

# EASY BOOK-AIRLINES

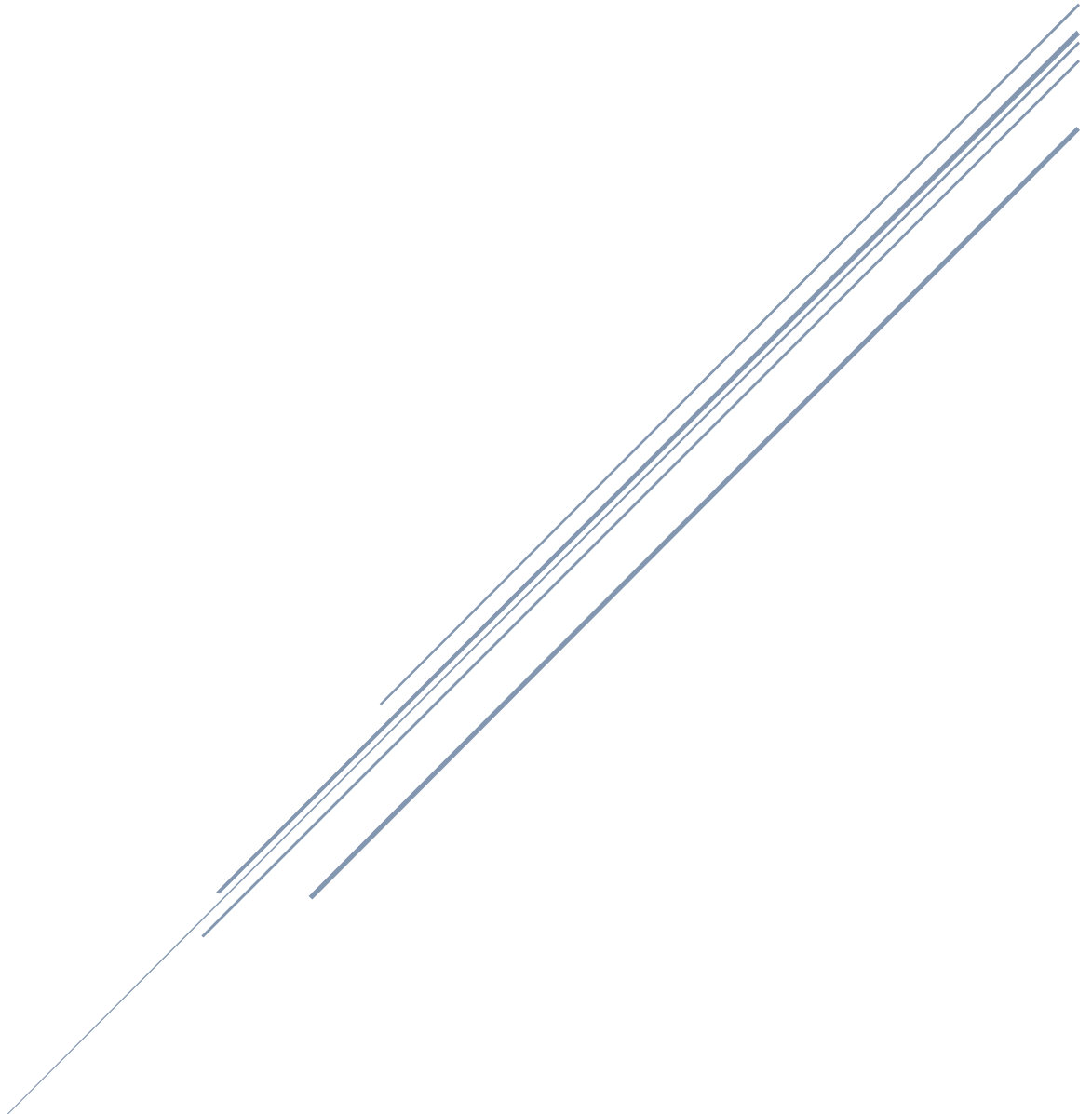
(A flight booking android application)

Name: MD. MOMINUR RAHMAN

Roll: 1807011

Course No. CSE 2200

Department of CSE



## Objectives:

1. To learn how to develop a Flight Reservation android app.
2. To learn how to use firebase as a backend server.
3. To learn how to use firebase authentication for Sign In and Sign Up.
4. To learn how to insert, update, retrieve data from firebase database.
5. To learn how to implement payment gateway in an android app.
6. To help people to book airlines ticket.

## Theory:

A mobile application is a computer program or software application designed to run on a mobile device such as phone, tablet. Now the public demand for apps caused rapid expansion into other areas such as mobile games, factory automation, GPS and location-based services, order-tracking, and ticket purchasing. For android platform, google has made android studio to develop android apps. It is free and very much useful. One can develop android apps using Java or Kotlin programming language.

