ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 6

Basic Instructions:

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1. In every file submitted you MUST place the following comments:
   a. Assignment #.
   b. File Name.
   c. Full name of all students in your group.
2. Each group should submit only one assignment. Only the group leader is supposed to submit the assignment on behalf of all the other group members.
3. Please download the support files provided with this assignment and use them when implementing your project.
4. Export your Android project as follows:
   a. From eclipse, choose *"Export…"* from the File menu.
   b. From the Export window, choose *General* then *File System*. Click *Next*.
   c. Make sure that your Android project for this assignment is selected. Make sure that all of its subfolders are also selected.
   d. Choose the location you want to save the exported project directory to. For example, your *Desktop* or *Documents* folder.
   e. When exporting make sure you select *Create directory structure for files*.
   f. Click Finish, and then go to the directory you exported the project to. Make sure the exported directory contains all necessary files, such as the .java and resource files.
5. Submission details:
   a. When you submit the assignment, compress your exported Android project into a single zip file. The format of compressed file name is InClassAssignment#.zip
   b. You should submit the assignment through Moodle: Submit the zip file.
6. **Failure to follow the above instructions will result in point deductions.**

In Class Assignment 6 (100 Points)

In this assignment you will make HTTP requests and parse JSON data. The Apple iTunes RSS feed URL will be used to retrieve a list of top grossing applications. The app will create a slideshow of retrieved application details. The app is composed of a single activity, namely MainActivity.

Important App Requirements:

1. Create a new android project called “In Class 6”.
2. The required Android Virtual Device (AVD) should have **minimum SDK version set to 14 and target SDK at least 17**. The app should display correctly on 3.2” QVGA (ADP2) (320x480: mdpi). Your assignment will not be graded if it does not meet these requirements, and you will not be granted any points on your submission.
3. You will be using layout files, and strings.xml to create the required user interfaces. The layout XML file can be modified through the raw xml, or through the GUI tools provided within eclipse.
4. All API calls, image downloading and decoding should be performed using a worker thread or (or AsyncTask) and your code should not block the main thread.
5. Your code should use standard naming conventions, such as, uppercase class names, and lower case variable/method names. Also your variable and method names should be descriptive of the data or action performed.

