VIRTUAL INTERNSHIP - ANDROID APPLICATION DEVELOPMENT USING KOTLIN

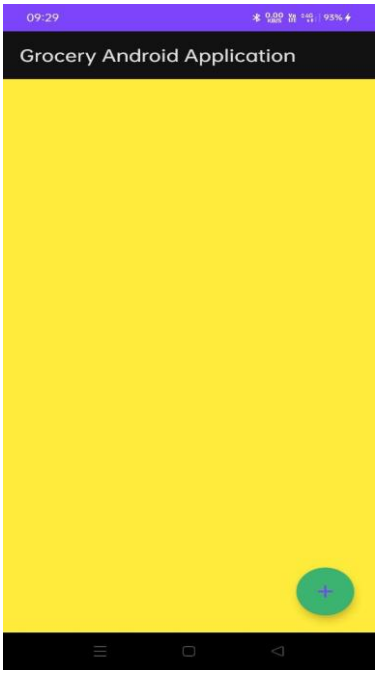
GROCERY APPLICATION PROJECT

1. INTRODUCTION

Overview

In the recent decade, electronic commerce and online retailing have unquestionably happened to be essential components of the global retail landscape. Such as various other businesses, the retail scene has changed dramatically with the advent of the internet. The number of digital buyers proliferates worldwide as internet access and adoption rise rapidly, leading to online shopping increasing year after year.

Many times, we forget to purchase things that we want to buy, after all, we can't remember all the items, so with the help of this app, we can note down your grocery items that we are going to purchase, by doing this we can't forget any items that we want to purchase. A sample image is given below to get an idea about what we are going to do in this Project. Note that we are going to implement this project using the Kotlin language.



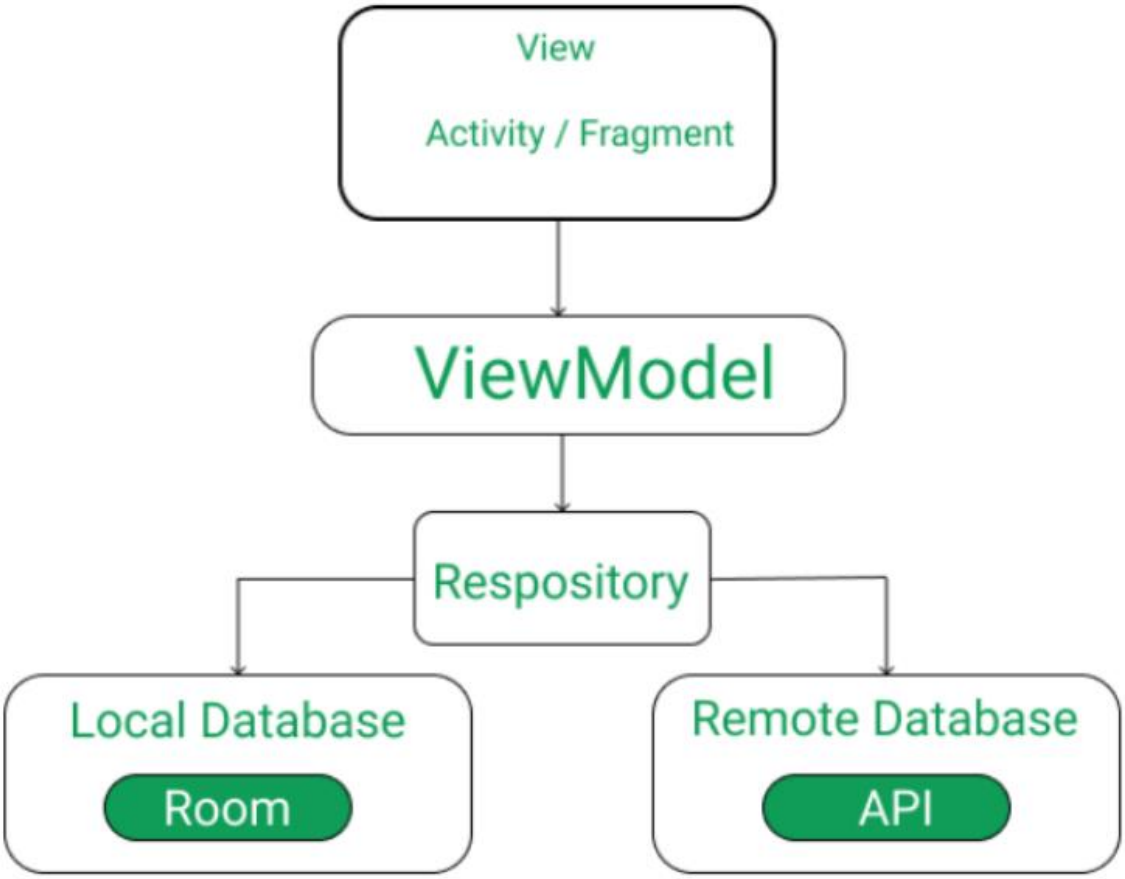
We're going to discuss how to create a Grocery Android App using MVVM and Room Database in Kotlin. With this application, the user will be able to note down the grocery items that he/she is going to purchase. In this project, we are using MVVM (Model View ViewModel) for architectural patterns, Room for database, Coroutines and RecyclerView to display the list of items. So, let's get started now.