Now a days E-Ticket is become very popular. Every airlines organization offers their users an E-ticketing facility. So Ticket booking app is very much important for a company. Now people of every ages use android devices. So they will more comfortable to use android apps. Easy Book Airlines app will show how to manage airlines ticket booking in a very much easy way. It uses firebase authentication for "Sign In or Sign Up". To store data firebase real-time database is used. It is easy to implement and secured. Firebase is a platform developed by google for creating mobile and web application.

For payment of ticket payment gateway used. Payment gateways are consumer-facing interfaces used to collect payments. For my application SSLCommerz testing API has been used. It provides a demo interface of the gateway. Here user can make their payment using Bkash, Rocket, Master card and bank account. The gateway is very much easy to implement and handy. Api link <https://www.sslcommerz.com/>.

## Implementation:

### Detailed Description

#### STEP 1: CHOOSE THE BUSINESS MODEL

There are a lot of Business Model of a Flight Booking App. From these I prefer booking app where will be an admin and its users. Admin add flight and users can choose flight by searching and make the payment successfully and confirm the purchase. Admin has the power to reject user's order.

#### STEP 2: CHOOSE THE REVENUE MODEL

I choose a revenue model where I included payments for ticket, revenue sharing, promotional activities, surge pricing and many more.

### STEP 3: ANALYZE TRENDS

Now a day E-ticketing is very much popular. People don't want to go to booking office to book ticket. So every organization develop an application for their customers. Most of the people use android operating system .So it is must to developed android app for customer where they will get enough flexibility to purchase ticket.

### STEP 4: SELECT FUNCTIONALITY

#### ADMIN PANEL:

1. Add Flight
2. Update Flight INFO
3. Cancel Flight
4. Show all Flight data
5. Show all the Users
6. Show Notification

#### USER PANEL:

1. Sign IN and Sign Up
2. Search Flight
3. Book Flight By completing Payment
4. Notification
5. Purchase history

### STEP 5: CHOOSE A TECHNOLOGICAL STACK

1. **Registration**: Gmail, Firebase Authentication
2. **Storages**: Firebase Real-time Database by goggle
3. **Payment** : SSLCOMMERZ payment gateway:

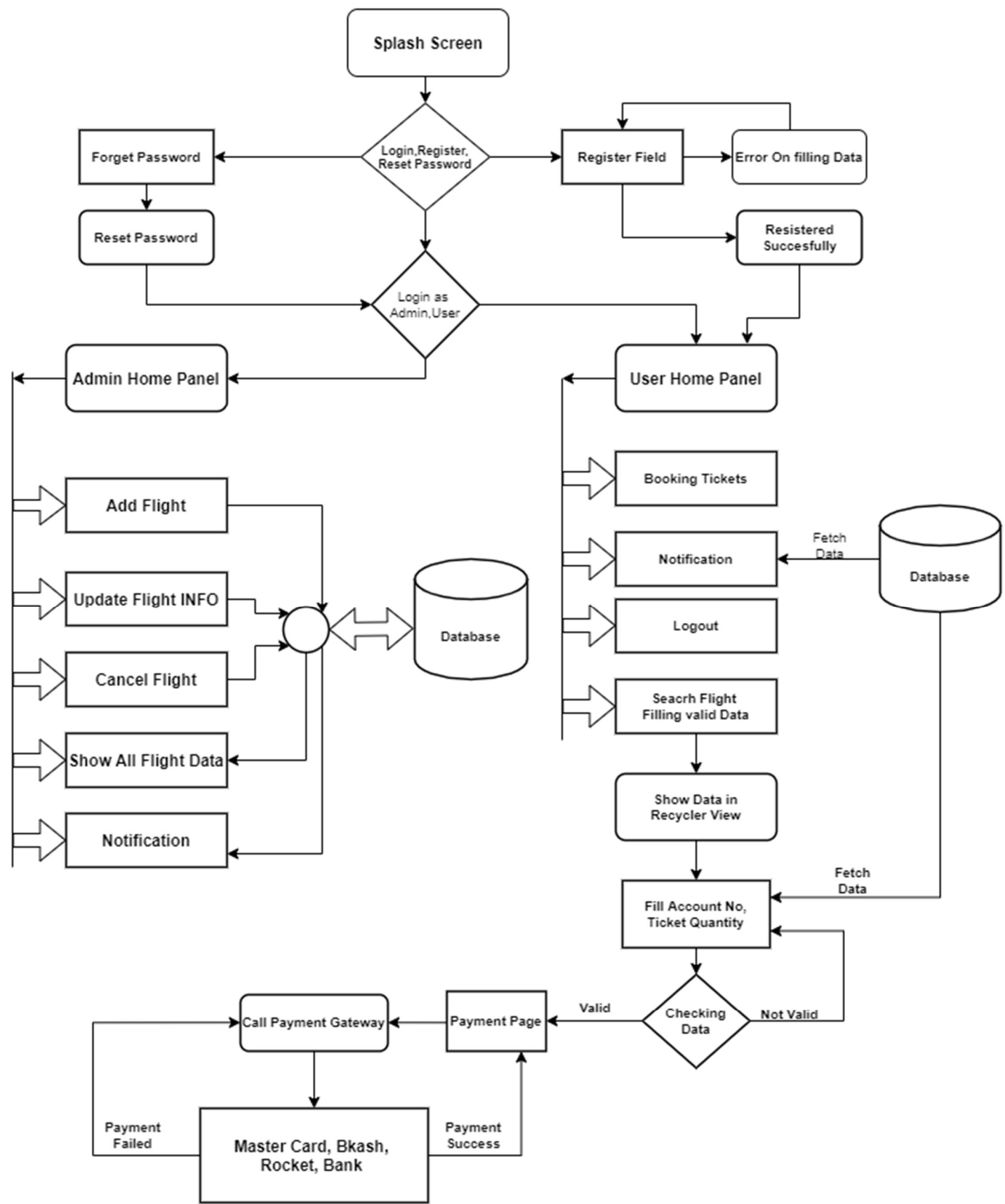
\*BKASH

\*ROCKET

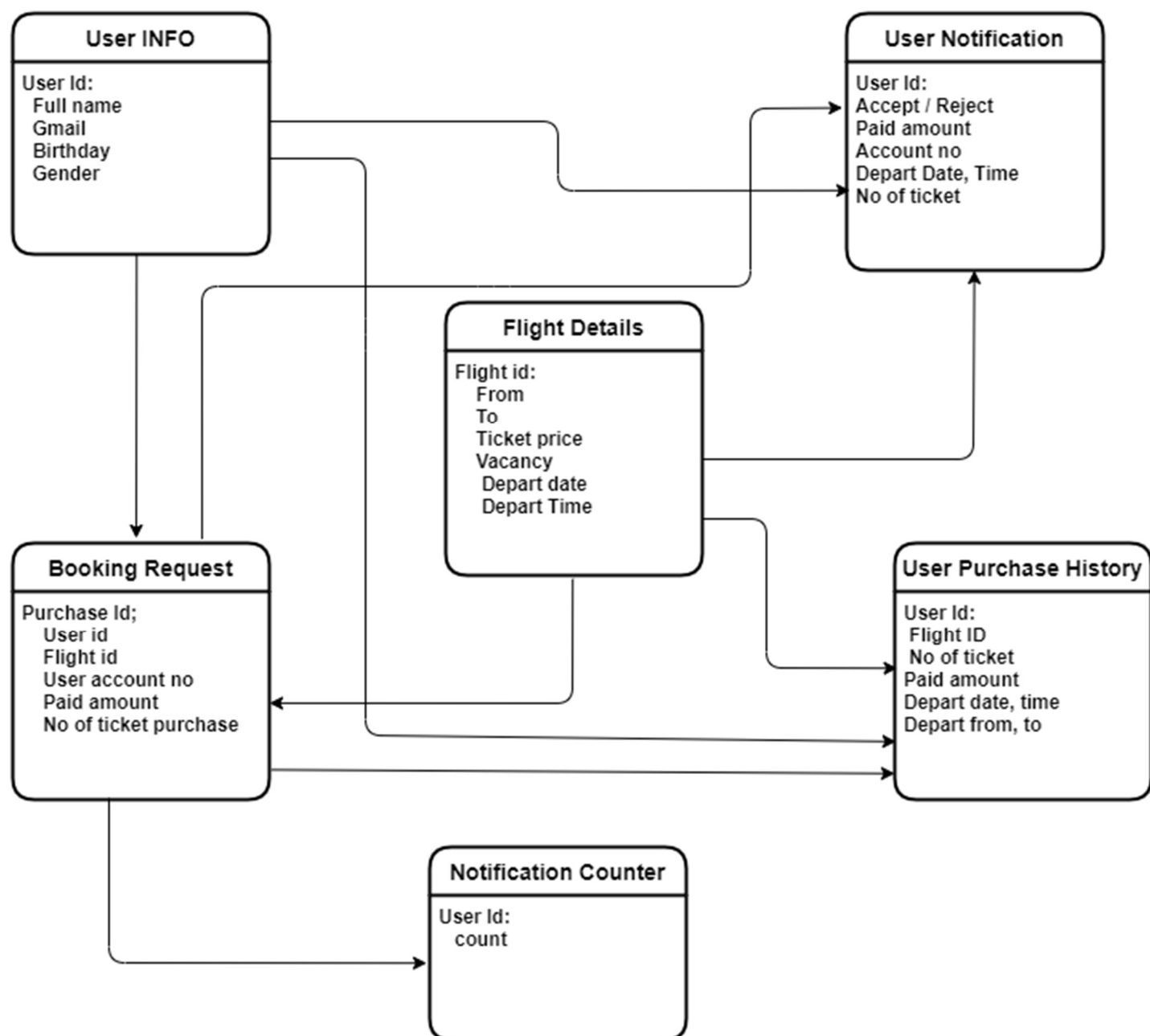
\* MASTER CARD

\* NET BANKING

Diagram:



