() : Example

```
String    s     =     "Now is the Time For All Indian";
          s     =     s + "to come to the aid of India";
```

```
System.out.println(s.indexOf("x"));            -1
System.out.println(s.indexOf("a"));            28
System.out.println(s.lastIndexOf("a"))         56
System.out.println(s.indexOf("Ind"));          24
System.out.println(s.lastIndexOf("Ind"));      52
System.out.println(s.indexOf("Ind",30));       52
```

Modifying Strings : substring()

- String substring(int startIndex) → Returns a substring starting from stratIndex (inclusive) to the last of this string [Note: 0<=startIndex<=L, where L is length of this String]
- String substring(int startIndex, int endIndex) → Returns a substring starting from stratIndex (inclusive) to the endIndex (exclusive) of this string. Returned substring will have characters from startIndex to endIndex-1 [Note: 0<=startIndex,endIndex<=L, where L is length of this String and startIndex <= endIndex]
    - ➢ If values of startIndex and endIndex are equal, then no character will be extracted
    - ➢ If value of startIndex < endIndex OR startIndex, endIndex > L o, then StringIndexOutOfBoundsException will be thrown

Modifying Strings : substring() Example

String s = "Now is the Time For All Indian";	
System.out.println(s.length());	30
System.out.println(s.substring(30,30));	<<No Character Will be extracted
System.out.println(s.substring(20,20));	<<No Character Will be extracted
System.out.println(s.substring(0,2));	No
System.out.println(s.substring(11));	Time For All Indian

Replacing Characters in String

- String replace(char original, char replacement) → Replaces all occurrences of a character original in this String with a character replacement and returns the modified String
- Example : System.out.println("Object-Oriented Programming".replace('m','x')) will result in “Object-Oriented Prograxxing” as output
- String trim() → Replaces the leading and trailing white spaces from the invoking string and returns the modified String
- Example

System.out.println(" My Name is David ".length()); $\Longrightarrow$ **20**

System.out.println(" My Name is David ".trim()); $\Longrightarrow$ **My Name is David**

System.out.println(" My Name is David ".trim().length()); $\Longrightarrow$ **16**

Changing the Case of Characters

- String toUpperCase() → Changes each character of the invoking string to upper case and returns the modified string
- String toLowerCase() → Changes each character of the invoking string to lower case and returns the modified string
- For Example, the statement System.out.println("My Name is David".toUpperCase()); displays “MY NAME IS DAVID” over console
- For Example, the statement System.out.println("My Name is David".toLowerCase()); displays “my name is david” over console

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Thank You