

CSE 2216 - Application Development Lab

Project Report



Project Name

PageTrade

Submitted By

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27th Batch

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Submitted On

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Table of Contents

1. Introduction	3
1.1 About the App	3
1.2 Motivation	Error! Bookmark not defined.
1.3 Features (Bullet Points)	3
1.4 Tools, Technologies and Frameworks Used	4
1.5 Individual Responsibilities	Error! Bookmark not defined.
1.4.1 Member 1	4
1.4.2 Member 2	4
1.4.3 Member 3	3
2. Design and Implementation	5
2.1 UI Developed (Screenshots)	6
2.2 Database Schema	10
2.3 Code Repository Link	23
2.4 Video Demo Link	23
3. Conclusion	24
3.1 Challenges and Solutions	24
3.2 Lessons Learned	24
3.3 Future Plan	25

1. Introduction

1.1 About the App

PageTrade : A gateway to buying and selling books and PDFs with ease.

1.2 Motivation

Our intense love of books and steadfast faith in the transformational power of reading are what drove us to create the PageTrade app. We are motivated by the current digital era to make this storehouse of knowledge more widely available to people by offering a platform that facilitates the simple purchase, exchange, and sharing of books and PDFs. Additionally, we see a chance to empower writers, authors, and content producers by providing them with a venue on which to publish their work and make a career. By connecting people via our mutual love of books and creating an environment that encourages interaction and suggestions, we want to create a thriving community of readers and information aficionados on PageTrade. Our mission is to revolutionize the book and information distribution industries by using technology to build a cutting-edge, user-friendly, and contemporary digital content marketplace.

1.3 Features (Bullet Points)

Following features are implemented in our app:

- Splash with Lottie Animation has been added.
- Registration Page: Allow users to Sign up And Sign in as a Buyer or Seller.
- Email Verification: While registering in the app, one must verify himself with email verification.
- Forgot Password: using mail one can retrieve his/her password.
- The Navigation Drawer: Allows users to navigate between the home page, cart section, view orders and the profile page etc.
- Profile Information can be added and updated further.
- Product Categories: Books and PDF's are classified into different categories.
- Product Pricing and Description: The price of all books and PDF's is displayed, Each product has its description, author name and seller information .
- Books or PDF's can be added to the cart.
- Quantity Adjustment: Allow users to change the quantity of products in their cart using plus/minus buttons.
- A list of all products added to the cart will be shown.
- Confirm Order: Users can proceed to the confirm order .
- Payment Options: Offer multiple payment options for PDF, such as Bkash, Nagad, Rocket, Upay, Cellfin. Books have only cash on delivery system.
- Search Bar: A Search bar is present – if the searched product is not found then it shows

that no books and PDF's matched in the searched item. Can search both categories and books or pdfs.

- Added Items: Enable seller to view their added items in their profile.
- View Orders: Here Buyer can see their orders. And seller can see which items are ordered by buyers.
- Share: Here User can know more about the app.
- Contact Us: Offer a way for users to get in touch with the app developers for any inquiries or support.

1.4 Tools, Technologies and Frameworks Used

1. Android Studio
2. Java and XML
3. Firebase Storage, Realtime Database and FirebaseAuth
4. Git and Github

1.5 Individual Responsibilities

1.4.1 Saadman Moyeed(Roll:33)

1. Setup Constraints and handling exceptions
2. Control of Bottom Navigation bar throughout the whole project
3. Fixing Bugs and Debugging of xml files
4. Format documentation
5. Readme file update and report documentation
6. Make an Edit Video of Final Project
7. Screenshots
8. Report writing

1.4.2 Ahona Rahman Omi(Roll:59)

1. Firebase Authentication, Realtime Database and Firebase Storage Integration
2. Login and SignUp Using Firebase Authentication & Realtime Database
3. Account Details
4. Organizing, allocating tasks.
5. Interactive but simple early prototype ui/ux design
6. Illustrated graphical component including icons and logos
7. Animation in different parts of project
8. Add Books and PDFs.
9. Add Category for books
10. Add Payment portal for PDFs.
11. Using git and github's best practices for version control
12. Setup Constraints and handling exceptions
13. Search Option
14. Data Retrieval From Firebase Realtime Database and Firebase Firestore
15. Confirm order for books and pdfs

