GOOGLE SUPPORTED VIRTUAL INTERSHIP PROGRAM

PROJECT REPORT

PROJECT TITLE:

BUILD A GROCERY ANDROID APPLICATION

BY:

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Supported by Google Developers & Kotlin

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GROCERY APPLICATION

1. INTRODUCTION

1.1 Overview

In today's hectic lifestyle, it is difficult for users to remember every item that they want to buy, and they frequently can't recall their required necessities, so with the assistance of this app, users can keep track of the items that they need to buy. Furthermore, after purchasing the items, users have the option to delete them from their records.

1.2 Purpose

This project is created in Android Studio using the Kotlin programming language.
The main goal of this project is to list the items so that when users go to grocery stores, they do not forget their items, and this grocery application also helps users deal with their day-to-day chaos more easily. To increase realism, this application allows the user to modify items within the record at the same time as needed.
The secondary goal of this application is to create a user-friendly grocery app that is simple to use.

2. LITERATURE SURVEY

2.1 Existing problem

Some people consider shopping to be an important part of their lives, while others do not consider it at all. This comparison reveals people's shopping difficulties. People usually go to supermarkets, shopping malls, and other places and spend many hours shopping for necessities before returning home. However, after some time has passed, they realize that they have either forgotten to purchase some necessary items or have purchased something that is not required. These are some of the issues that users frequently face, which either frustrate them or cause them to return to the supermarket and do their shopping again, adding to their workload and wasting valuable time.

