S8355: Java From the Very Beginning Part III- Exercises

Ex. 1 Adapting Command Line Arguments

In the previous exercise we looked at how to print out all the arguments passed to the program
In this exercise we are going to adapt this program to test if one of the many arguments passed in contain a specific value, which can be anywhere in the list.

We have just been looking at how we could use the collections classes. In this exercise we are going to use ArrayList.

Can you remember what the collection classes are? If not, you may need to look back at your notes from session 8355.

1) Open the **CommandLine.java** file which is in the **CommandLine** folder.
This follows on from what we did in Part II

2) Import the collection classes.
This is done by adding the following to the top of your program

```
import java.util.*;
```

3) Declare a ArrayList();
Just below the "public static void main……" add:

```
List theArguments = new ArrayList();
```

4) Remove the println statement inside the for loop, as it is no longer necessary
Delete the following:

```
System.out.println("Argument " + i + " = " + args[i]);
```

5) Inside the for loop we need to add every argument to the ArrayList
Inside the for loop, just below the for statement add:

```
theArguments.add(args[i]);
```

6) Print out a message if the arguments included the word "stop". HINT use the contains(..)
Just before the end of the main method add:

```
if (theArguments.contains("stop")) {
        System.out.println("it contains \"stop\"");
}
```

7) Save your program.

Now we are going to run the program with some arguments.

8) To attach arguments click the arrow on the "Run" icon  and select **Run**. A dialog box appears displaying the application's *runtime environment*. Ensure that **CommandLine** is highlighted (under the **Java Application** folder). If it does not exist, then select **Java**

Application and click **New**. A new runtime configuration will appear for the **CommandLine** application.

9) Click the **Arguments** tab and enter the following Albert Einstein quote into the **Program arguments** text area.

The important thing is not to stop questioning.

By entering information here, you are effectively appending to the Java runtime command line. This information will be passed to the application and placed in the args array.
Click **Run** to start running the application.

10) Check the console view and ensure that "it contains stop".

11) **Optional.**
Insert code just before the end of the main method to print out the last element of theArguments.

```
System.out.println("Last element: " + theArguments.get(theArguments.size() -1));
```

12) **Optional.**

Think about how you could do

```
List theArguments = new ArrayList();
if (theArguments.contains("stop")){
```

if you had an array rather than a ArrayList

Ex. 2 Javadoc

In this exercise we are going to add some Javadoc comments to the CommandLine program and then we are going to generate the JavaDoc for this program using Eclipse.

Can you remember what Javadoc is? If not, you may need to look back at your notes from session 8355.

1) Open the **CommandLine.java** file which is in the **CommandLine** folder.
This follows on from what we did in Part III Ex.1

2) Some of you will have already noticed that the comment at the top of the program is a Javadoc comment. We are going to add an author tag to this

```
/**
 * A Java application to check if the arguments contain a specific value
 */
```

becomes

```
/**
 * A Java application to check if the arguments contain a specific value
 * @author yourEmailAddress
 */
```

3) Generate Javadoc within Eclipse
- Click the Right Mouse button on **CommandLine.java** in the Package Explorer
- Select **Export**
- Select **Javadoc**
- Click on **Next**
- All the defaults are fine so just click **Finish**.

5) Look at the Javadoc.
The doc is in a directory called **doc** in the same project as **CommandLine.java**. To view the html pages all you need todo is:
- open the **doc** folder in the Package Explorer
- double click on **index.html**

S8355: Java from the very beginning Part III - Sample Solutions

Ex. 1 Command Line

```
import java.util.*;

/**
 * A Java application to check if the arguments contain a specific value
 */
public class CommandLine {

  public static void main(String [] args) {

    List theArguments = new ArrayList();

    if ( args.length > 0 ) {
      for (int i = 0; i < args.length; i++) {
        theArguments.add(args[i]);
      }
    }
    else {
      System.out.println("You did not provide any arguments" );
    }

    if (theArguments.contains("stop")) {
      System.out.println("it contains \"stop\"");
    }

    /* optional bit */
    System.out.println("Last element: " + theArguments.get(theArguments.size()));
  } // end of main method

} // end of class
```

To test the program, refer to the notes from the exercise.