

Think and Tell

Reset Password

Email

abc@def.com

New Password

.....



Confirm Password

.....



SUBMIT

Which type of data is used to change a password?

What do you think happens when a string is entered as a password?

Source: <https://blog.fossasia.org/>

Employee Identity Document

What is common between all the employee Ids?
How can you prefix employee Ids with “EMP”?

	A	B	C
1	Employee ID	Location	Name
2	E001	Chicago, IL	Steven Adams
3	E002	Chicago, IL	Aaron Love
4	E003	Chicago, IL	Gary Buxton
5	E004	Chicago, IL	Michael Stafford
6	E005	Chicago, IL	Patricia Spain
7	E006	Chicago, IL	Dharma Milner
8	E007	Chicago, IL	Thanh Nguyen
9	E008	Chicago, IL	Myron Duarte
10	E009	Chicago, IL	Cheryl Perez
11	E010	Oakbrook, IL	Calvin Russell
12	E011	Oakbrook, IL	Virginia Thiesse
13	E012	Oakbrook, IL	Wenquao Li
14	E013	Oakbrook, IL	Jo Ann Cortelloni
15	W001	Chicago, IL	Chicago Workgroup
16	W002	Oakbrook, IL	Oakbrook Workgroup

Finding the Country Code

France	+33 6 34 55 66 77
USA	+44 20 8366 1177
Algeria	+213 634 55 66 77
Swiss	+41 44 668 18 00
Italy	+39 365 478 9145
Portugal	+351 22 040 4000

Source: <https://pcf.gallery/phone-number-by-country/>

Imagine that you have been assigned the task of finding a particular country code from a long list of countries.

How can you extract this data from the long list?

Registration Form

LAST NAME	<input type="text"/>	(max 30 characters a-z and A-Z)
DATE OF BIRTH	Day: <input type="text"/> Month: <input type="text"/> Year: <input type="text"/>	
EMAIL ID	<input type="text"/>	
MOBILE NUMBER	<input type="text"/>	(10 digit number)
GENDER	Male <input type="radio"/> Female <input type="radio"/>	
ADDRESS	<input type="text"/>	
CITY	<input type="text"/>	(max 30 characters a-z and A-Z)
PIN CODE	<input type="text"/>	(6 digit number)
STATE	<input type="text"/>	(max 30 characters a-z and A-Z)

A registration form usually requires this data:

- First and last name in sentence case
- DOB in the correct format (DD/DMM/YYYY)
- Phone number
- Gender
- Exact address details with house and street number, city, state, country and pin code

How do you handle string data entered by a user in this form?

Use Java "String" Class



Learning Objectives

- Define strings in Java
- Differentiate between mutable and immutable strings
- Create a string
- Implement string operations



Strings in Java

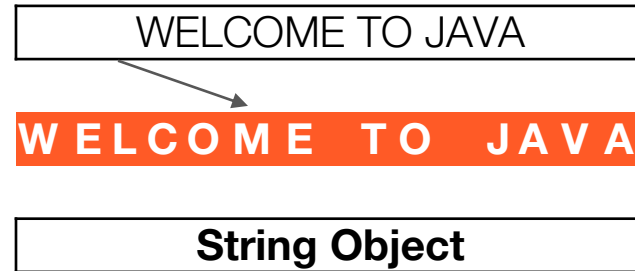
- A collection or a sequence of characters is known as a string
- In Java, string is a class which can be used by declaring its object
- To store string literals, we can use the string class in the java.lang package

The following code snippet is used to create a string object:

```
String s1 = new String("Hello");
```

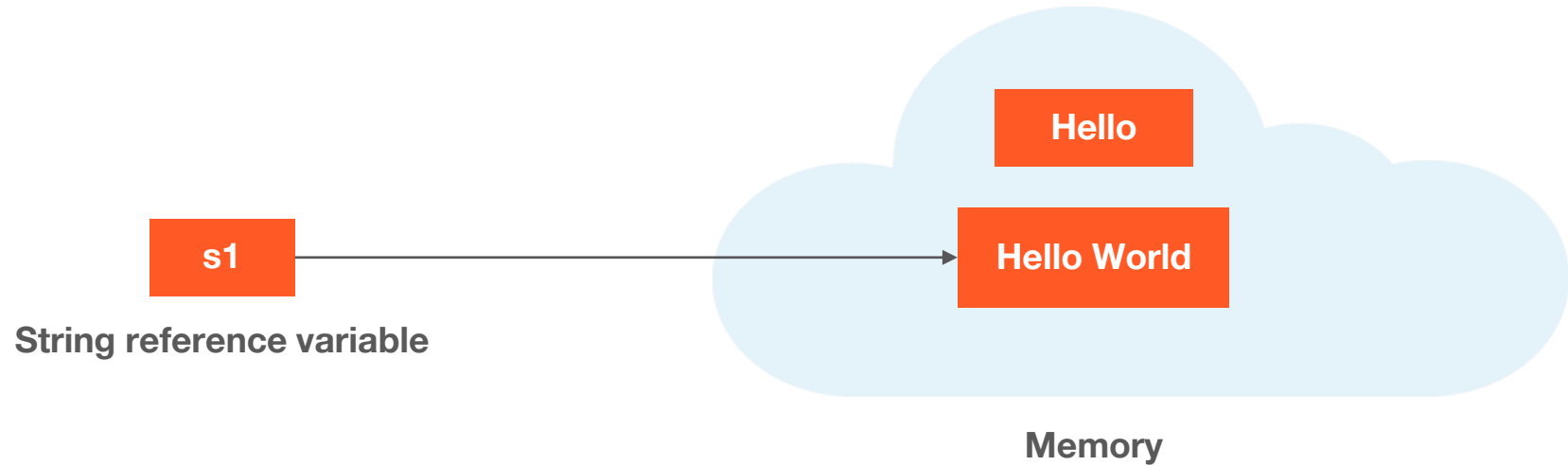
A string object can also be created by using the following code snippet:

```
String s1 = "Hello";
```