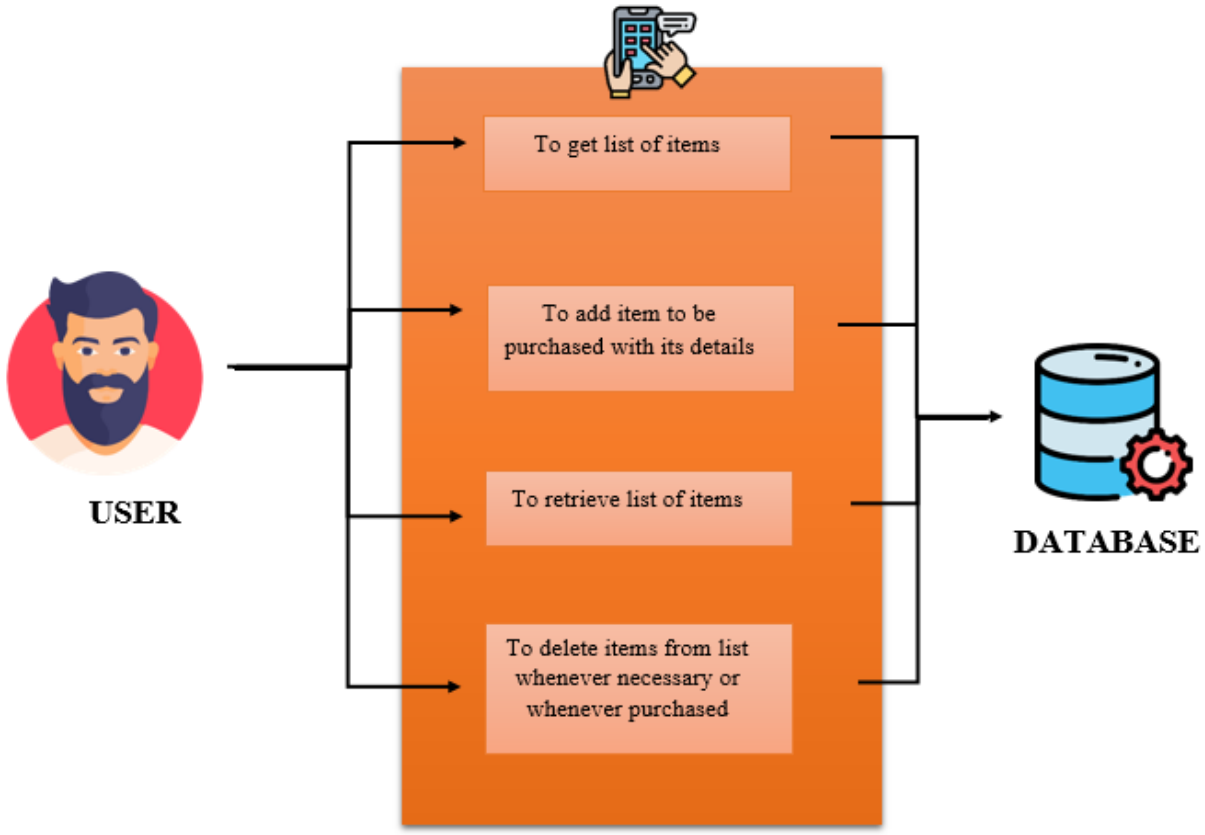
2.2 Proposed solution

The proposed solution is to create a reliable and user friendly app which may help users at the time of grocery shopping. So the proposed system stores the user items in a cart and allows

them to modify items in the list at any time whenever needed. And additionally the user should be able to record its details and get it afterwards. And this can be done by developing an app such that users maintain a record of an item with its details like product name, product Quantity, and Product Price.

3. THEORITICAL ANALYSIS

3.1 Block diagram



3.2 Hardware / Software designing

Software requirements of the project

1. Front End :

   IDE : Android Studio

   Programming Language : Kotlin

2. Back End :

   Room Database

3. Other :

   Operating System (Windows 7 or above / Linux)

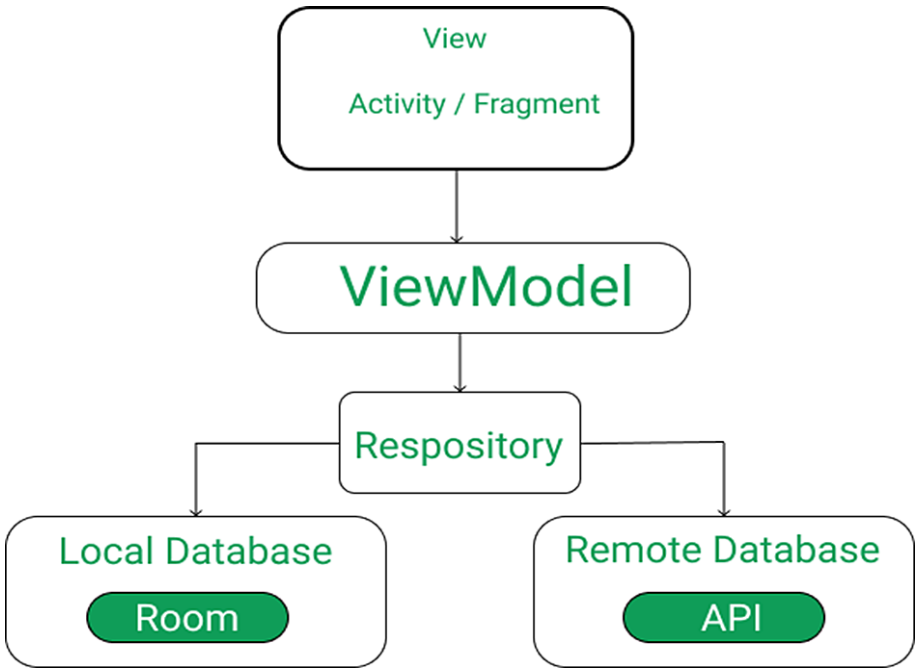
   Emulator

Hardware requirements of the project

1. Computer/Laptop
2. RAM at least 8GB
3. Android Device

4. EXPERIMENTAL INVESTIGATIONS

Project is built using MVVM for architectural patterns, Room for database, Coroutines and RecyclerView to display the list of items.



MVVM (Model View ViewModel)

MVVM architecture in android is used to give structure to the project's code and understand code easily. MVVM is an architectural design pattern in android. MVVM treat Activity classes and XML files as View. This design pattern completely separate UI from its logic.