2. LITERATURE SURVEY

- Low-profit margins-eating away profits: Customers always prefer Online Grocery app solution as they expect good deals with less price. But after spending so much on shifting the store to online grocery app development but it is a too tough task to keep less cost for the products and sell them to customers which will ultimately bring loss to the company. Also, many people would like to test the vegetables physically rather than seeing them on the screen, which is impossible in online.
    - Solution: By including non-perishable items like packaged foods and personal care item etc. whose storage and delivery cost are less, you can save some expenses as well as satisfy the customer. You can merge the offline and online business where people can order online and collect them whenever possible from the store. This will minimise the operation cost to some extent.
- Disorganised and Inefficient Delivery System: Customers will never plan before they order from a grocery store, they order it when they like to eat something or need any fruits and vegetables at that moment and expect it to reach them without any delay. The customers who order from online grocery app solution will compromise with the spontaneous buying experience. Many people still prefer to visit the store rather than ordering things online. As most of the people are working, they are not available to collect their stuff when it is delivered home.
    - Solution: This can be solved only if the companies follow some delivery schedules. A buyer should be able to receive his order within 30 mins, which must be implemented by Online grocery app development. By this, the buyer can get a clear picture of the delivery so that they can manage their time.
- Deep-rooted consumer behaviour: One more significant challenge faced by the online grocery app solution is that people do not want to order online as they are habituated to go to the store and pick up the stuff. There is this belief that the things that are sold online are not fresh and tasty. As per the recent survey, it is found that 4% of the customers in Los Angeles and 16% in New York bought their grocery online and remaining people still prefer to use the traditional ways to get their groceries.
    - Solution: Customers have shown more interest in organic products, but then this trend cannot sustain as there are insufficient biological resources. You can find out different ways of how customers can get those natural products at a reasonable price. Another thing about the customer is that they don’t only see the quality of the food, but also, they are concerned about the brand value of your store. Having a good brand recognition attracts more customers to buy from your store.
- Difficulty in penetration in small towns: People in the small cities do not have much means of entertainment and for them going to store is the means of engaging with other people. On the other hand, most of the people who buy the stuff directly are habituated in bargaining, which is not possible when ordering through online. Some people are not aware of technology and are not willing to use it as the task of downloading the app and order seems like a big deal for them.
    - Solution: The grocery store owners must plan to conduct some awareness programs to such people and grow your brand reputation. By this, the people will show interest to go for online ordering from your grocery app development.

3. THEORITICAL ANALYSIS

Block diagram:



ROOM DATABASE

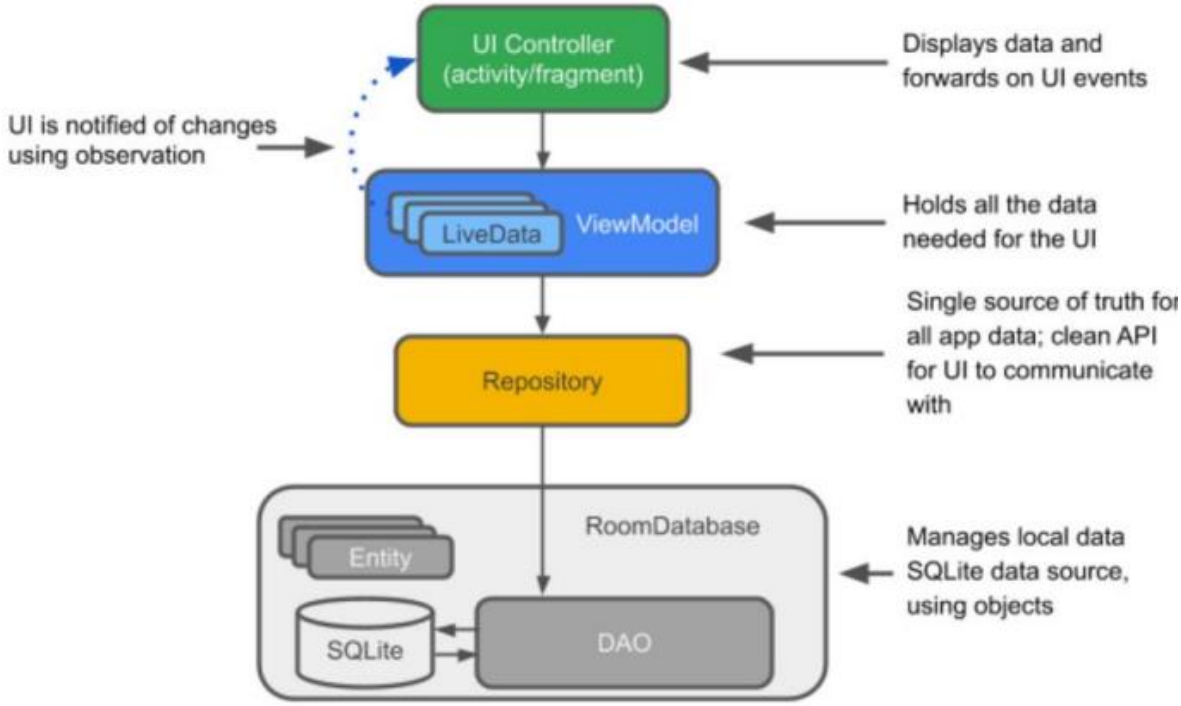
Room persistence library is a database management library, and it is used to store the data of apps like grocery item name, grocery item quantity, and grocery item price. Room is a cover layer on SQLite which helps to perform the operation on the database easily.

