STRINGS & NUMBERS

v101

String Static Methods - length()

```
public static void main (String[] args)
   { //main
      String phrase = "Mohawk College";

      //index numbers
      System.out.println( phrase );
      System.out.println("01234567890123" );

      System.out.println(" length: " +  phrase.length()  );

   } //main
```

```
Mohawk College
01234567890123
length: 14
```

String Static Methods - the + sign

```
public static void main (String[] args)
{ //main
      String phrase = "Mohawk College";

      //index numbers
      System.out.println( phrase );
      System.out.println("01234567890123" );


      // + sign means concatenation
      System.out.println(phrase + "\n" + "Department of Computer Science");

} //main
```

```
Mohawk College
01234567890123
Mohawk College
Department of Computer Science
```

String Static Methods - toUpperCase( )

```
public static void main (String[] args)
   { //main
      String phrase = "Mohawk College";

      //index numbers
      System.out.println( phrase );
      System.out.println("01234567890123" );

      //upper case
      System.out.println(phrase.toUpperCase()  );
   } //main
```

```
Mohawk College
01234567890123
MOHAWK COLLEGE
```

String Static Methods - contains( )

```
public static void main (String[] args)
{ //main
      String phrase = "Mohawk College";

      //index numbers
      System.out.println( phrase );
      System.out.println("01234567890123" );

      //contains
      System.out.println(phrase.contains("w")  );

      System.out.println(phrase.contains("Academy") );

 } //main
```

```
Mohawk College
01234567890123
true
false
```

String Static Methods - charAt()

```
public static void main (String[] args)
{ //main
      String phrase = "Mohawk College";

      //index numbers
      System.out.println( phrase );
      System.out.println("01234567890123" );

      //character index number
      System.out.println( phrase.charAt(4)  );

 } //main
```

```
Mohawk College
01234567890123
w
```

String Static Methods - indexOf()

```
public static void main (String[] args)
{ //main

    String phrase = "Mohawk College";

    //index numbers
    System.out.println( phrase );
    System.out.println("01234567890123" );

    //index number
    System.out.println( phrase.indexOf("w") );


} //main
```

```
Mohawk College
01234567890123
4
```

String Static Methods - lastIndexOf( )

```
public static void main (String[] args)
{ //main
    String phrase = "Mohawk College";

    //index numbers
    System.out.println( phrase );
    System.out.println("01234567890123" );

    //last index number
    System.out.println( phrase.lastIndexOf("o") );

} //main
```

```
Mohawk College
01234567890123
8
```

String Static Methods - substring( )

```
public static void main (String[] args)
  { //main
    String phrase = "Mohawk College";

    //index numbers
    System.out.println( phrase );
    System.out.println("01234567890123" );

     //substring
    System.out.println( phrase.substring(7) );
    System.out.println( phrase.substring(2,6) );

} //main
```

```
Mohawk College
01234567890123
College
hawk
```

String Static Methods - Combining Methods

```
public static void main (String[] args)
  { //main
    String phrase = "Mohawk College";

    //index numbers
    System.out.println( phrase );
    System.out.println("01234567890123" );

    //combining methods
    System.out.println(phrase.substring(2,6).length( ) );

  } //main
```

```
Mohawk College
01234567890123
4
```

Getting User Input into a Variable

```
import java.util.Scanner;

/**
 * This program asks the user to enter their name and age
 *
 * @author James Bond
 * @version v100
 */
public class AskForAge
{ //class

    public static void main (String[] args)
    { //main
        Scanner keybd = new Scanner(System.in);

        String name;
        int age;

        System.out.print("Enter your first name: ");
        name = keybd.nextLine();

        System.out.print("Enter your age " + name + ": ");
        age = keybd.nextInt();

    } //main
} //class
```

1. Attach the Scanner library
2. Create keybd object of type Scanner
3. Read a string than an integer.

```
Bluej: Terminal Window ...
Options
Enter your first name: Dave
Enter your age Dave: 29
```

USER Input should ALWAYS, ALWAYS, ALWAYS be done using a String variable, -- to prevent program crashes

...so the previous program should be written like this

```
import java.util.Scanner;

/**
 * This program asks the user to enter their name and age
 *
 * @author James Bond
 * @version v100
 */
public class AskForAge
{ //class

    public static void main (String[] args)
    { //main
        Scanner keybd = new Scanner(System.in);

        String name;
        int age;

        System.out.print("Enter your first name: ");
        name = keybd.nextLine();

        System.out.print("Enter your age " + name + ": ");
        age = keybd.nextInt();

    } //main
} //class
```

```
import java.util.Scanner;

/**
 * This program asks the user to enter their name and age/
 *
 * @author James Bond
 * @version v101
 */
public class AskForAge
{ //class

    public static void main (String[] args)
    { //main

        Scanner keybd = new Scanner(System.in);

        String name, s_age;
        int age;

        System.out.print("Enter your first name: ");
        name = keybd.nextLine();

        System.out.print("Enter your age " + name + ": ");
        s_age = keybd.nextLine();
        age = Integer.parseInt(s_age);

    } //main
} //class
```

```java
/**
 * This program asks the user to enter their name and age/
 *
 * @author James Bond
 * @version v101
 */
public class AskForAge
{ //class

    public static void main (String[] args)
    { //main

        Scanner keybd = new Scanner(System.in);

        String name, s_age;
        int age;

        System.out.print("Enter your first name: ");
        name = keybd.nextLine();

        System.out.print("Enter your age " + name + ": ");
        s_age = keybd.nextLine();

        try
        {
            age = Integer.parseInt(s_age);
            if(age > 0)
            {
                System.out.println("Your age number is " + age);
            }
        } catch (NumberFormatException ex)
        {
            System.out.println("Error: This is not a valid age!");
        }

    } //main
```

Data Validation

We always read data into a String variable from the user. This allows us do perform data validation on what we are given.