ROOM Database

Room persistence library is a database management library and it is used to store the data of apps like grocery item name, grocery item quantity, and grocery item price. Room is a cover layer on SQLite which helps to perform the operation on the database easily.

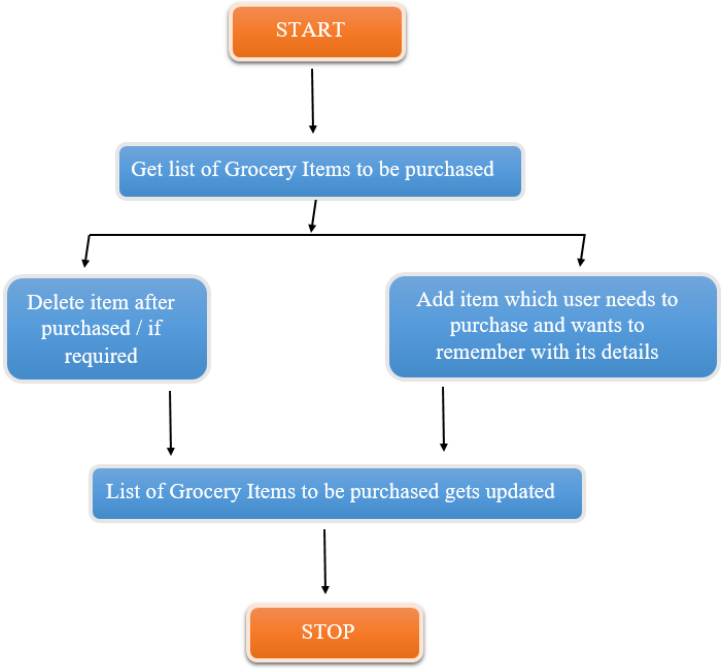
RecycleView

RecyclerView is a container and it is used to display the collection of data in a large amount of data set that can be scrolled very effectively by maintaining a limited number of views.

Coroutines

Coroutines are a lightweight thread, we use coroutines to perform an operation on other threads, by this our main thread doesn't block and our app doesn't crash.