16. Add to Cart

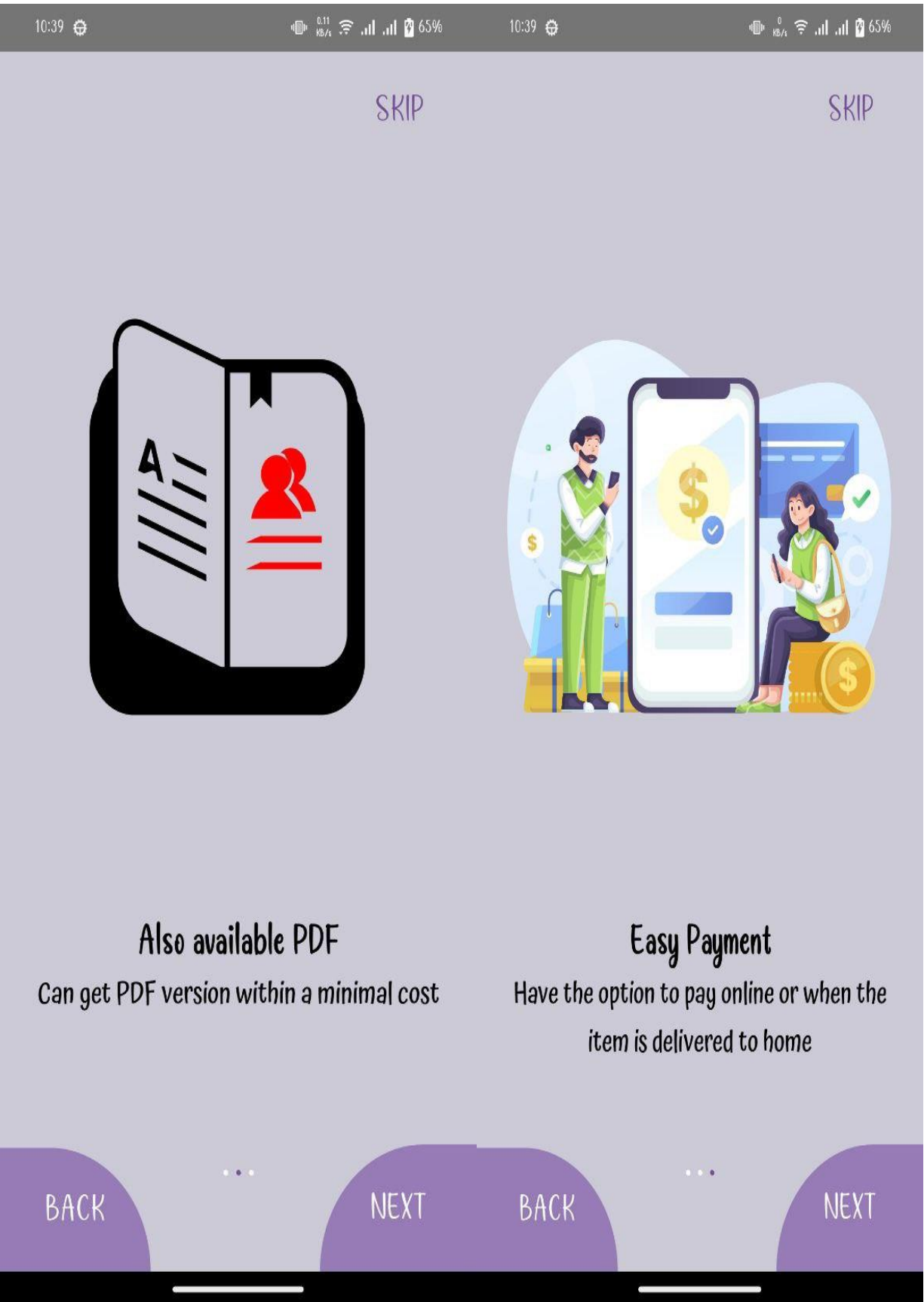
1.4.3 Waki As Sami(Roll:11)

