ITIS/ITCS 4180/5180 Mobile Application Development
Homework 2

Date Posted: 08/29/2014 at 21:00
Due Date: 09/05/2014 at 23:55

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. Please download the support files provided with this assignment and use them when implementing your project.
4. Export your 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 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 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.
6. **Failure to follow the above instructions will result in point deductions.**

Homework 2 (100 Points)

In this assignment you will build an Android application. You will get familiar with common Android visual components and how to interact with them, how to build dynamic layout and how to use setTag. You will build a Shopping cart price calculator.

Important App Requirements:

1. 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.**
2. All strings should be read from your strings.xml, all dimensions from dimens.xml, and all images from drawable-ldpi. 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.

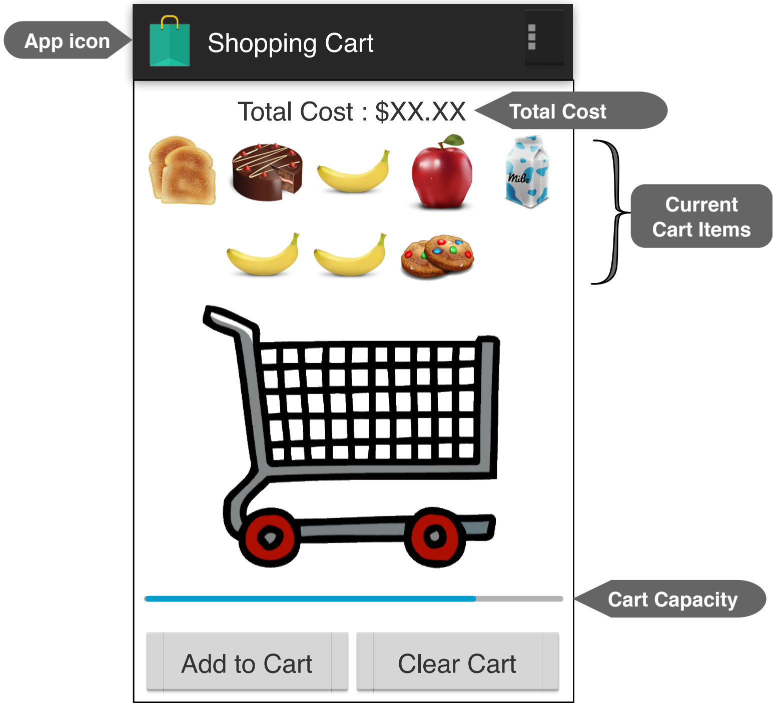


Figure 1, Application Wireframe

Shopping Cart Calculator

This is a calculator that calculates the total price of the items in the shopping cart, the app enables the user to add cart items, delete cart items and clear the shopping cart. You will learn how to dynamically (programmatically) add visual components to your activity according to user actions. Breakdown of assignment is as follows:

Layout (10 Points)

Your app layout should strictly follow the wireframes provided in this document. You free to use any type of layout components. You should setup the required layout properties to ensure that objects are displayed as required. The provided support files include all the required images. The cart's total cost is displayed at the top of the app, the images of the current items in the cart are displayed, and the cart capacity (number of items in the cart) is displayed at the bottom of the cart as a progress bar. The "Add to Cart" button enables adding new items to the cart, and the "Clear Cart" button enables clearing all the cart's contents. An empty cart layout is shown in Figure 2.

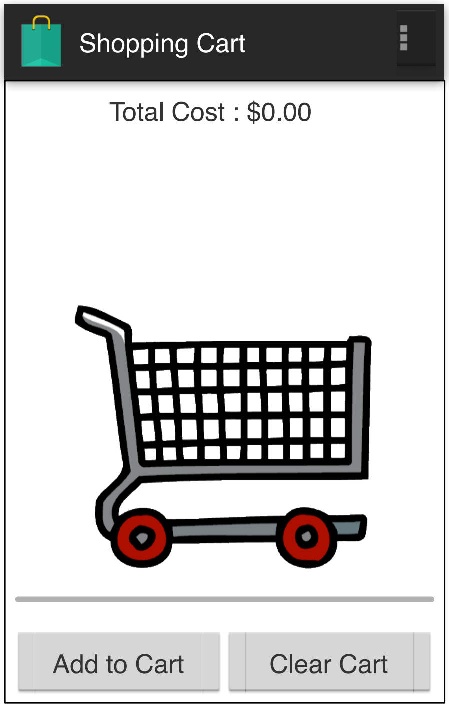


Figure 2, Initial empty cart.

Item	Price
Apple	$1.25
Banana	$0.70
Cake	$10.5
Cheese	$4.55
Cookie	$3.99
Milk	$2.95
Toast	$1.99