5. FLOWCHART



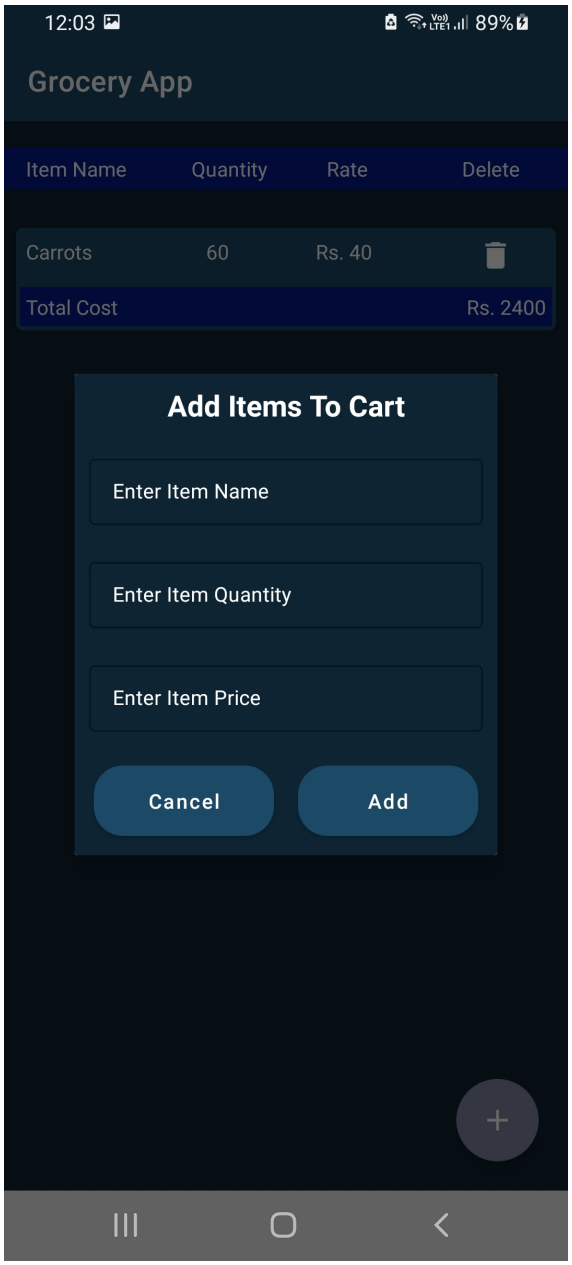
6. RESULTS

1] Application UI:

Displays list of grocery items already added by user.

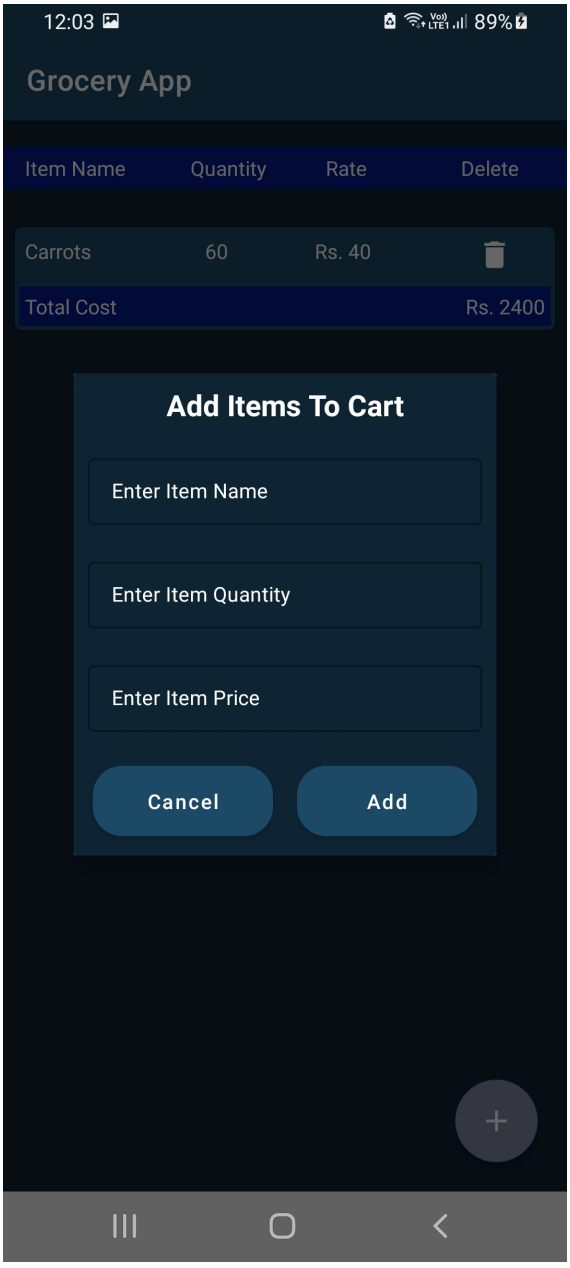
2] On Clicking + Button:

