Lab 5 – Tide Table with a List View

CIS399, Android Application Development

Objectives: This lab is designed to give you practice:

- Developing a UI that uses a ListView
- Using a SimpleAdapter to load data into a ListView
- Parsing an XML file

Part 1: Do the textbook exercises shown below:

- 10-1, Review the News Reader app
- 10-2, (Optional) Work with asynchronous tasks (apply this in a future lab)
- 10-3, (Optional) Modify the News Reader app (none of our lab projects use RSS feeds)

Upload a text file to Canvas in which you will report, for each exercise above, whether you:

A. Followed all the steps shown in the book and successfully compiled and ran the program (where applicable).
B. Loaded the completed solution, experimented with the code, and ran the program (where applicable).
C. Read through the steps and inspected the relevant code without writing or running a program.
D. Didn't do any of the above.

Part 2: For this lab assignment you will create an app that displays tide predictions for a coastal location. You will need to download an annual tide prediction file for a US coastal location from the NOAA web site: http://tidesandcurrents.noaa.gov/tide_predictions.html.
For example, you could download the annual tide predictions for the Florence, OR USCG station: http://tidesandcurrents.noaa.gov/noaatidepredictions/NOAATidesFacade.jsp?Stationid=9434098.

Display the tide chart using an activity that derives from ListActivity with a TwoLineListItem layout with an adapter derived from BaseAdapter that supports fast scrolling and a section index. The list adapter should use a list or array of custom objects (instances of a class you define that holds tide predictions). The section index should show the month. The list should show the date and time for each high and low tide (usually 4 per day). When you click on a row, it should show the height of the tide in cm using a toast. Your app will use an XML annual tide prediction file (download it from the NOAA using the XML button).
Format your ListView as shown in the example below:

Example

List View:

 2015/12/31 Monday
 High: 02:56 AM
2015/12/31 Monday
Low: 08:30 AM
2015/12/31 Monday
High: 02:02 PM
2015/12/31 Monday
Low: 08:59 PM
2016/01/01 Tuesday   <-- Click here for toast
High: 03:29 AM
2016/01/01 Tuesday
Low: 09:13 AM
2016/01/01 Tuesday
High: 02:44 PM
2016/01/01 Tuesday
Low: 09:33 PM

Toast:

6.1 ft., 186 cm

Zip your project folder and upload it to Canvas.