ITIS/ITCS 4180/5180 Mobile Application Development
In Class Assignment 4

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 4 (100 Points)

In this assignment you will get familiar with Android Concurrency and HTTP connections. You will develop an photo viewer application that downloads and displays online photos.

Important App Requirements:

1. Create a new android project called “In Class 4”.
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.

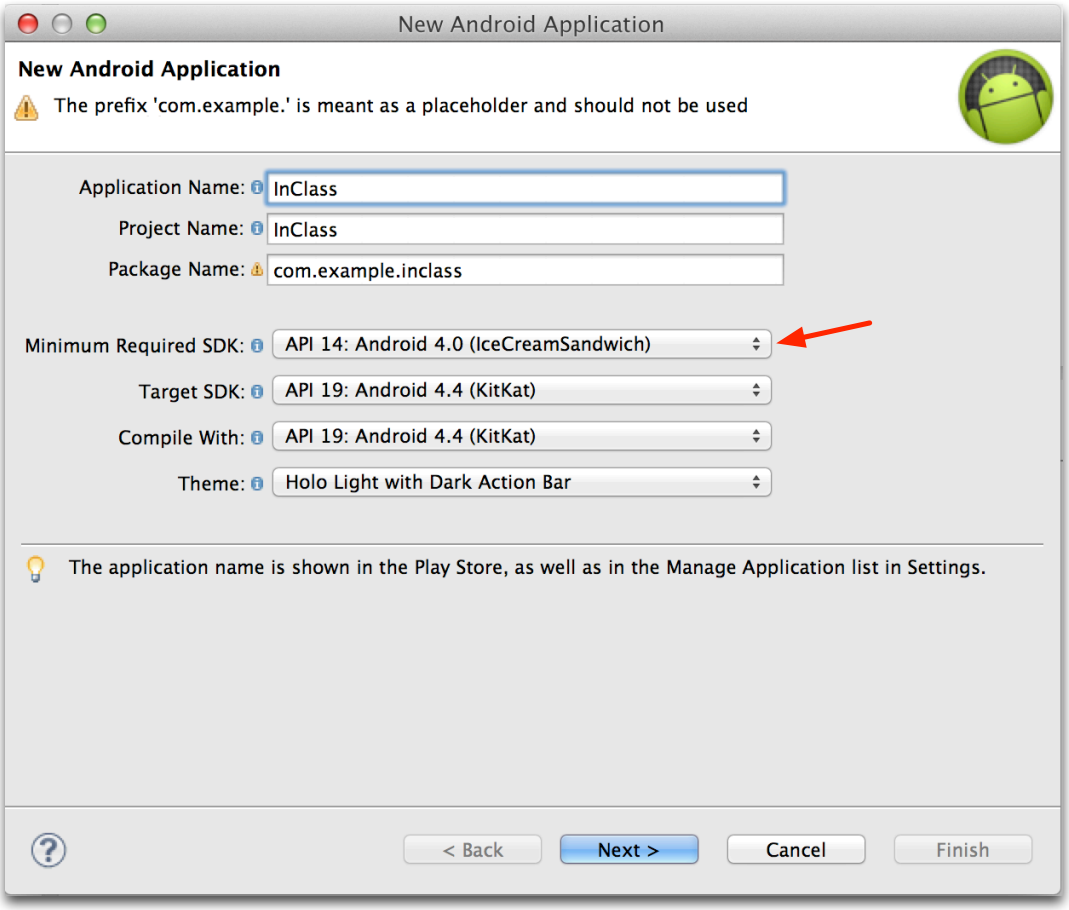

Fig 1. Choosing Minimum Required SDK to 14

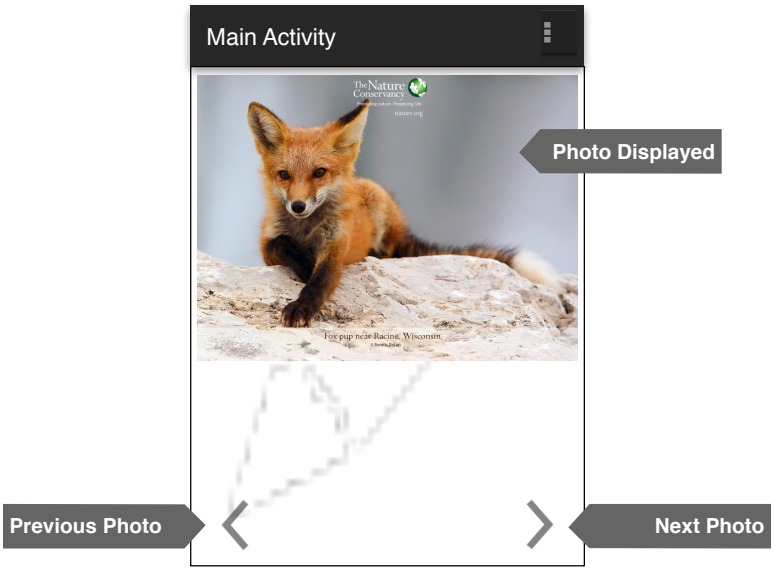

Figure 2, Application Wireframe

The application consists of a single activity that enables the user to download and view online photos. The interface should be created to match the user interface (UI) presented in Figure 2. You are required to perform the following tasks:

1. We created a web service that provisions photos, the web service can be accessed using the GET method. The service expects a GET parameter “pid”, which is the photo id. The service only has 20 photos, the pid range is [0,19]. To retrieve the photo with pid=0 you should call:
   - http://dev.theappsdr.com/lectures/inclass_http/index.php?pid=0
2. When the app first loads you should retrieve and display the first photo (pid=0).