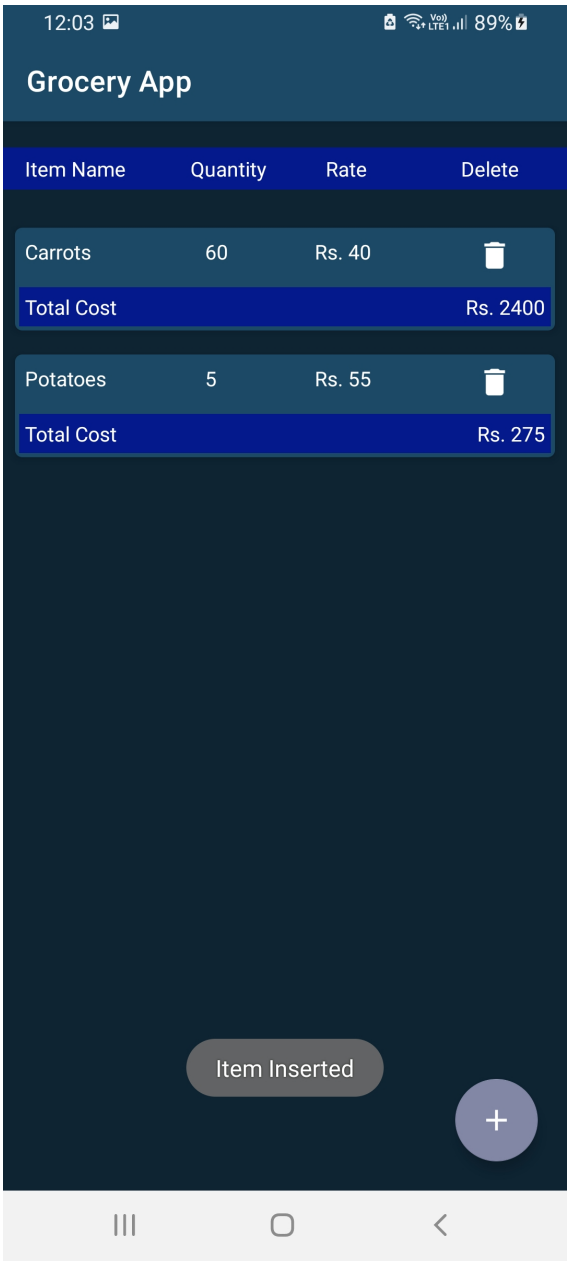
It pops up input layout asking user to enter required details in order to add new item to be purchased in the list.



3] Adding Details:
User needs to enter valid details like name, quantity and price inorder to make new entry.

4] On Clicking Add Button:
Item gets added to room database and display list in application view gets updated.





5] On Clicking Delete Button:

On clicking delete button of any item in list, that item gets deleted from room database as well as gets removed from list in application view.

7. ADVANTAGES & DISADVANTAGES

Advantages:

- User friendly UI
- Easy to interact

- Easy to maintain
- Compatible with almost all versions of android
- Maintains to-purchase list just same as to-do list
- Saves purchase time of user
- Helps user to remember every small and big necessity of day
- Avoids situation where user may forget to buy some essential
- Modifiable according to user requirement

Disadvantages:

- Less secure

8. APPLICATIONS

The logic used in the proposed solution can also be applied to numerous applications, including the ones listed below:

To-Do Lists:
It can be helpful for assisting diverse users in keeping track of their tasks.
Example : It can assist students in keeping track of the assignments, practical work, and other tasks that need to be finished.

Events:
Can aid users in keeping track of forthcoming occasions they must attend.

Maintain A Medication List:
It can happen that one may have more than one patient in house. So it might be challenging to recall each patient's medication name. Therefore, making an app that allows users to keep track of their medication list may be very helpful to him.

9. CONCLUSION

The app created is useful for users when they go for grocery shopping. It allows the user to store the user's items with their details in a cart and then retrieve a list of items, as well as modify items in the list at any time.

10. FUTURE SCOPE

In the future, we may add the following features to this application:

- Provide Register/Login to maintain Authentication
- To allow user to rank items according to priority

11. BIBILOGRAPHY

References:

1] Blog by geeksforgeeks - "How to Build a Grocery Android App using MVVM and Room database"
Link: https://www.geeksforgeeks.org/how-to-build-a-grocery-android-app-using-mvvm-and-room-database/

2] Youtube tutorial by geeksforgeeks
Link : https://youtu.be/vdcLb_Y71Ic

Source Code/ Github Link:

https://github.com/smartinternz02/SPSGP-90603-Virtual-Internship---Android-Application-Development-Using-Kotlin

Project Demonstration Youtube Link:

https://youtu.be/yZ5TzhP34Eg

Google Developers Link:

https://g.dev/Shraddha-Shaha