## Schema Diagram:



## Database Picture:

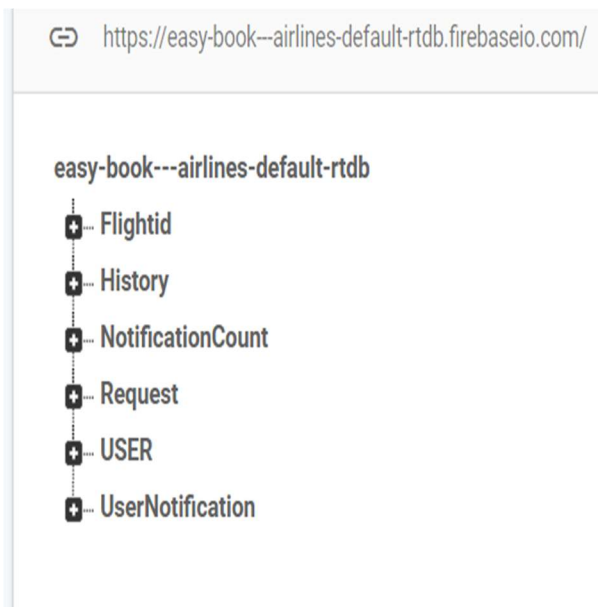


Fig 4: Firebase Real-time Database

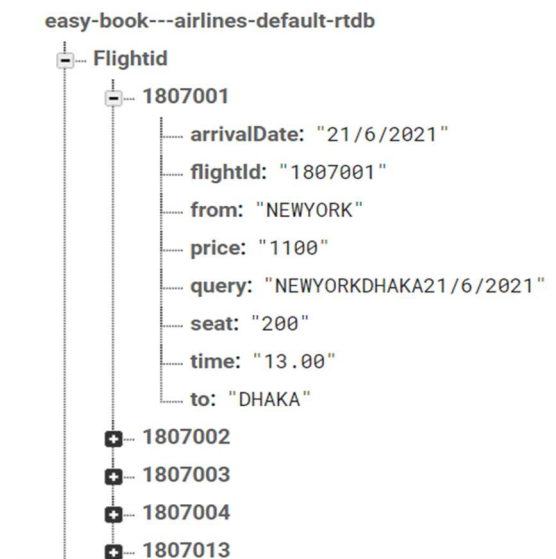


Fig 5: Flights details

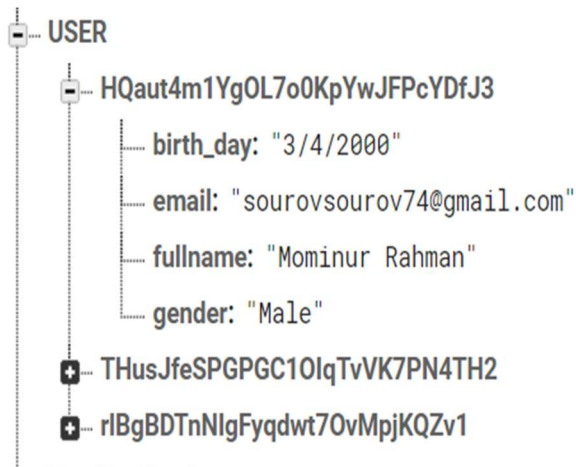


Fig 6: User Details

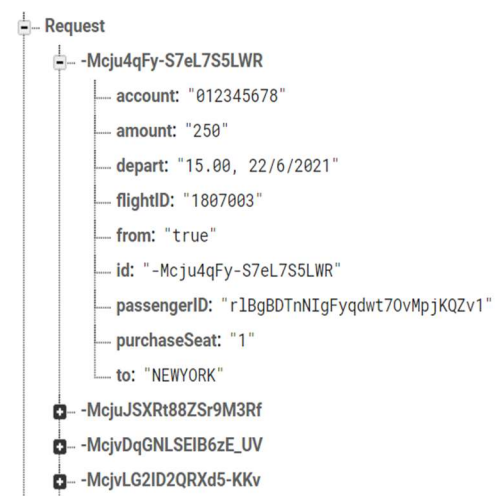


Fig 7: User's request for booking

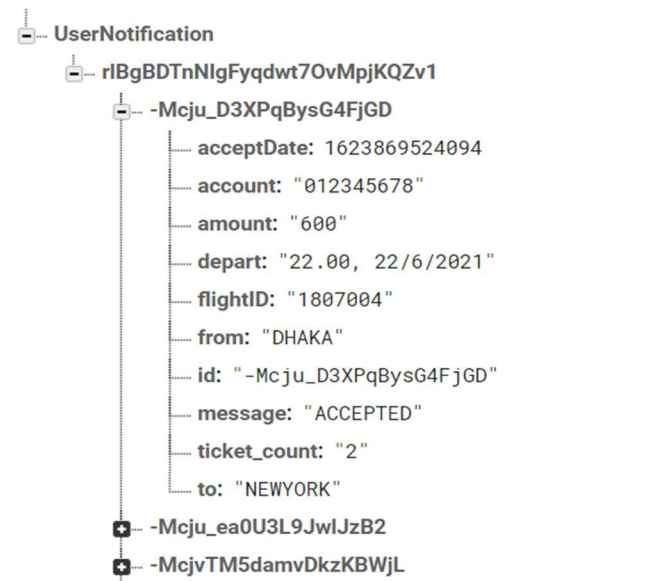


Fig 8: User's Notification

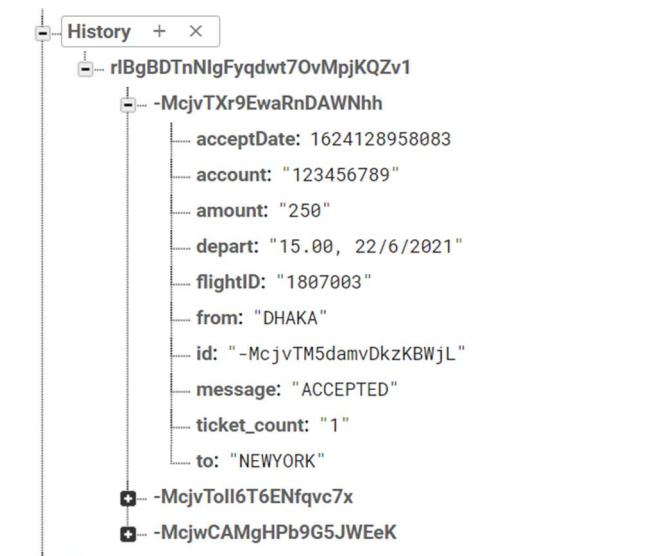


