

Assignment #3

Mobile Development

Due: November 19, 2017

Assignment #3 and #4 will form a single large application. Please view this assignment as Part 1. The application we will be building is called a Personal Data Assistant. In this assignment, we will build the general structure of the application and some of the easier features. We will continue developing this application in assignment #4 adding advanced capabilities. If, for some reason, you cannot complete assignment #3 a solution will be provided before we start assignment #4. Anyone can use the provided solution as their base for assignment #4, or they can use their own assignment #3 as the base for assignment #4. Assignments #3 and #4 will have an optional Glory section for those of you who are bored and want something a little more challenging.

Our PDA (Personal Data Assistant) will have the following features: (1) A to-do list by project, (2) work hours by project, (3) an expense logger by project, and (4) an invoice creator by project and date range.

In assignment #3, we are only creating the user interface. This includes the Views and Controls, possibly some Models. In assignment #4 we will create the database and reports. In assignment #4 we will be saving the data we enter into the SQL Lite database. Assignment #3, however, must use Activities, Fragments, the Action Bar, Menus, Graphics, and Audio.

Use the JukeBox and ToDo apps we saw in class as example programs for this assignment. Take care to make your app look professional. I give you freedom to decide the look and feel of many parts of your app, however I will insist on certain things.

Your app will begin by presenting a Welcome screen that displays the title of your application, a picture, and a button that says Enter. Pressing the Enter button displays the main screen. The main screen will use graphic buttons and the Action Bar menu. The buttons will say: TO-DO, WORK HOURS, EXPENSES, INVOICE. The menu will have: SETTINGS, HELP, and EXIT. Pressing any of the graphic buttons or menu items will switch to another Activity (except for EXIT). Each button activates its own Activity. In the case of the EXIT menu option, a popup prompts the user by asking "Are you sure?". The user must answer YES to exit or NO to stay in the program. The Action Bar menu is persistent throughout the entire program. All Activities will have the same Action Bar menu items. You must define this menu only once and share it with all the Activities, however, the HELP option will be sensitive to the currently active Activity, displaying help for that View.

Described here is every button and menu option:

TO-DO

This activity uses three fragments. The activity is divided into two areas: the top half of the screen and the bottom half of the screen. In the top half of the screen we always see the same fragment, the "top fragment". Depending on what happens in the top fragment the bottom part of the screen displays one of two additional fragments. The top fragment displays a dropdown list and a text box, plus three buttons: New Project, New Task, and Main Menu.

The dropdown control contains the names of all the projects. If the user selects a project from the list the bottom fragment displays the tasks belonging to that project (for ass#3 it only switches to the correct fragment). The bottom fragment is the Task List fragment.

Pressing the New Project button, changes the lower fragment to the Create Project fragment. A textbox and a single button labeled Created Project is present. The user will enter the project name and then press the button to create that project, if it does not already exist. Then the fragment switches to the Task List fragment showing the tasks for that newly created project (which should be empty since it was newly created).

The Task List fragment displays a list of checkboxes that are either checked or unchecked by the user. Beside each checkbox is the task and a Delete button that the user can use to remove that task from the list. For ass#3 make this functional. In ass#4 you will save and restore this from the database.

The New Task button, from the top fragment, when pressed, will add the text from the textbox into the Task List of the project currently selected in the dropdown.

Pressing the Main Menu button, from the top fragment, switches the Activity returning the user to the main menu Activity. In ass#4 you will need to make sure all the data is saved and database is closed.

WORK HOURS

Think of this Activity as being similar to an employment punch-in punch-out program, but instead of punching in you are simply recording the time after you finished some task.

This Activity is a single screen populated by a dropdown, a textbox, a start time control, an end time control, a list box, a button labeled Record Time, and a button labeled Main Menu. The dropdown is populated by the projects created from the To Do activity. The list box is populated by the hours recorded for the selected project. Selecting a project from the dropdown automatically displays the hours associated with that project in the list box. The user adds new records to the list by selecting a start time / date and an end time / date and then pressing Record Time. The user can record hours multiple times (multiple records). The textbox is the description of the work performed during that time period.

Pressing the button Main Menu returns the user to the main menu activity.

We won't implement a delete button.

In ass#3 you are only making the View functional. In ass#4 you will be building the database and populating the controls from the database.

EXPENSES

The EXPENSES feature is like WORK HOURS. I will not repeat the description, see above.

Instead of start and end times, the activity displays a textbox for the description of the expense and a textbox for the expense amount. The expense amount must be a positive real number.

INVOICE

The Invoice feature is made from two Activities. The first activity is a form asking the user to select a project from a dropdown, a date range (start date to end date, no hours), and a button labeled Create Invoice. The dropdown displays the project names created from the To Do List activity. When the Create Invoice button is pressed, the application switches to the second Activity.

The second Activity is the invoice report. Design a professional looking invoice. For assignment #3 the application simply switches to the second activity. In assignment #4 the code for generating the report will be developed.

SETTINGS

Is empty for now

HELP

Is a single page that displays help to the user for the current activity. The information displayed in the help screen is sensitive to the feature the user is in.

GLORY SECTION

This section is optional. You do not need to do it. It is provided for those students who want to do more. These glory options are not for points. They are for bragging rights only. You do not need to do all the glory options, just the ones you like. Here are the options you can add to this assignment:

- For the To Do List, ordering your to-do items is useful, so provide a way for the user to be able to move items up & down.
- For Work Hours, provide a way the user can generate a text file reporting on the hours they worked for a particular project.
- For Work House, create an additional report that when the user does not provide a project name it generates a report sorting all the project names and displaying their total hours per project.
- For Invoice, provide a way to display a bar graph reflecting the monthly sales total for a period of time.

GRADING

This assignment is out of 20 points

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|------------|---|---|---|-------------------------------------|
| To Do | . | . | . | . 3 points |
| Work Hours | . | . | . | . 3 points |
| Expenses | . | . | . | . 3 points |
| Invoice | . | . | . | . 5 points (3 points for bar chart) |
| Settings. | . | . | . | . 1 point |
| Help | . | . | . | . 3 points |
| Exit | . | . | . | . 2 points |