

Java Programming

— Characters and Strings —

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char

char

- The data type `char` is a “16 bit character”.
- A `char` is assigned the Unicode value of the character.
- Character literals are enclosed in single quotes.

```
char c1 = 'a', c2 = 97;
```

```
System.out.println("c1 : " + c1);
```

```
System.out.println("c2 : " + c2);
```

```
c1 : a
```

```
c2 : a
```

String

- A **String** is a sequence of characters.
- A **String** is not a primitive data type(`int`, `double`, `char`). A **String** is a class.
- A string is enclosed in double quotes.

Declaring String

```
String s1;  
String s2 = "efgh";
```

Example of String

```
s1 = "abcd";           — Assigning s1 to "abcd".  
System.out.println(s1);  
s1 = s1 + s2;         — Concatenating s1 with s2.  
System.out.println(s2);
```

abcde**efgh**

To get a string using the keyboard

```
public static String inputString(){
    Scanner sc = new Scanner(System.in);
    String str;

    str= sc.next();
    return str;
}
```

```
String s;
```

```
System.out.print("Input a String : ");
s = inputString\(\);
```

Method of String (1)

- String is a class.
- The String class provides useful methods.
- To use a method is “`variableName.methodName`”

Method

```
int length()
char charAt(int index)
int indexOf(String str)
boolean equals(Object anObject)
boolean startsWith(String str)
boolean endsWith(String str)
String toLowerCase()
String toUpperCase()
String substring(int begin, int end)
String replace(char old, char new)
char[] toCharArray()
```

Method of String (2)

```
String s1 = "abcdefghijklmn";
```

length()

This method returns the length of this string.

```
int n;  
n = s1.length();  
System.out.println(n);
```

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charAt(n)

The `charAt(n)` method returns the char value at the specified index. An index ranges from 0 to `length() - 1`.

```
char c;  
c = s1.charAt(5);  
System.out.println(c);
```

f

Method of String (3)

```
String s1 = "abcdefghijklmn";
```

`indexOf(s)`

The `indexOf(s)` method returns the index within this string of the first occurrence of the specified character.

```
int n;  
n = s1.indexOf("klm");  
System.out.println(n);
```

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`equals(s)`

The `equals(s)` method compares this string with the string `s` and returns boolean value.

```
String s2 = "abcdefghij";  
boolean b;  
b = s1.equals(s2);  
System.out.println(b);  
false
```

Method of String (4)

```
String s1 = "abcdefghijklmn";
```

`toUpperCase()`

The `toUpperCase` method converts all of the characters in this String to upper case.

```
String s2;  
s2 = s1.toUpperCase();  
System.out.println(s2);
```

```
ABCDEFGHIJKLMN
```

`substring(m,n)`

The `substring(m,n)` method returns a new string that is a substring of this string. The substring begins at the $(m+1)$ th character and extends to be n th character.

```
String s2;  
s2 = s1.substring(4, 9);  
System.out.println(s2);
```

```
efghi
```