



Tech Lab 02 - Contact Book

Introductions

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Overview

- Second in a series of four
 - Session 1 - Basic Introduction
 - Session 2 - Simple Contact Book
 - Session 3 - Simple Game
 - Session 4 - Interface with Twitter
- All sessions will build on previous material
- All materials and source code available on GitHub @ <https://github.com/swcguild/MobileMonday>

Objectives

- Build a UI with Fragments and FragmentTransactions
- Understand how to communicate between Fragments and Main Activity using callbacks
- Understand how to save application state when phone configuration changes
- Define and apply styles to the UI
- Create and manipulate a SQLite database
- Create and use asynchronous tasks

Assumptions

- Java SDK and Android Studio are installed and configured
- You have gone through the material for Tech Lab 01 (or equivalent)
 - Available on GitHub @ <https://github.com/swcguild/MobileMonday>

Project Creation

- File → New Project...
- Application Name - ContactBook
- Minimum SDK - IceCreamSandwich
- Add Blank Activity
- Configure Activity - Use defaults
- Display new project

Approach

- This application is too big to live code in one session
- Instead we'll look at the code for the completed application in the following order:
 - UI Layouts and Resource Files
 - Java classes
 - Database helper class
 - UI Fragment classes
- The notes go through UI creation in some detail

String Resources

- strings.xml contains String resources that can be used throughout the app
- It is considered best practice to use String resources rather than to hard code values

Custom TextView Border

- Create a file called `textview_border.xml` in the **drawable** folder
- TextView components do not have a border by default
- This file allows us to apply a border to our TextView components

Custom Styles

- The file **styles.xml** contains custom styles for our application:
 - Theme for the entire app
 - Theme for Labels
 - Theme for TextView components

Main Activity Layout

- activity_main.xml defines our 'fragment container'
- This layout just acts as the host container for the screens of our app

Details Layout

- fragments_details.xml defines the layout for displaying a single contact
- Contains fields to display all properties of a contact
- Contains a button that allows the user to return to the Contact List screen

Add/Edit Layout

- `fragment_add_edit.xml` defines the layout for displaying the form for adding/editing a contact
- Has entry boxes of all contact fields
- Has a Save button

Option Menu Items

- Define the following:
 - Add
 - Edit
 - Delete

Java Classes

- DatabaseConnector
- DetailsFragment
- AddEditFragment
- ContactListFragment
- MainActivity

DatabaseConnector

- Helper class for interacting with the database
- Uses a SQLiteDatabase object
- Contains a nested class to help with opening and creating the database

DetailsFragment

- Responsible for displaying one contact
- Contains menu items that allow the user to edit or delete the contact
- Defines DetailsFragmentListener interface
 - Callback methods
 - These methods are implemented by MainActivity
- Defines an AsyncTask for retrieving the contact from the database

AddEditFragment

- Allows the user to create new contacts or edit existing contacts
- Contains logic for the Save button
- Defines AddEditFragmentListener
 - Callback methods
 - These methods are implemented by MainActivity
- Defines AsyncTask for saving contact information to the database

ContactListFragment

- Responsible for displaying a list of all contacts in the database
- Contains a menu item that allows the user to add a contact
- Defines ContactListFragmentListener
 - Callback methods
 - The methods are implemented in MainActivity
- Defines AsyncTask for retrieving all contacts from the database

MainActivity

- Implements all of the Listener interfaces defined in the Fragment classes
 - These methods link button clicks to logic in the Fragment classes
- Manages the display of the various Fragment layouts

Future Sessions

- Session 3: March 23rd, 2015
 - Simple Game
- Session 4: May 11th, 2015
 - Connect to Twitter