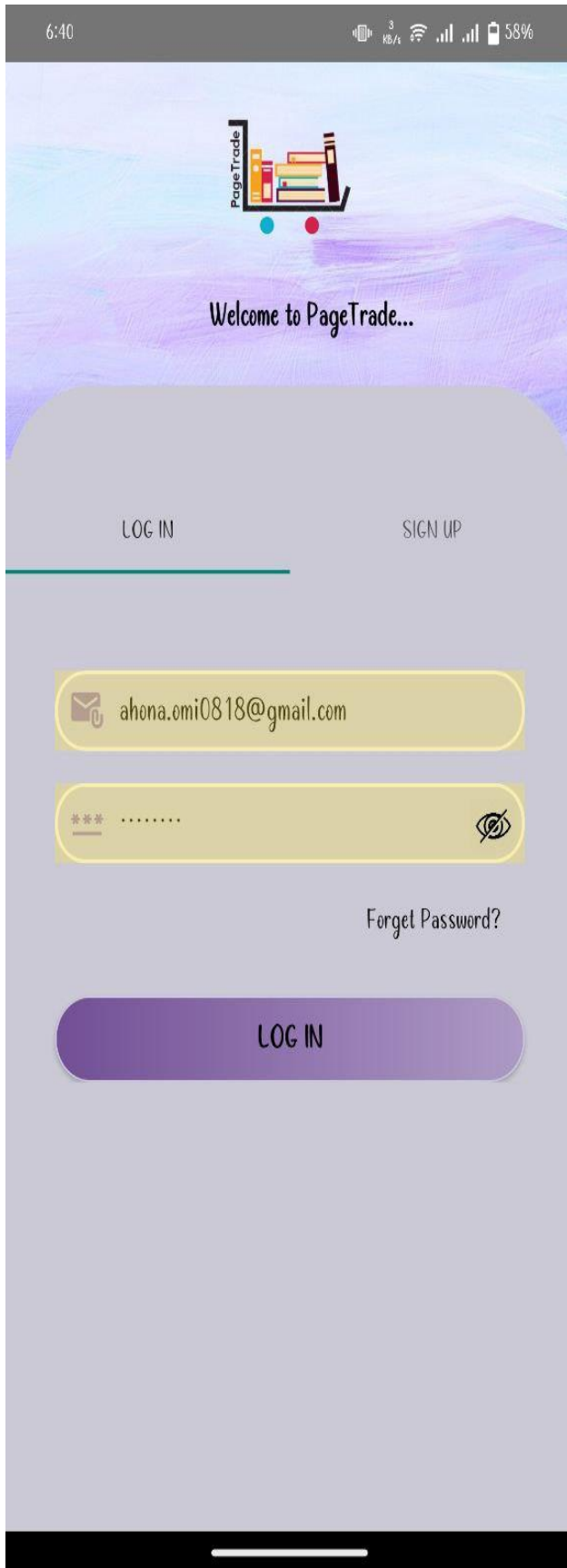
1. Product Pricing and Description
3. Quantity Adjustment(+/-) in cart
4. Setup Constraints and handling exceptions
6. Control of Bottom Navigation drawer throughout the whole project
7. Fixing Bugs and Debugging of xml files
8. Testing the app
9. Genarate APK.