RECYCLEVIEW

Recycler View 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 a coroutine to perform an operation on other threads, by this our main thread doesn't block and our app doesn't crash.



4. EXPERIMENTAL INVESTIGATIONS

Being a shopper, I enjoy shopping in the local grocery stores and noticed some problems faced by the common people while shopping. I noticed different age groups faced different types of problems while shopping. Some don't have much time, some of them are not getting offers, many of them forgot some of the items on the way and much more. I did a survey and highlighted some pain points down below.

I thought why not try to solve the problems with Grocery App. While designing a whole new app to serve such a wide variety of people sounds like an overwhelming task, conducting user research served as an effective way to narrow down on what is truly important to the people who would be using the product.

5. THERORITICAL ANALYSIS

HARDWARE / SOFTWARE DESIGNING HARDWARE AND SOFTWARE REQUIREMENTS OF THE PROJECT.

HARDWARE USED:

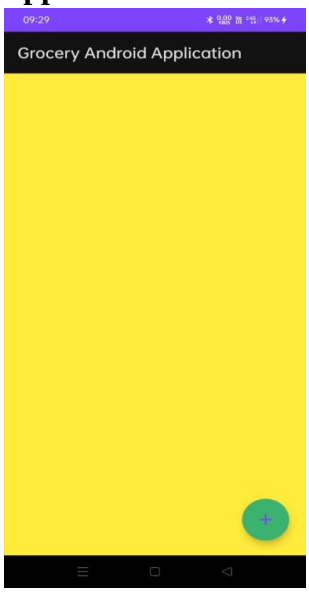
1. Laptop or PC with Android studio installed into it along with a good internet connection.
2. Android mobile phone for running our app (if not we can use Emulator as well.)

SOFTWARE AND TECHNOLOGY REQUIREMENTS:

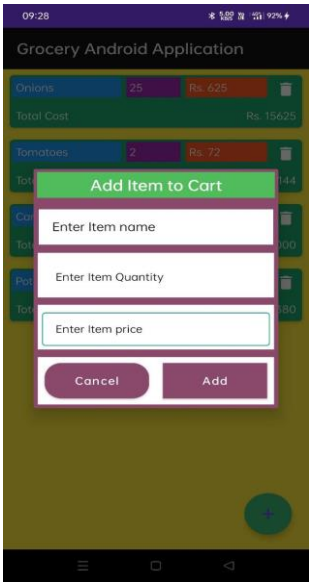
1. Kotlin
2. Andorid studio.
3. Github.
4. Emulator, etc

6. RESULT

Home Screen of the Android Application



Add Item to the Cart



Cart after adding Items in it

7. ADVANTAGES:

- User can purchase grocery products through his mobile phones that support android.
- User does not have to wait in long queue and does not have to struggle with trolleys.
- User can coolly sit at home and purchase the products according to his like.

8. DISADVANTAGES:

- This system won't work in mobile phone that does not support android.
- Product quality would differ from manually purchasing product in a supermarket.

9. APPLICATIONS

a. This system won't work in mobile phone that does not support android.
b. Product quality would differ from manually purchasing product in a supermarket.

10. CONCLUSION

As people are shifting to online ordering, it is a good idea to develop a kotlin online grocery delivery app. You need to take a few steps to easily overcome the challenges that are being faced by the remaining owners of the grocery business.

This project will be helpful to larger masses of people. The project is user friendly and can make improvements based on the user requirements. The project will be more useful in today's busy world. The project is made in a realistic method with proper security enhancements.

11. FUTURE SCOPE

Many changes can be made to this android application, and it can be made more user friendly.

12. References

- Google: google
- Android Developer: android_devop
- SmartInternz: https://smartinternz.com/

Name: Sujith Krishna Mulpuri
Gmail: sujithkrishnamulpuri@gmail.com
LinkedIn: https://www.linkedin.com/in/sujithkrishnamulpuri/
GitHub: https://github.com/MULPURISUJITHKRISHNA