

Lab 5 – Tide Prediction App 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 table using an activity with a ListView (or an activity derived from ListActivity). The list should show the date and time for each high and low tide (usually 4 per day). It should have:

1. A TwoLineListItem layout, or a custom layout with at least two TextViews.
2. Either one of these adapters:
 - a. An adapter derived from BaseAdapter. The list adapter should use a list or array of custom objects (instances of a class you define that holds tide predictions).
 - b. A SimpleAdapter
3. When you click on a row, it should show the height of the tide in either inches or cm using a toast.
4. Optional, extra credit: Fast scrolling and a section index. The section index should show the month.

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.