Fig 9: User's Purchase History

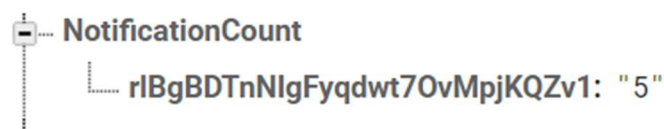


Fig: User's Notification count (It is used to show user's how many new notification)

## Sequence:



Fig 10: Welcome screen.

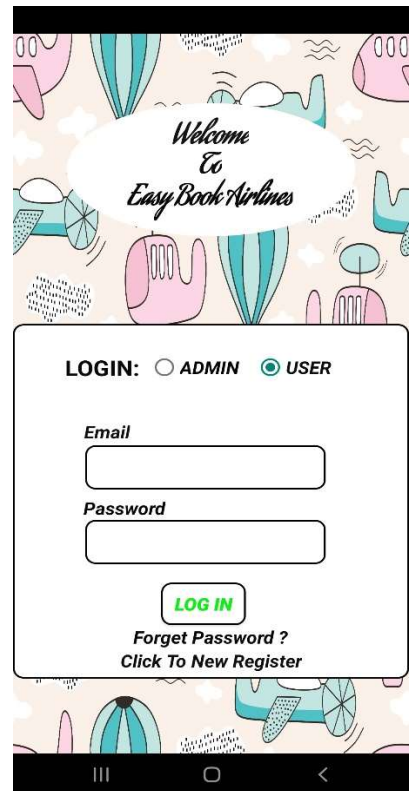


Fig 11: Login page for (Admin/User)

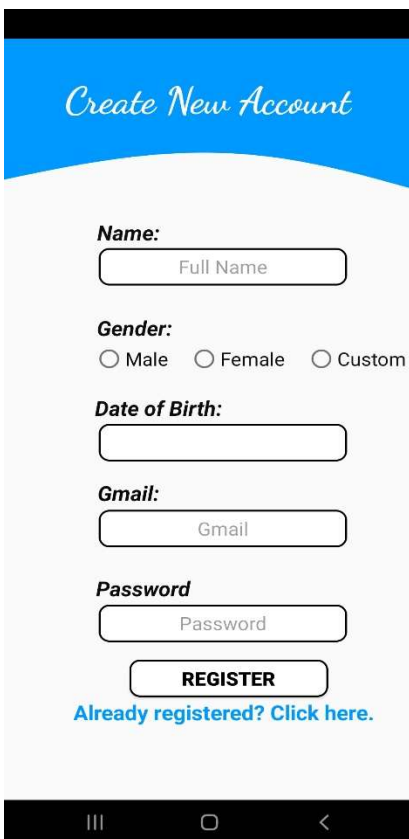


Fig 12: Registered page for user's

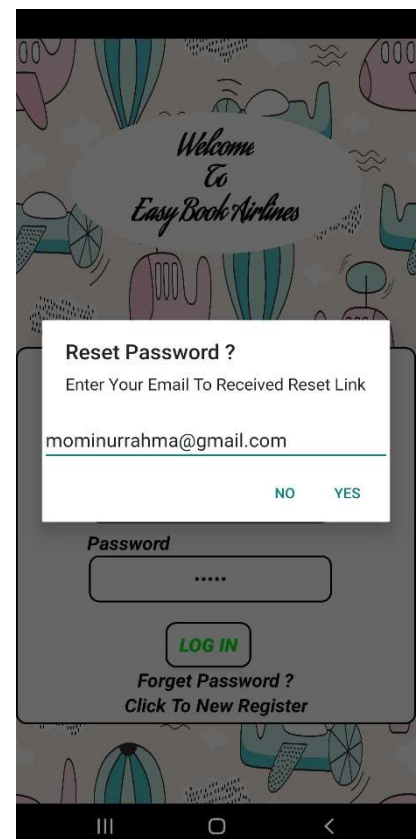


Fig 13: Password reset for user





Fig 14: Search section.



