Introduction to Mobile Device Programming

Lab Session 4

In this set of exercises it is assumed that you have Eclipse up and running and that you have created an appropriate Android Virtual Device in the same manner as in lab session 1.

Task 1

In this task you will develop an Android application which makes use of a number of "standard" widgets.

You are required to develop part of the interface to a mobile application for the Caledonian Pizza Company. The mobile application should run on an Android mobile device and should provide the following facilities.

Choice of crust type (1 only)

- Stuffed crust

  or

- Thin and crispy

Choice of toppings

- Mushrooms
- Sweetcorn
- Onions
- Peppers

Extra Cheese Yes/No (Default is No)

Users enter their email address as an identifier before making any choices. The application should contain a submit button which would be used to transmit the information to a "sever". For this example it is sufficient for submit button to display a toast message with the details of the pizza order.

You should make appropriate use of layout managers as you see fit and the interface should be optimised for portrait and landscape mode.

Task 2

The PullParser3 Project which was introduced and discussed in the lecture in week 3 carried out some basic parsing on the String which is shown below.

```
<WidgetCollection>
                <Widget>
                        <Bolt>M8 x 100</Bolt>
                        <Nut>M8 Hex</Nut>
                        <Washer>M8 Penny Washers</Washer>
                </Widget>
                <Widget>
                        <Bolt>M8 x 150</Bolt>
                        <Nut>M8 Hex</Nut>
                        <Washer>M8 Penny Washers</Washer>
                </Widget>
                <Widget>
                        <Bolt>M6 x 100</Bolt>
                        <Nut>M8 Hex</Nut>
                        <Washer>M8 Penny Washers</Washer>
                </Widget>
</WidgetCollection>
```

You will find the PullParser3 project in the Lecture section on GCULearn.

Your task this time is to add some additional behaviour to the PullParser3 application to allow you to practice parsing (analysing) the xml data. The additional behaviour that is required is to produce a Java class which will hold the xml information about a widget. This was discussed in the lecture. Every time a widget is parsed you application should create a new Java Widget object. This widget object should record information about the bolt, nut and washer.

```
public class Widget
{
        …. bolt;
        …. nut;
        …. washer;
}// End of class
```

The Widget class should have standard getters, setters and a toString() method as well. Once all the fields in the Widget are populated as part of the parsing process you should add the Widget object to a suitable Collection class object such as a linked list.

To test the working of your application you will need to display the content of the widget (use the toString() method) after you have created it. You will also need to test that you have added the widgets to the collection. To do this you will need to iterate through the collection at some point, pick out each widget and display the contents (you can do this using the toString() method again). You should make use of the Log.e statements to display your output.

Storing the data in this way as objects in a Java collection will facilitate future processing within the application. This is the approach that you will need to take in your assignment.