ITIS/ITCS 4180/5180 Mobile Application Development
Final Exam
Date Posted: 12/14/2015 at 20:00
Due Date: 12/14/2015 at 22:30

Basic Instructions:

1. This is the Final Exam, which will count for 15% of the total course grade.
2. In every file submitted you MUST place the following comments:
   a. Your Full Name.
3. This Final exam is an individual effort. Each student is responsible for her/his own Final and its submission.
4. Once you have picked up the exam, you may not discuss it in any way with anyone until the exam period is over.
5. During the exam, you are allowed to use the course videos, slides, and your code from previous homeworks and in class assignments. You are NOT allowed to use code provided by other students or from other sources.
6. Answer all the exam parts, all the parts are required.
7. Please download the support files provided with the Final and use them when implementing your project.
8. 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.
9. Export your Android project and create a zip file which includes all the project folder and any required libraries. The file name is very important and should follow the following format: **Final.zip**
10. **Failure to do the above instructions will result in loss of points.**
11. **Any violation of the rules regarding consultation with others will not be tolerated and will result disciplinary action and failing the course.**

Final Exam (100 Points)

In this assignment you will develop a Christmas Gift List App. The App enables tracking Christmas gift purchasing by quickly entering them into the app. It also enables setting gift budget for each person you plan on buying gifts for. This app will basically focus on UI manipulation and using parse.com to store and retrieve information.

Initial Setup

1. You should create a parse application. This app does not require user login and should be setup to use an anonymous user which is offered by parse.com. Check the documentation at https://www.parse.com/docs/android/guide#users-anonymous-users
2. All the data for this app should be stored and manage by parse.com
3. Import the provided CSV file "Gifts.csv" into separate class on parse.com, using the parse.com import feature. This file contains the list of possible gift information that should be used for this app.

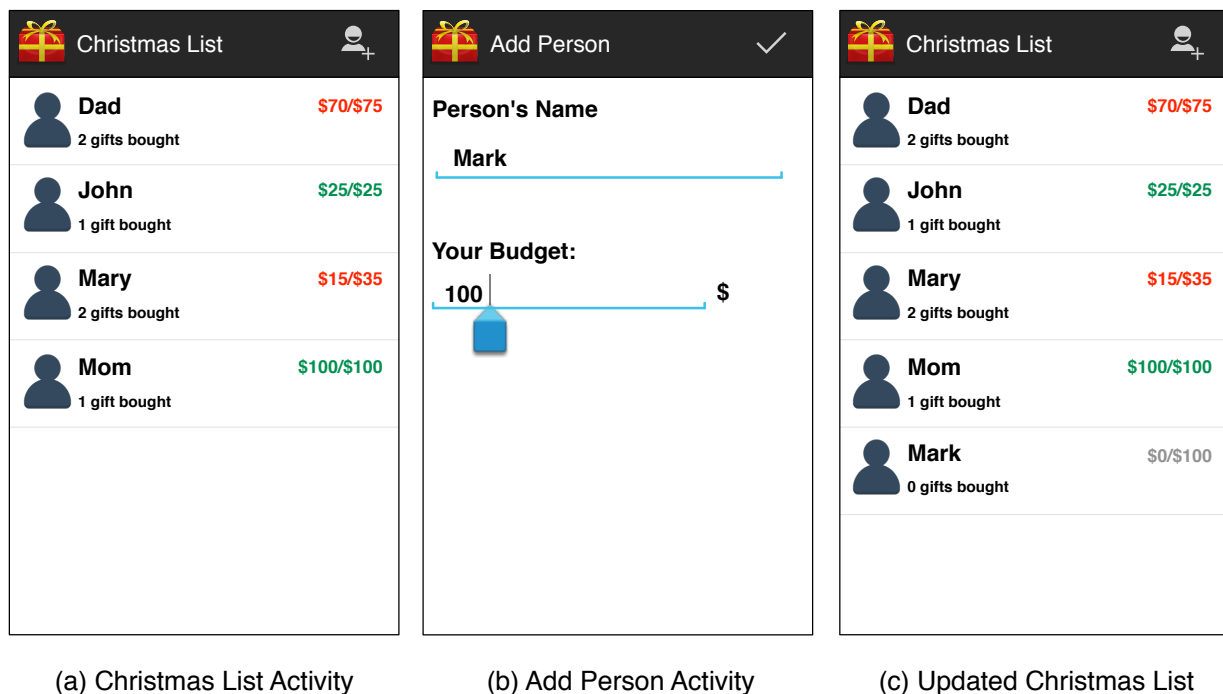| (a) Christmas List Activity | (b) Add Person Activity | (c) Updated Christmas List |

Figure 1, Christmas List and Add Person Wireframes

Part A: Christmas List Activity (30 Points)

This activity shows a summary of your Christmas list by displaying people you are planning to buy gifts for and the progress for each person. As shown in Figure 1(a).
1. This should be the launcher main activity that should be displayed when the application starts.
2. The person information should be stored and retrieved by using parse.com. Do not use the User class provided by parse.com instead create class called Person class on parse.com to store the person information.

