

CS478: Software Development for Mobile Platforms

Project #2

Due time: 9:00 pm on 10/4/2016

Submit using Blackboard web site

Total points: 100

Instructor: Ugo Buy

TA: Venkat Sathyanarayanan and Pranjali Desai

For this project you will design and code a new Android app that implements the following functionality. The main activity in the app displays a grid. Each grid cell contains a thumbnail picture of a car (from outside the car) above the name of the car's manufacturer. For instance, a grid cell could contain a thumbnail showing a Honda Civic, above the name "Honda". Feel free to choose your images from pictures publicly-available (and not copyrighted or otherwise protected) on the Internet. Feel free to choose how to fit the pictures into thumbnails appearing in your grid view (e.g. whether to scale the picture or not, etc.) Make sure that thumbnails are separated by thin spaces (no more than 5 dp) uniformly on all four sides when the grid is displayed on a Nexus 5 device. Also, size the thumbnails appropriately, e.g., using 2 or 3 columns in portrait mode. You must include enough thumbnails to fill at least most of a Nexus 5's display with your picture grid (i.e., at least 6 cells if using two columns).

Each grid cell supports two kinds of functionality, depending on whether an app viewer performs a short vs. a long click on a cell. A short click brings up a new activity that shows the entire picture of the selected car on the entire device display. This picture must be a higher resolution and bigger than the thumbnail displayed earlier. The user can return to the grid view by selecting the "back" soft button on the phone. However, if a user clicks on the displayed picture instead, you must open a browser activity showing the web site of the car's manufacturer. For instance, if your app shows a picture of a Honda Civic, the app should bring up the Honda web page from the official Honda web site.

A long click on a grid cell brings up a "context menu" showing the following three options for the car under consideration: (1) View the entire picture (similar to a short click); (2) Show the official web page of the car manufacturer in a new activity; and (3) bring up a list containing the names and addresses of at least three car dealers for the selected manufacturer in greater Chicago area.

Implementation notes. For this project use a Nexus 5 device running Marshmallow (API level 23). Design your gridview in such a way that it will display optimally in portrait mode, and reasonably well also in landscape mode. You are not required to provide backward compatibility with previous Android versions or compatibility with other Android devices. Finally, make sure to use your RAM carefully: Never hold more than one of the larger pictures in RAM at the same time.

You must work alone on this project. Submit the entire Studio project as a zip archive using the submission link in the assignment's page on Blackboard. This archive should contain the apk executable that you generated when you tested your app on your Nexus 5 AVD. Also, make sure to include your first and last names in the manifest file of your app, perhaps as an XML comment. No late submissions will be accepted.