Java - Introduction to Programming
Lecture 12

Strings

Declaration
```
String name = "Tony";
```

Taking Input
```
Scanner sc = new Scanner(System.in);

    String name = sc.next();
```

Concatenation (Joining 2 strings)
```
String firstName = "Tony";

    String secondName = "Stark";


    String fullName = firstName + " " + secondName;
    System.out.println(fullName);
```

Print length of a String
```
String firstName = "Tony";

    String secondName = "Stark";


    String fullName = firstName + " " + secondName;
    System.out.println(fullName.length());
```

Access characters of a string
```
String firstName = "Tony";

    String secondName = "Stark";


    String fullName = firstName + " " + secondName;


    for(int i=0; i<fullName.length(); i++) {
        System.out.println(fullName.charAt(i));
    }
```

Compare 2 strings

```java
import java.util.*;

public class Strings {
    public static void main(String args[]) {
        String name1 = "Tony";
        String name2 = "Tony";

        if(name1.equals(name2)) {
            System.out.println("They are the same string");
        } else {
            System.out.println("They are different strings");
        }

        //DO NOT USE == to check for string equality
        //Gives correct answer here
        if(name1 == name2) {
            System.out.println("They are the same string");
        } else {
            System.out.println("They are different strings");
        }

        //Gives incorrect answer here
        if(new String("Tony") == new String("Tony")) {
            System.out.println("They are the same string");
        } else {
            System.out.println("They are different strings");
        }

    }
}
```

Substring

The substring of a string is a subpart of it.

```java
public class Strings {
    public static void main(String args[]) {
        String name = "TonyStark";

        System.out.println(name.substring(0, 4));
```

```
        }
}
```

ParseInt Method of Integer class

```java
public class Strings {
   public static void main(String args[]) {
       String str = "123";
       int number = Integer.parseInt(str);
       System.out.println(number);


   }
}
```

ToString Method of String class

```java
public class Strings {
   public static void main(String args[]) {
       int number = 123;
       String str = Integer.toString(number);
       System.out.println(str.length());


   }
}
```

ALWAYS REMEMBER : Java Strings are Immutable.

Homework Problems

1. Take an array of Strings input from the user & find the cumulative (combined) length of all those strings.

```java
import java.util.*;



public class Strings {

   public static void main(String args[]) {

      Scanner sc = new Scanner (System.in);

      int size = sc.nextInt();

      String array[] = new String[size];

      int totLength = 0;


      for(int i=0; i<size; i++) {

        array[i] = sc.next();

        totLength += array[i].length();

      }



      System.out.println(totLength);

   }

}
```

2. Input a string from the user. Create a new string called 'result' in which you will replace the letter 'e' in the original string with letter 'i'.

Example :

original = "eabcdef" ; result = "iabcdif"

Original = "xyz" ; result = "xyz"

```java
import java.util.*;


public class Strings {

   public static void main(String args[]) {

      Scanner sc = new Scanner (System.in);

      String str = sc.next();

      String result = "";


      for(int i=0; i<str.length(); i++) {

        if(str.charAt(i) == 'e') {

           result += 'i';

        } else {

           result += str.charAt(i);

        }

      }


      System.out.println(result);

   }

}
```

3. Input an email from the user. You have to create a username from the email by deleting the part that comes after '@'. Display that username to the user.

Example :

email = "apnaCollegeJava@gmail.com" ; username = "apnaCollegeJava"

email = "helloWorld123@gmail.com"; username = "helloWorld123"

```java
import java.util.*;



public class Strings {

    public static void main(String args[]) {

        Scanner sc = new Scanner (System.in);

        String email = sc.next();

        String userName = "";



        for(int i=0; i<email.length(); i++) {

          if(email.charAt(i) == '@') {

            break;

          } else {

            userName += email.charAt(i);

          }

        }



        System.out.println(userName);

    }

}
```