Lab 4 – Tide Prediction App Using a ListView

CS235AM, Intermediate Mobile Application Development: Android

Introduction

This lab 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 row click-event handler
- fast scrolling and a section indexer
- a data adapter for a ListView
- a custom file parser that can populate a ListView Adapter with data parsed from a text (or XML) file.

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 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 from this page:
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 annual tide prediction file formatted as tab separated values (download it from the NOAA using the TXT button). Format your ListView as shown in the example below:

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 <-- Click for toast
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

Toast:

186 cm

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).

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.