Fig 15: Search result (Shows in Recycler View)

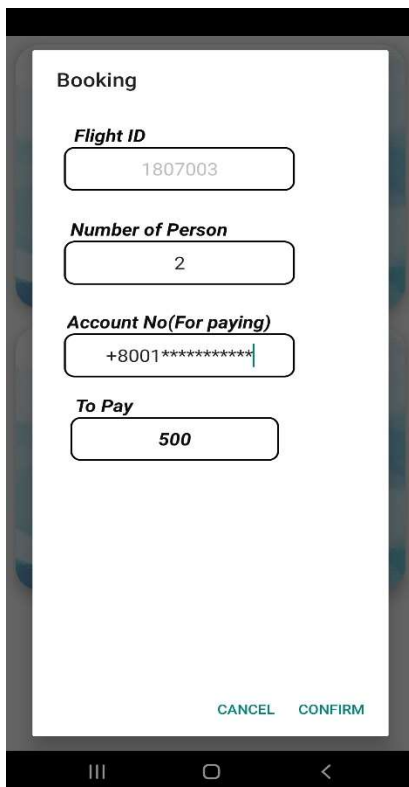


Fig 16: Booking field

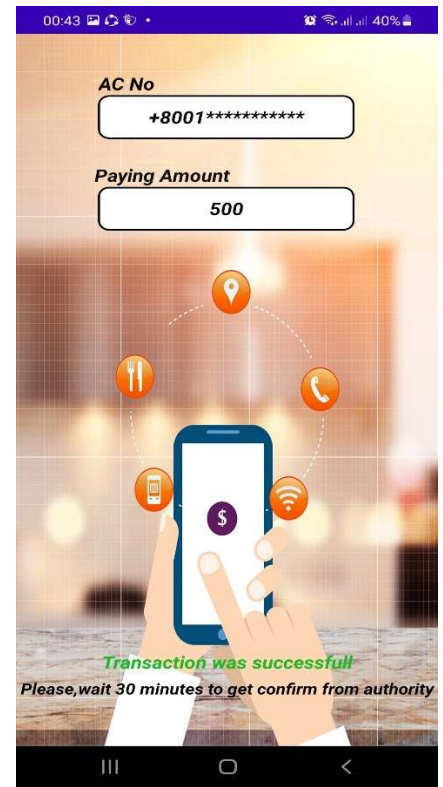


Fig 17: Payment confirmation page

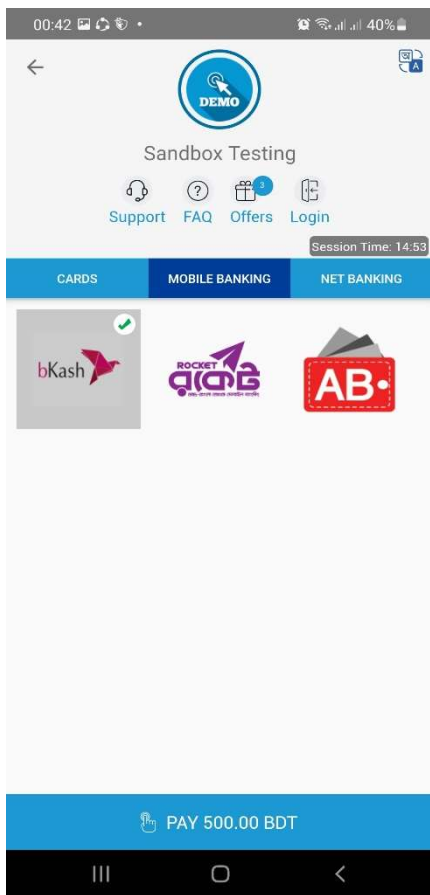


Fig 18: Payment gateway

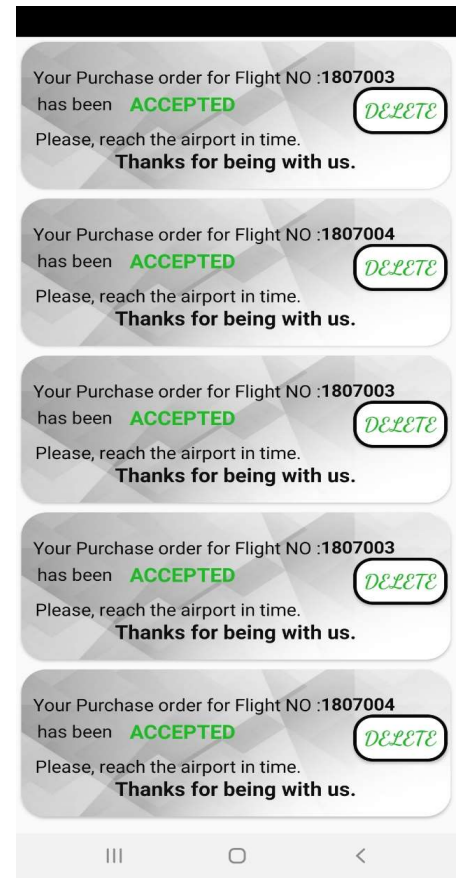


Fig 19: User's Notification



Fig 20: User's booking history

