Mobile Application Development

Assignment 2

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GITHUB REPO:
https://github.com/xVolkov/AddressFinderApp.git

Interactions

- The MainActivity has a button to open files containing latitude/longitude pairs and read the file's content to have it converted to addresses later on.
- The Conversion functionality (associated with the Main Activity) converts latitude/longitude coordinates to addresses and displays the results.
- The Main Activity allows users to query addresses which are stored in the application's database.
- The MainActivity interacts with the DatabaseManager using an intent that is triggered when the user clicks the Database Manager button.
- The DatabaseManger activity manages database entries and interacts with the EditDataItem activity to add, edit, or delete data entries.

Layouts

Main Activity Layout (activity_main.xml):

- A LinearLayout is used as the root layout to have the layout elements organized in a vertical manner
- At the top, the title of the application is displayed, then a "Select File" button and down below that a "Database Manager" button to access the application's database
- I used layout visibility properties to hide and show different layout elements depending on the user's actions

Database Activity Layout (activity_database.xml):

- This layout contains all elements used in the database manager screen and it is organized in the vertical manner as well
- The layout has a title, the list of data entries in the database (ListView), and buttons for adding a new data entry, deleting all data, and returning to the main activity.

Edit Data Activity Layout (activity_edit_data.xml):

- This layout contains all elements shown when the user clicks on one of the data entries in the database
- The layout contains TextViews displaying different information about the selected data entry (ID, address, latitude, longitude), also the layout has EditText fields where the user can edit the selected data entry. Down below that, there are buttons for saving/deleting the data entry, and a back button that sends the user to the previous screen.

Views

TextView:

- TextViews are thoroughly used throughout the application for displaying dynamic changing information (query results), and also static information such as labels and titles.

Button:

- Buttons have been used for user interactions such as selecting a file, converting coordinates to addresses, querying an address from the database, adding new database entries, and saving/deleting data entries.

EditText:

- EditTexts are used to take the user's input when querying for an address in the database, and when editing a data entry in the database.

ListView:

- A ListView is used in activity_database.xml to show all database entries in a scrollable window to have the user go through all data entries and select whichever one they want to edit/delete.

Intents

Opening a File with Coordinates:

- At the MainActivity screen, when a user clicks the "Open Lat/Long Pairs File" button an intent is used to open the file picker launcher which sends the user to the cellphone's file explorer where the user can choose a file.

Navigating to the Database Activity:

- At the MainActivity screen, if the user clicks the "Database Manager" button an intent is triggered and then the user is sent to the activity_db_manager screen (layout) where they can view all data entries in the database, and also edit/delete any of the database entries.

Editing or Saving Database Records:

- If the user clicks on any of the data entries in the database manager, an intent is user to send the user to the data editor activity. Also, when the user clicks either the "Save" or "Delete" buttons, an intent is used to access the database helper and save changes/delete data.