3. You should use a child thread or AsyncTask to perform the loading of the image. Do not store the images loaded, simply download and display the retrieved images. All UI operations should be performed by the Main Thread.
4. Upon clicking the “Next Photo” icon, you should download the next photo. For example if the currently displayed photo has pid=5 then you should download and display the photo with pid=6. If the currently displayed photo has pid=19, which is the last photo, you should download and retrieve the photo with pid=0.
5. Upon clicking the “Previous Photo” icon, you should download the previous photo. For example if the currently displayed photo has pid=5 then you should download and display the photo with pid=4. If the currently displayed photo has pid=0, which is the first photo, you should download and retrieve the photo with pid=19.
6. While the photo is being downloaded you should display a Progress Dialog as indicated in Figure 3. The Progress Dialog should be dismissed when the worker thread or AsyncTask is done retrieving the photo.
7. Your application should download the requested image only if there is an established internet connection. If there is no internet connection you should display an Toast message indicting that there is no internet connection and do not attempt to send the HTTP request.

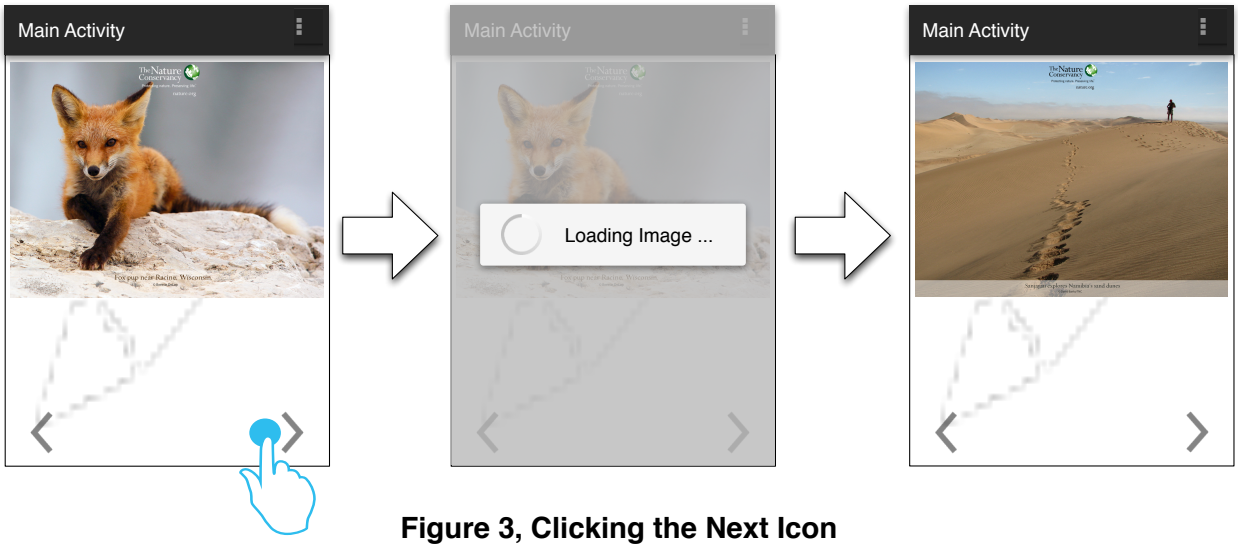

Figure 3, Clicking the Next Icon