3. Retrieve the persons' information from parse.com and display this information in a ListView. Each list item should show the following:
   a. Person icon, which is a simple image that is provided in the support files.
   b. Person's name.
   c. Budget: Which is displayed as two numbers, the first being the amount spent so far on the current person and the total amount budgeted for the current person. The color of this item should be grey if no items were bought, red if the amount spent is less than the total budgeted amount, and green if the amount spent is equal to the total budgeted amount. See Figure 1(c).
   d. The number of gifts bought for the person.
4. The ListView row items should be sorted by person name in ascending order.
5. Tapping the Add Person menu icon, should start Add Person Activity, which is displayed in Figure 1(b).
6. Tapping a person row item, should start the Gift List Activity, and pass it the required information in order to display the gifts purchased for the selected person.

Part B: Add Person Activity (15 Points)
This activity enables the user to add a new person that they would like to buy gifts for and to set the budget limit for this person, see Figure 1(b). The requirements are as follows:
1. Tapping the check mark menu item should:
   a. Check that the user has entered a person name, if not display a toast message indicating that the person name is required.
   b. Check that the user has entered a valid positive budget value for the current person. If not, display a toast message indicating that a valid budget value is required.
   c. If the user has entered a person name and a valid budget then store this information on parse.com. Then the Add Person Activity should be finished and the app should navigate back to the Christmas List and display the updated list including the recently added person entry. See Figure 1(c).

Part C: Gift List Activity (30 Points)
This activity displays the gifts bought for the person selected in the Christmas List Activity, see Figure 2(a). The requirements are as follows:
1. When the user clicks a person row item in the Christmas List Activity, this should start the Gift List Activity and should display the gifts bought for the selected person. This information should be retrieved from parse.com.
2. The Activity title should be set to the selected person name, as shown in Figure 2(a).
3. The gifts list should be displayed in ascending order by the gift price.
4. Tapping the Add Gift menu icon (plus icon), if the person's remaining budget is more than $0 then start the Add Gift Activity, else show a toast message indicating that the remaining budget is $0, see Figure 2(b).

Part D: Add Gift Activity (25 Points)
This activity displays the list of possible gifts for the person selected and enables the user to add a gift to the selected person's gifts list. The requirements are as follows:

1. The activity should retrieve the list of possible gifts for the selected person from parse.com. The possible gifts are gifts priced less than or equal to the remaining budget for the selected person.
   a. For example, if the set budget for the selected person is $100, and so far the user has spent $68 on gifts for the selected person. Then the remaining budget for the current person is $32, and the list of possible gifts should only display gifts priced $32 or less. For example Figure 2(b), show the list of gifts priced less than or equal to $32.
2. The gifts list should be displayed in ascending order by the gift price.
3. When the user clicks on a gift row item, this should add the selected gift to the current person's bought gifts. Then finish the Add Gift Activity, which should return to the Gift List Activity. Upon returning the to the Gift List Activity the gift list should be updated to show the updated list of gifts bought for the selected person, which should include the newly added gift.

(a) Gift List Activity   (b) Add Gift Activity

Figure 2, Gift List and Add Gift Wireframes

Grading Key:

Part A - Christmas List Activity: (Total 30 Points)
- (5 Points) : List correctly retrieved from parse.com
- (5 Points) : The custom adapter is implemented to display the list row items.
- (5 Points) : The row items are displayed in ascending order by person name.
- (5 Points) : The budget numbers and gift count information are displayed correctly for each list item.
- (5 Points) : The budget color code is correctly implemented
- (5 Points) : Implements the add person menu item and correctly opens the Add Person Activity when clicked.

Part B - Add Person Activity: (Total 15 Points)
- (5 Points) : Performs input validation and displays the correct error message when input is not correct.
- (5 Points) : Implements the submit menu item and stores the person on parse.com and handles errors.
- (5 Points) : Upon successful storing of the Person the activity finishes and refreshes the list in the Christmas List Activity.

Part C - Gift List Activity: (Total 30 Points)
- (5 Points) : List correctly retrieved from parse.com
- (5 Points) : The custom adapter is implemented to display the list row items.
- (5 Points) : The row items are displayed in ascending order by gift price.
- (5 Points) : Implements the add gift menu item and correctly opens the Add Gift Activity when clicked.
- (5 Points) : Performs validation when the add gift menu item is clicked and displays error toast message when the person has $0 budget.
- (5 Points) : The activity title is set to the person's name

Part D - Add Gift Activity: (Total 25 Points)
- (5 Points) : List correctly retrieved from parse.com
- (5 Points) : The list items are correctly filtered based on the person's remaining budget
- (5 Points) : The row items are displayed in ascending order by gift price.
- (5 Points) : Upon clicking on an item it is correctly stored to the person's gift list
- (5 Points) : Upon successful storing a gift to the person's gift list the activity finishes and refreshes the list in the Gift List Activity.