Table 1, Items unit prices

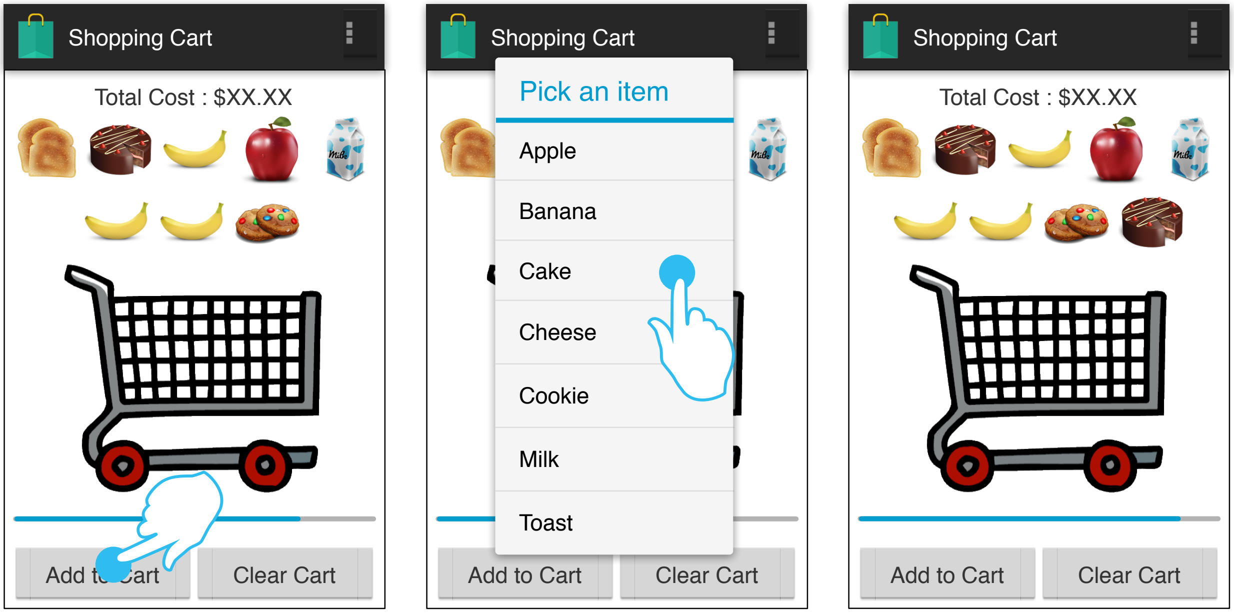
Add Item to Cart (50 Points)

Clicking "Add to Cart" button should perform the following:

- The cart has a maximum capacity of 10 items, if the user tries to add more items the app should not allow the addition of any new items and should display the following Toast message: "Maximum Cart capacity !". Otherwise, perform the following steps:
- Display an alert dialog displaying a list of items, as shown in Figure 3(b). For information on using alert dialog check http://developer.android.com/guide/topics/ui/dialogs.html
- When the user selects an item:
    1. Update the interface to display the icon for the selected item, as shown in Figure 3(c). The selected item should be added to the interface dynamically, i.e. ***your layout should not have the visual component that corresponds to the item at compile time. it should be added at run time***. The Items should be **centered** horizontally relative to the cart.

2. Update the total cost based on the selected item price, and update the current cart capacity.

- Note that there are two rows of cart items, you should fill the upper row (5 items), then start adding items to the lower row, as shown in Figure 3(c).



(a) Tapping add cart **(b) Alert Dialog item list** **(c) Item added to cart**

Figure 3, Adding an item to cart

Remove Item from Cart (30 Points)

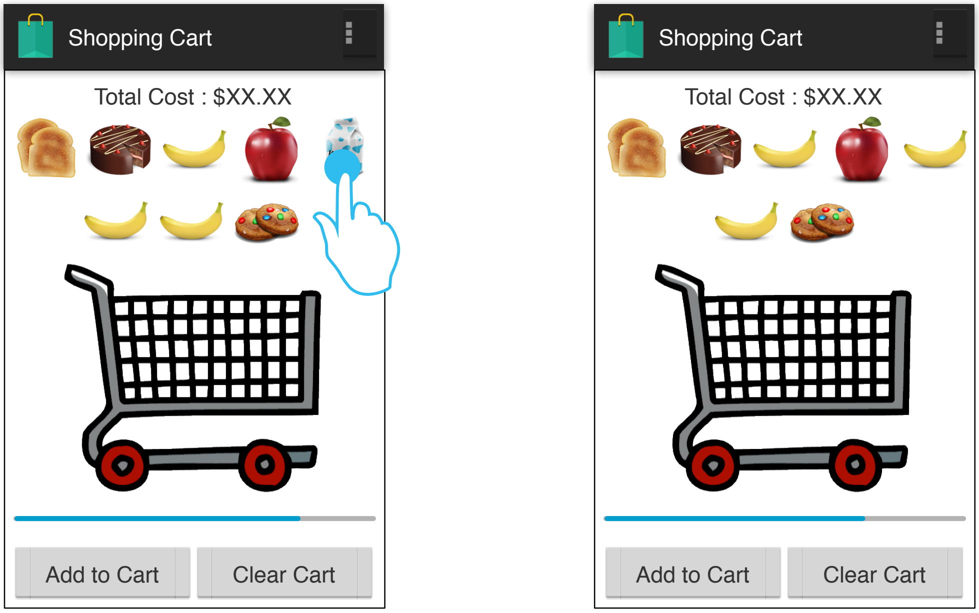
Clicking any current cart item should do the following :

- Remove the item from the app layout. Update the total price and capacity to reflect the removal of the selected item from the cart. (You can use tags or any other approach to maintain information in the UI component.
- Note that there are two rows of cart items, the lower row is allowed to have items only if the top row is full (5 items). Deleting an item in the top row should push the left most item in the lower row to the top row to maintain this property. Please check Figure 4(a) and 4(b).

Clear Cart (10 Points)

Clicking the “Clear Cart” button should do the following:

- Clear (Delete) all the current items from the app layout.
- Set the total cost to $0.00 and reset the current cart capacity progress bar to 0.



(a) Clicking an item

(b) Cart updated

Figure 4, Deleting an item