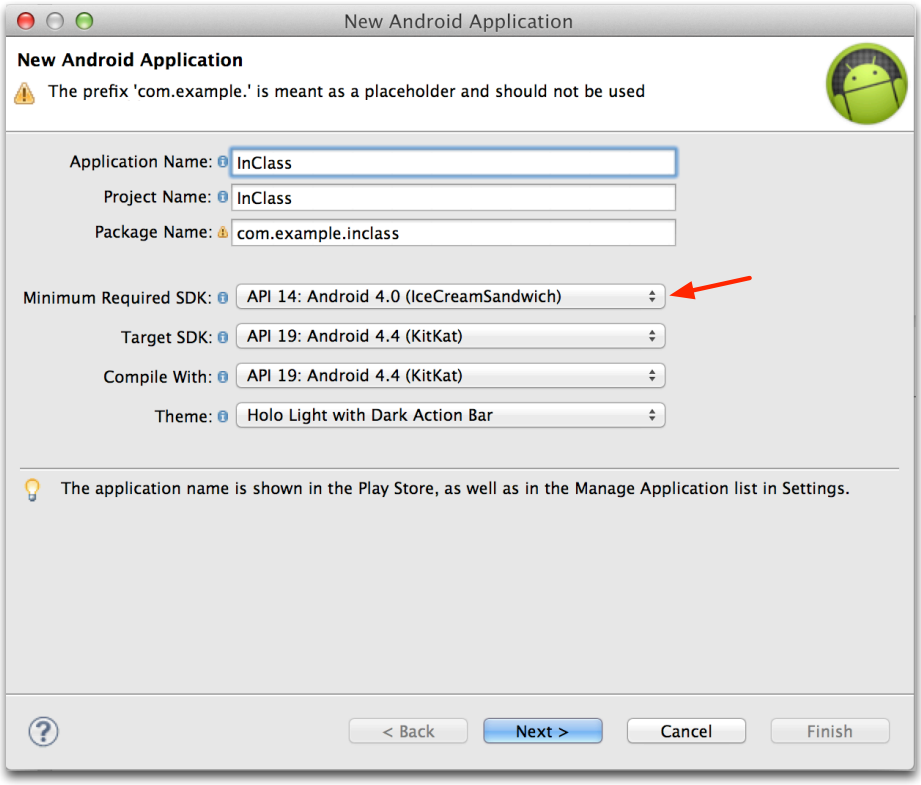
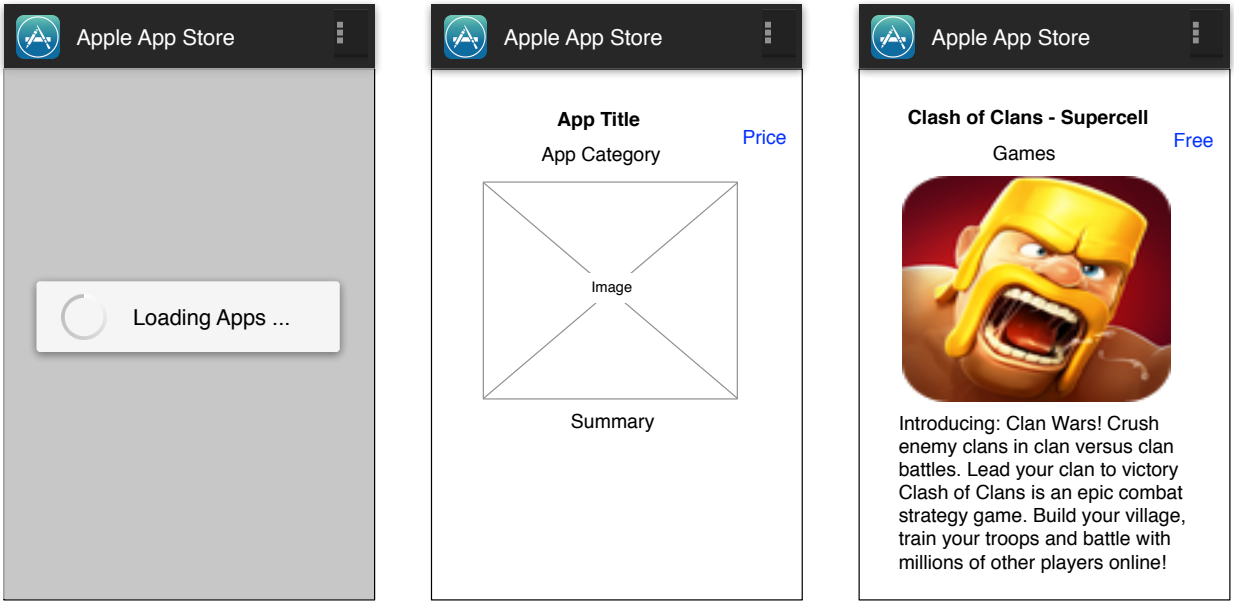


Fig 1. Choosing Minimum Required SDK to 14

Initial Setup and API Description

You should use the Apple api to retrieve the top 200 grossing applications in itunes. The rolling url will retrieve the JSON feed:

- http://itunes.apple.com/us/rss/topgrossingapplications/limit=200/json



(a) Loading JSON Data **(b) Activity Wireframe** **(c) Loaded App data**

Figure 2, Main Activity

Part 1: Parsing JSON (60 Points)

The Activity UI should match the UI presented in Figure 2. Below are the requirements:

1. Create a new android project called “In Class 5a”.
2. You should use a separate thread to perform data retrieval from the server and data parsing. Do not use the Main Thread to perform these tasks. Use an AsyncTask or a Thread/Handler. Make API calls using proper HTTP connections.
3. When the app is launched, the corresponding query request should be sent to the server to retrieve the JSON document. Implement a JSON Parser that parses the document and returns a list of applications.
4. Create an App class containing string variables title, category, price, summary, and imageURL.
5. Show a progress dialog during the loading and parsing of the JSON, and dismiss the progress dialog when these operations are completed, see Figure 2(a).

Part 2: Application Slide Show (40 Points)

The interface should be created to match the user interface (UI) presented in Figure 2. You will be using layout files, and strings.xml to create the user interface. Perform the following tasks:

1. The Main Activity should show the app title, category, image and summary, see Figures 2(b) and 2(c).
2. The applications should be presented in a slideshow, use a delay of 3 seconds

between each application display. The Main Activity should display the information for the first application, and after 3 seconds it should display the second application and so on.

3. The applications should be presented in descending order based on the app price.
4. You should use a separate thread to download the bitmap of application's image using the application's image URL. Do not pre download all the images, instead images should be downloaded only when needed.
5. For image caching you should use the Picasso library:
   a. Main Information: http://square.github.io/picasso/
   b. If the image is present in the cache it should be retrieved from the cache and displayed. If the image is not in the cache then it should be downloaded, displayed and loaded in the cache.