

## Lab 7, Group A

### Tide Prediction App Using a ListView and SimpleAdapter

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 indexer

#### 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)

#### Part 2

##### Requirements for Group A

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](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 custom row layout and with an adapter derived from *SimpleAdapter* 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 cm 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:

#### Example

List View:

**2012/12/31 Mon**  
High: 02:56 AM  
**2012/12/31 Mon**  
Low: 08:30 AM  
**2012/12/31 Mon**  
High: 02:02 PM  
**2012/12/31 Mon**  
Low: 08:59 PM  
**2013/01/01 Tues**  
High: 03:29 AM  
**2013/01/01 Tues**  
Low: 09:13 AM  
**2013/01/01 Tues**  
High: 02:44 PM  
**2013/01/01 Tues**  
Low: 09:33 PM

## **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.