## Admin section:

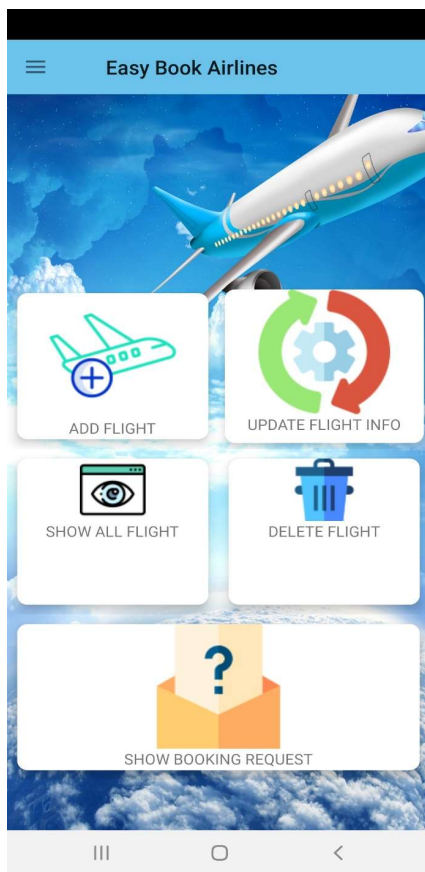


Fig 21: Admin Dashboard

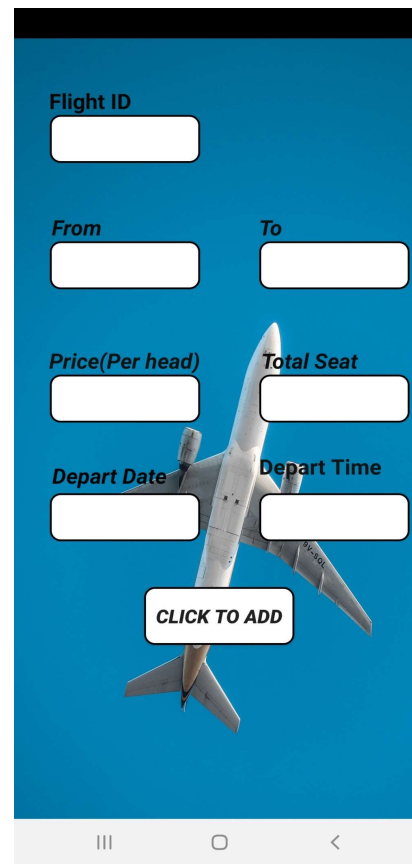


Fig 22: Add new flight to database

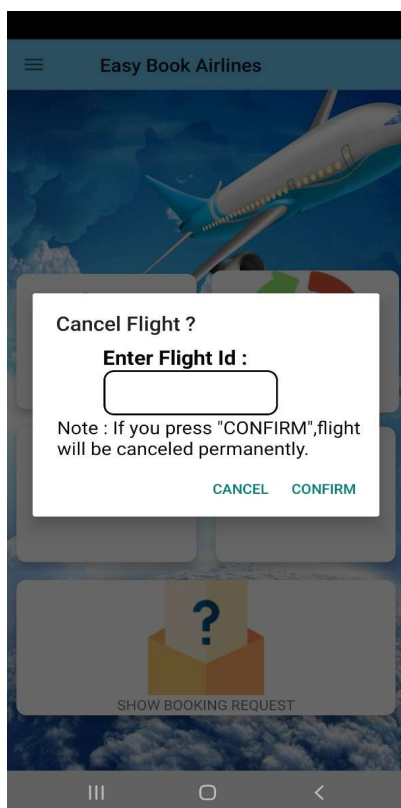


Fig 23: Cancel existing flight.

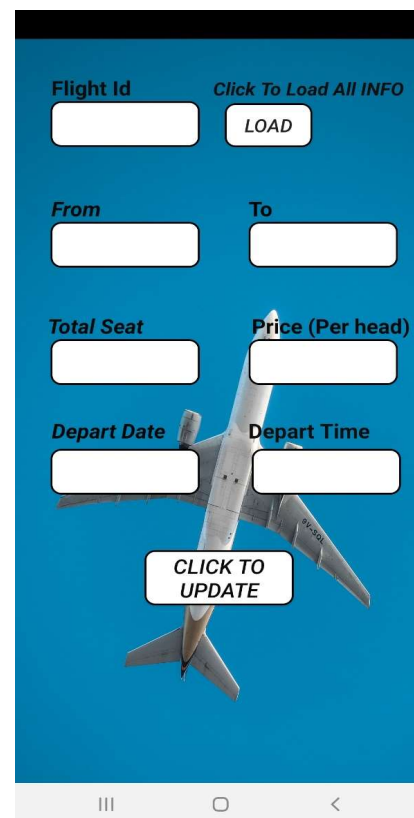


Fig 24: Update Flight INFO



Fig 25: All flight in database.