Strings in Java

In Java, string is an immutable class. This means that once a string object is created, its value cannot be changed.



Manipulating Strings

How do we perform different operations on strings?



Manipulating Characters in a String

String manipulation basically refers to the process of changing, pasting, splicing, parsing and analysing strings

Some of the commonly used methods in the string class are:

```
int length()  
char charAt(int index)  
void getChars(int srcBegin, int srcEnd, char[] dst,  
int dstBegin)  
boolean equals(Object obj)  
int compareTo(String str)  
boolean startsWith(String prefix)  
boolean endsWith(String suffix)
```

Manipulate Characters in a String (contd.)

```
int indexOf(int ch)
int lastIndexOf(int ch)
String substring(int beginindex)
String concat(String str)
String replace(char oldChar,char newChar)
String toUpperCase()
String toLowerCase()
String valueOf(Object obj)
boolean equalsIgnoreCase(String anotherString)
```

Changing String Case

To change case of a string, we use the `toLowerCase()` and `toUpperCase()` methods of the string

Refer to the following code snippet:

```
public void changeCase(String message) {  
    message = "Java Programming";  
    System.out.println(message.toLowerCase());  
    System.out.println(message.toUpperCase());  
}
```

Output - java programming
JAVA PROGRAMMING

String Length

To find the length of a string, we use the `length()` method of the string

Refer to the following code snippet:

```
public class stringManipulations {  
    public static void main(String[] args) {  
        String password = "password@123";  
        int len = password.length();  
        System.out.println("Length of String :"+len);  
    }  
}
```

Output - Length of String: 12

Joining Strings

To join strings , we use the `concat ()` method of the string

Refer the following code snippet:

```
public void joinStrings(String fName, String lName, String msg) {  
    msg = "Hello ";  
    fName = "James ";  
    lName = "Smith";  
    String customerDetails = msg.concat(fName).concat(lName);  
    System.out.println(customerDetails);  
}
```

Output - Hello James Smith

Comparing Strings

To compare strings, we use the `equals()` method of the string

Refer the following code snippet:

```
public void compareStrings(String str1, String str2) {  
    str1 = "Hello";  
    str2 = "James";  
    boolean result = str1.equals(str2);  
    System.out.println(result);  
}
```

Output - false

Comparing Strings (contd.)

We can also use the `compareTo()` and `compareToIgnoreCase()` method of the string

Refer to the following code snippet:

```
public void compareStrings(String str1, String str2) {  
    str1 = "Hello";  
    str2 = "hello";  
    System.out.println(str1.compareTo(str2));  
    System.out.println(str1.compareToIgnoreCase(str2));  
}
```

Output - -32

0

Interactive Demo

Write a program that accepts the username and password and performs the following tasks:

Task1: Create password of less than 15 characters.

Task2: Ensure that the username is “James” and password entered is "password@123“.

Task3: Display the welcome message with the username in an appropriate case.



Modifying Strings

To modify strings at multiple places, we use the `replace()` and `replaceAll()` methods of the string.

Refer the following code snippet:

```
public void modifyString(String msg) {  
    msg = "Java Programming";  
    System.out.println(msg.replaceAll("Programming", "Code"));  
}
```

Output - Java Code

String to Character

To convert a string to a character array, we use the `toCharArray()` method of the string

Refer the following code snippet:

```
public void stringToChar(String msgCode) {  
    msgCode = "Java Programming";  
    char[] result;  
    result = msgCode.toCharArray();  
    System.out.println(result);  
}
```

Output - Java Programming

Position of Characters in a String

To check the character at the specified index, we use the `charAt()` method of the string

Refer the following code snippet:

```
public void charAt(String msgCode) {  
    String str = "Java Programming";  
    char char1 = str.charAt(0);  
    char char2 = str.charAt(5);  
    System.out.println("Character at 1st position: "+char1);  
    System.out.println("Character at 6th position: "+char2);}
```

Output - Character at 1st position: J
Character at 6th position: P

Interactive Demo

Write a program to accept two strings. Check whether the given strings are a rotation of each other.

For example,
If string1 is "IndiaAndAmerica" and string2 is "AmericaAndIndia" then your program should return as false, but if string2 is "AmericaIndiaAnd" then it should return as true.



Key Takeaways

- Mutable and immutable strings
- Create a string
- Different string operations
 - Concatenate strings
 - Find out the length of a string
 - Compare strings
 - Change the case of strings
 - Replace string characters





Thank you!