2. Design and Implementation

2.1 UI Developed (Screenshots)







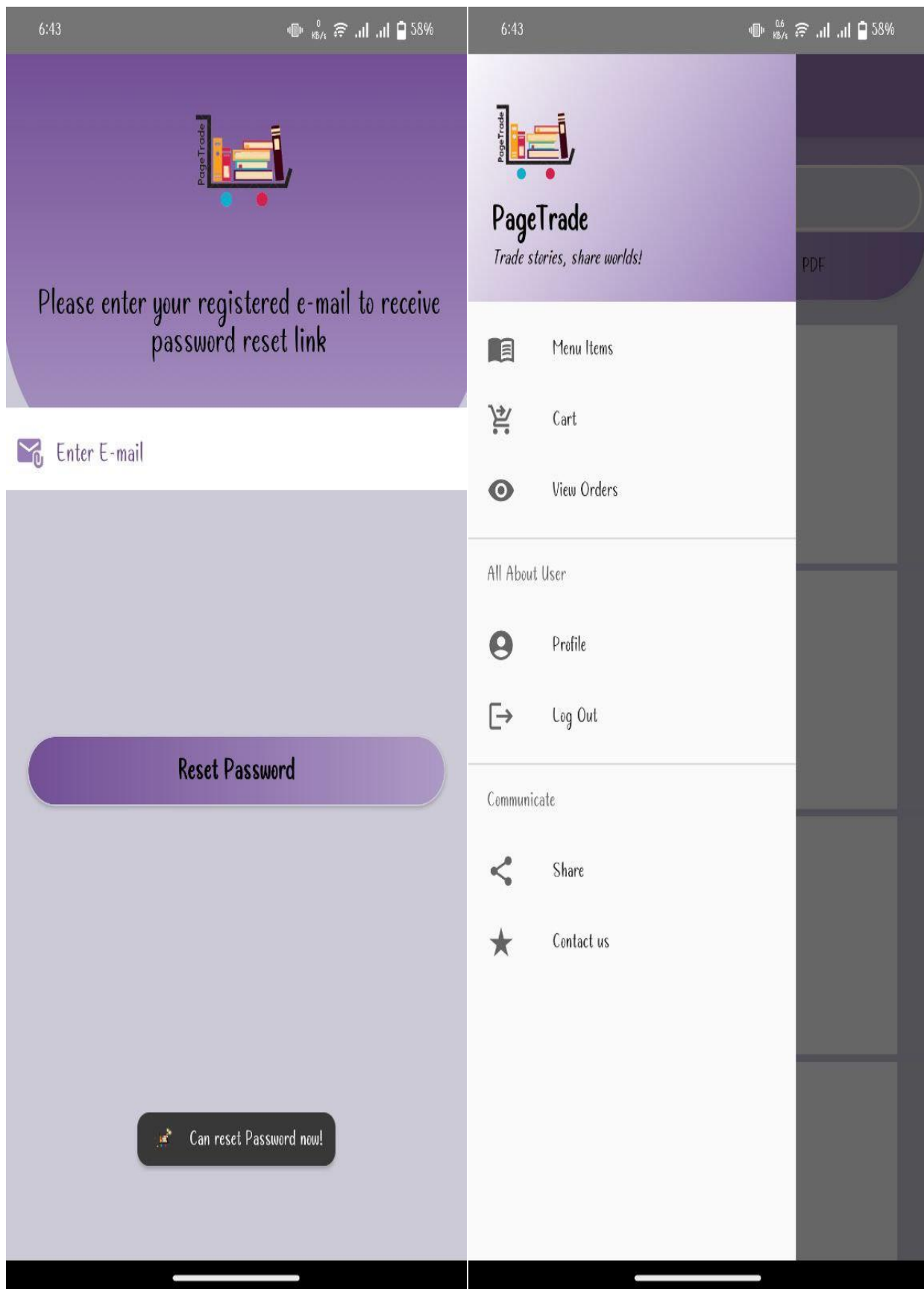
*** Confirm Password



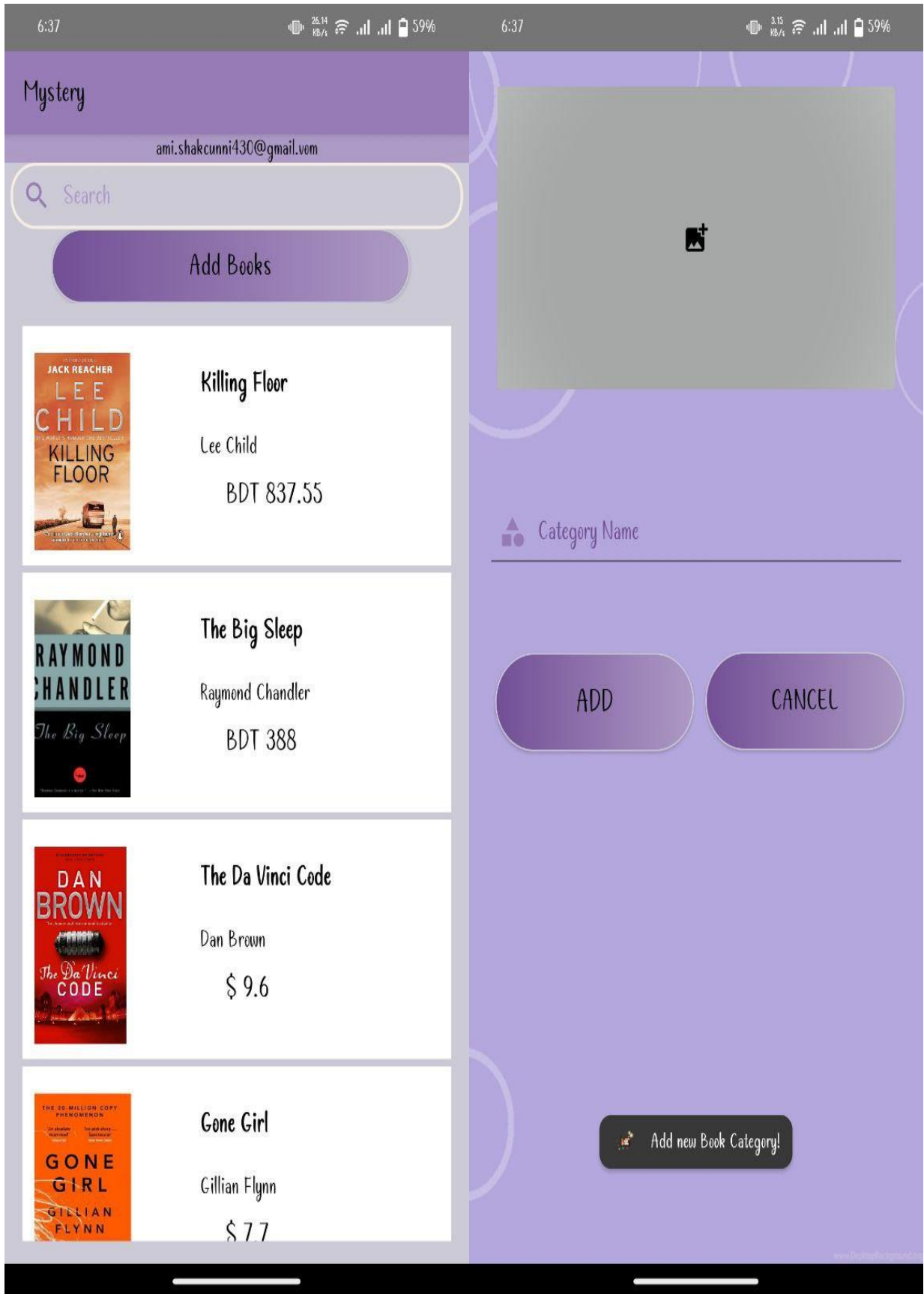
Buyer

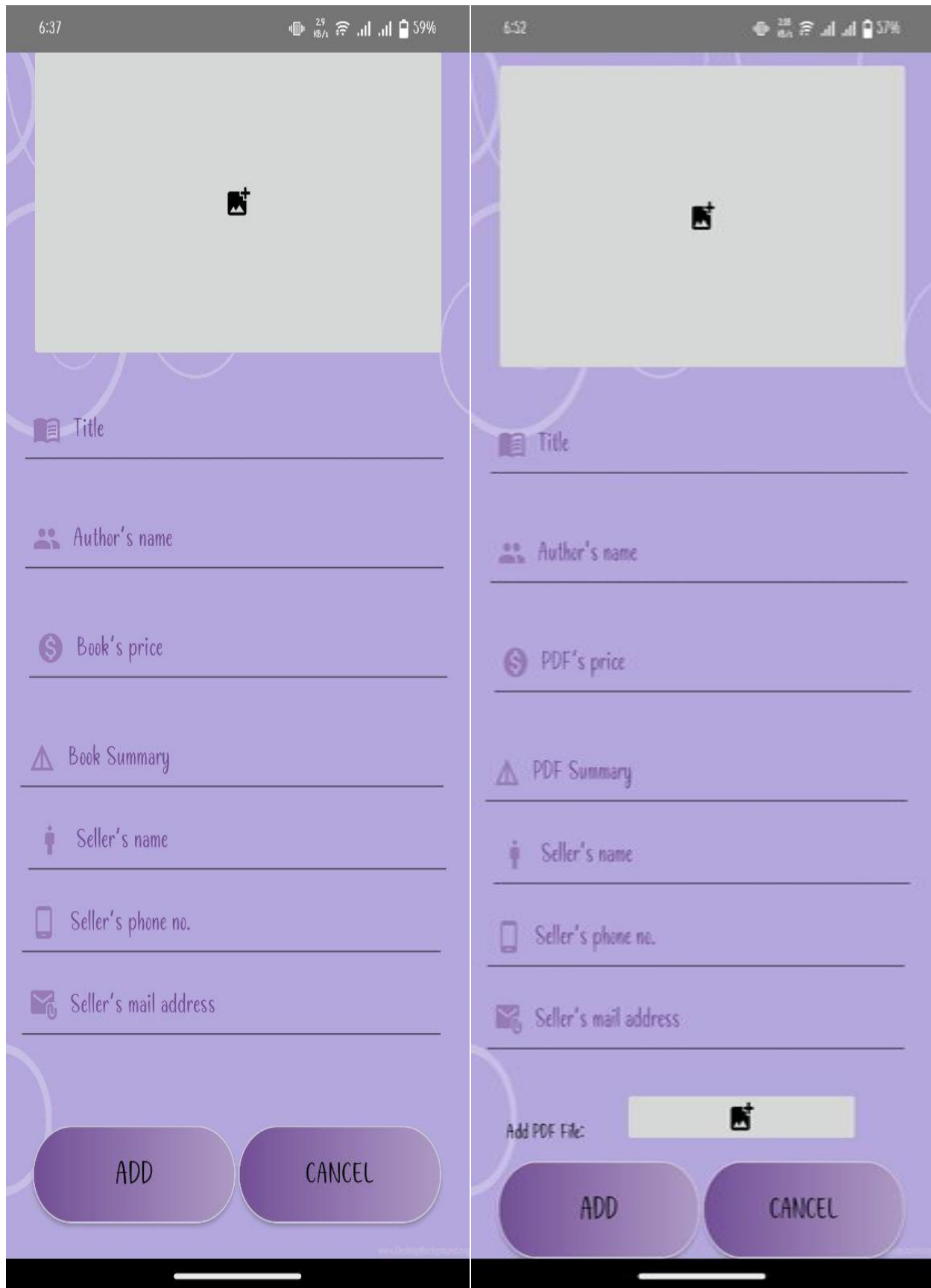
Seller

SIGN UP









6:38

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Gulliver`s Travels



 **Gulliver`s Travels**

 Jonathan Swift

 \$ 6.9

 Adventure

 Jonathan Swift (30 November 1667 – 19 October 1745) was an Anglo-Irish[1] satirist, author, essayist, political pamphleteer (first for the Whigs, then for the Tories), poet, and Anglican cleric who became Dean of St Patrick's Cathedral, Dublin,[2] hence his common sobriquet, "Dean Swift".