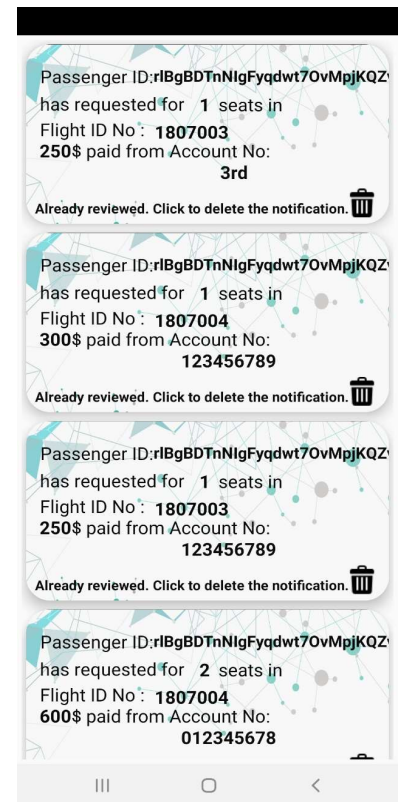


Fig 26: Admin Notification

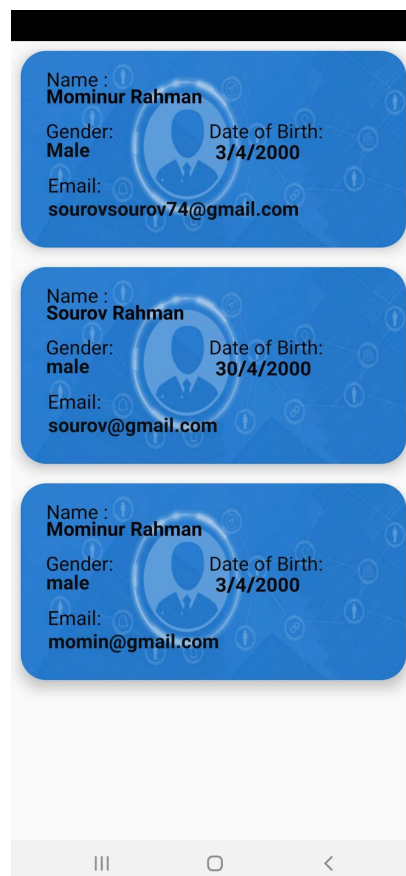


Fig 27: User's Data (shows in Recycler view)

## Target vs. Actual Accomplishment:

Topic	Target	Achieved
Admin panel	✓	✓
User panel	✓	✓
User Authentication	✓	✓
User Find Flight section	✓	✓
User booking section	✓	✓
Admin Ticket Managing section	✓	✓
Payment Gateway	✓	✓
Users profile	✓	✗
Discount On purchase	✓	✗

## Risk and Issues:

### Privacy and Threat:

Users use their Full name, Gmail, Date of Birth, Gender for authentication. These data are so much personal and if it leaks it will be a huge privacy threat for users. Besides they provide their account number or bank details for booking. So the authority must be careful so that third party cannot access these data.

### Payment Gateway:

The payment gate which has been used a test gateway. We cannot make real transaction using these gateway. We have to use paid version of the API.

### Internet and Storage:

The application need internet all time. Without internet it will not able to perform any task. In practical use the app require huge database space. So if stored data exist limit we will have to pay for more space.

## Discussion and conclusion:

The application I had made is almost useful for e-ticketing. As I was new in android, I faced many problems at the beginning. I had not known about database much. Even I had not known Java language before. But I had tried to do some simple work in android. Then slowly I had learned android. Firebase was new to me. At first I learned how to make authentication for users. And then I learned how to add data, update data, retrieve data and delete data from firebase real-time database. Then I learned recycler view, card view custom dialog and many things. I had faced challenged to add payment gateway. Most of the company doesn't offer their gateway free. Many of them were paid. I found SSLCOMMERZ offers test gateway API. Then I had implemented it in my application. There had been many bugs that I found in my application. Most of them I had fixed. Despite all this difficulties, the project had been done in time and the application had run successfully. I am very much grateful to my respected teachers. They had been guided me thought the journey. Without their guidance I will not able to make the project. I also thankful to my friends and seniors. They encourage me to do project. And I am much grateful to Almighty Allah to give the patience and energy to complete the project.

## Reference:

1. <https://www.android.com/>
2. <https://firebase.google.com/>
3. <https://stackoverflow.com/>
4. <https://www.youtube.com/watch?v=SV9pJqR41KI&t=2163s>
5. <https://www.sslcommerz.com/>