

Lab 7, Group B

Tide Prediction App Using a ListView and ArrayAdapter

CS235AM, Intermediate Mobile Application Development: Android

Objectives

This lab is designed to give you practice working with Android ListActivities (an Activity with a built-in ListView) and ListView Adapters. In particular you will get practice implementing:

- a ListActivity
- a custom row layout
- a data adapter for a ListView
- a row click-event handler
- fast scrolling and a section index

Part 1

Do the textbook exercises shown below:

- 10-1, Review the News Reader app
- 10-2, (Optional) Work with async tasks.
- 10-3, (Optional) Modify the News Reader.

Part 2, Requirements for Group B

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 an Oregon coastal location from the NOAA web site: https://tidesandcurrents.noaa.gov/tide_predictions.html?gid=1409
For example, you could download the annual tide predictions for the Florence, OR USCG station from this page: <https://tidesandcurrents.noaa.gov/noaatideannual.html?id=9434032>

Display the tide chart using an activity that inherits from *ListActivity* with a *SimpleListItem1* layout and with an adapter derived from *ArrayAdapter* that supports fast scrolling and a section index. 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 inches using a toast. Your app will use an XML annual tide prediction file. The XML parser is provided for you. Format your ListView as shown in the example below. (Format the text string that you put in each row so that it has two lines).

ListView layout:

```
Mon 2012/12/31
02:56 AM - High
Mon 2012/12/31
08:30 AM - Low
Mon 2012/12/31
02:02 PM - High
Mon 2012/12/31
08:59 PM - Low
Tues 2013/01/01 <-- Click here for toast
03:29 AM - High
Tues 2013/01/01
09:13 AM - Low
Tues 2013/01/01
02:44 PM - High
Tues 2013/01/01
09:33 PM - Low
-----
Toast:
6.1 ft.
```

Submission to Moodle

Beta Version

Post the following to the Beta + Code Review Forum:

- 1) A zip file containing your app's Visual Studio solution folder. (Make your solution smaller by deleting the *obj* and *bin* folders.) Or, optionally, a link to a repository containing your solution source code. You can put the link on the same document with the report on your exercise from part 1.
- 2) A copy of your lab instructions (so the lab partner who reviews your work will know what your requirements were).

Code Review

After completing a code review for your lab partner, upload it using the Code Review assignment link.

Production Version

1. Item 1 above, but revised as needed.
2. The code review of your work (the one done by your lab partner) with the second column ("Release") completed by you.