ITIS/ITCS 4180/5180 Mobile Application Development
Homework 3
Date Posted: 02/07/2013 at 05:00pm
Due Date: 02/14/2013 at 11:55pm

Basic Instructions:

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. Your assignment will be graded for functional requirements and efficiency of your submitted solution. You will loose points if your code is not efficient, does unnecessary processing or blocks the UI thread.
4. Please download the support files provided with this assignment and use them when implementing your project.
5. 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.
6. 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 HW#.zip
    b. You should submit the assignment through Moodle: Submit the zip file.
7. Failure to follow the above instructions will result in point deductions.

Homework 3 (100 Points)

In this assignment you will develop a simple selection game for Android. The game is a puzzle played on a 5-by-5 grid with 25 square blocks labeled with pictures of different fruits and vegetables. The game indicates to the player a specific fruit/vegetable, and the player's goal is to find all the blocks that display the indicated fruit/vegetable. This is a single player game.

Notes:
1. The recommended Android Virtual Device (AVD) should have a Target **at least** Android 4.1, API Level 16, and should display correctly on 3.2" QVGA (ADP2) (320x480: mdpi).
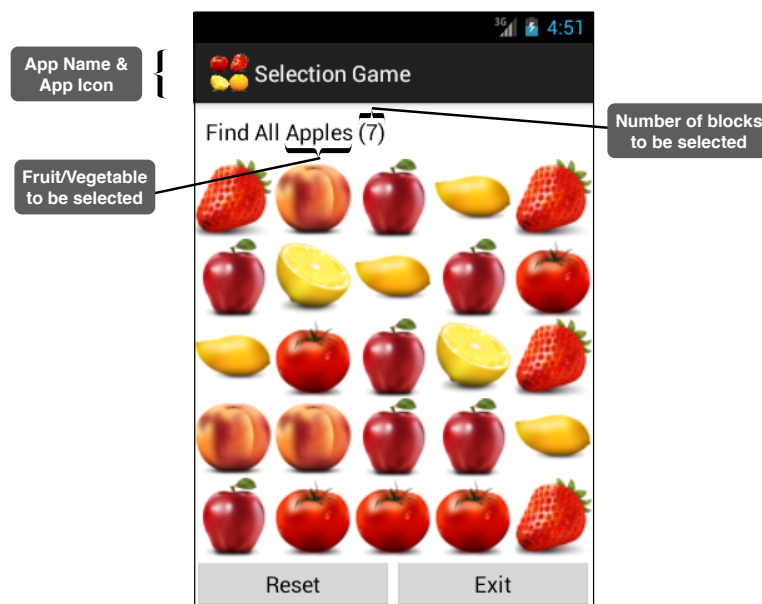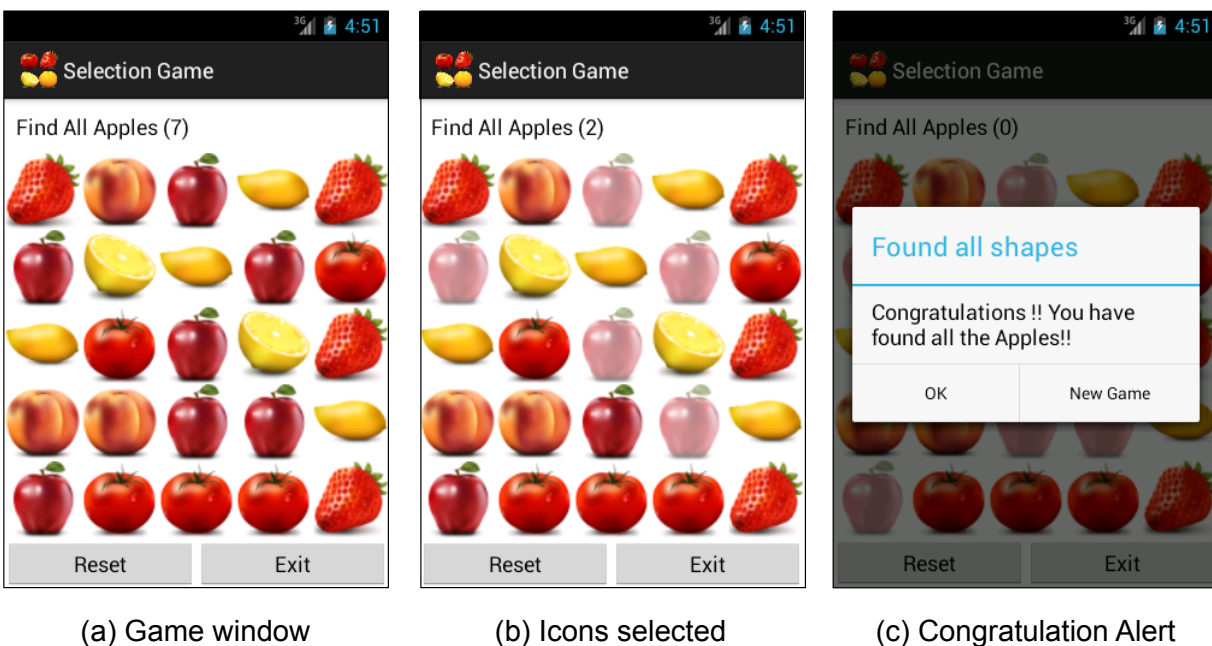

Figure 1, Application User Interface

The interface should be created to match the user interface (UI) presented in Figure 1. You will be using layout files, strings.xml, and drawable files to create the user interface. The layout XML file can be modified through the raw xml, or through the GUI tools provided within eclipse. To build the UI, please follow the following tasks:
1. Your application should have an application launcher icon, please select your launcher icon to represent your app. Set the application title to "Selection Game".
2. The string values used for the text labels, and button labels should be read from the strings.xml file and should not be hardwired in the layout file. Use the provided fruit and vegetable images[1].
3. **Game board initialization**:
    a. *Selecting the focus image*: randomly select one of the provided 6 images to be focus image that the user will be asked to find.
    b. *Deciding on the number of times the focus image is repeated*: randomly select a

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[1] These images were provided by http://artbees.deviantart.com

random number N in the range [1,8], display the focus image N times.

   c. *Deciding on which images to include*: the remaining 25-N positions should be filled by randomly selecting from the remaining images and should not include the focus image.

   d. *Deciding on the order of images*: the selected 25 images should be randomly placed on the 5x5 game board.

   e. The name of the focus image's fruit/vegetable should be indicated at top of the game layout. The number of focus images to be selected should be displayed beside the name of the focus image. See Figure 1.

4. When the player clicks on a focus image, it's alpha value should be reduced to indicate it is selected. Then decrement the number of focus images to be selected, and reflect that on the displayed count. See Figure 2(b).

5. Tapping on a non-focus image, or a previously selected focus image should have no effect on the game or on the images.

6. When the player selects all the focus images show an alert indicating that the user has found all the focus images. Your alert message should indicate the name of the focus image fruit/vegetable. See Figure 2(c).

   a. Clicking the "OK" button, should dismiss the alert.

   b. Clicking the "New Game" button, should dismiss the alert and create a new game board by reinitializing the game.

7. When the "Reset" button is clicked a new game board should be created by reinitializing the game.

8. The application should be destroyed if the "Exit" button is clicked.

    (a) Game window   (b) Icons selected   (c) Congratulation Alert

Figure 2, Application Screens