 Ahona Rahman Omi

 01516190424

 ahona.omi0818@gmail.com

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Milk and honey



 **Milk and honey**

 Rupi Kaur

 \$ 3.3

 Poetry

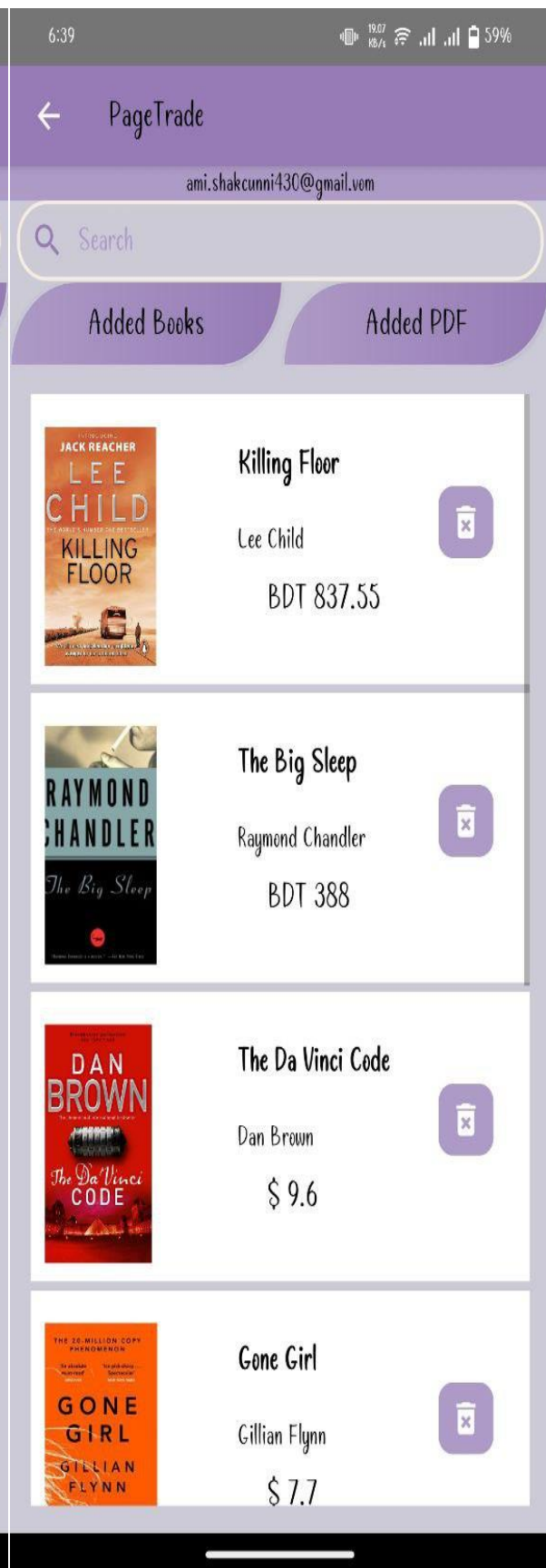
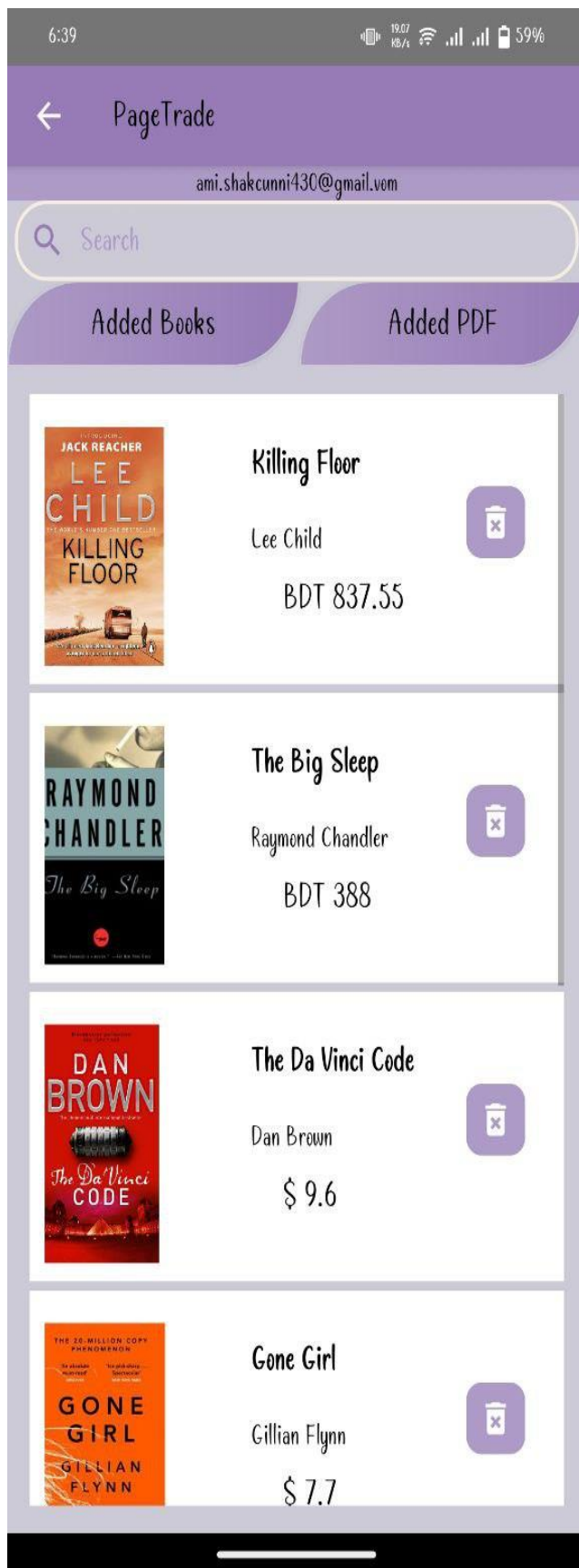
 Milk and Honey is a collection of poetry and prose about survival. About the experience of violence, abuse, love, loss, and femininity. It is split into four chapters, with each chapter dealing with a different pain.

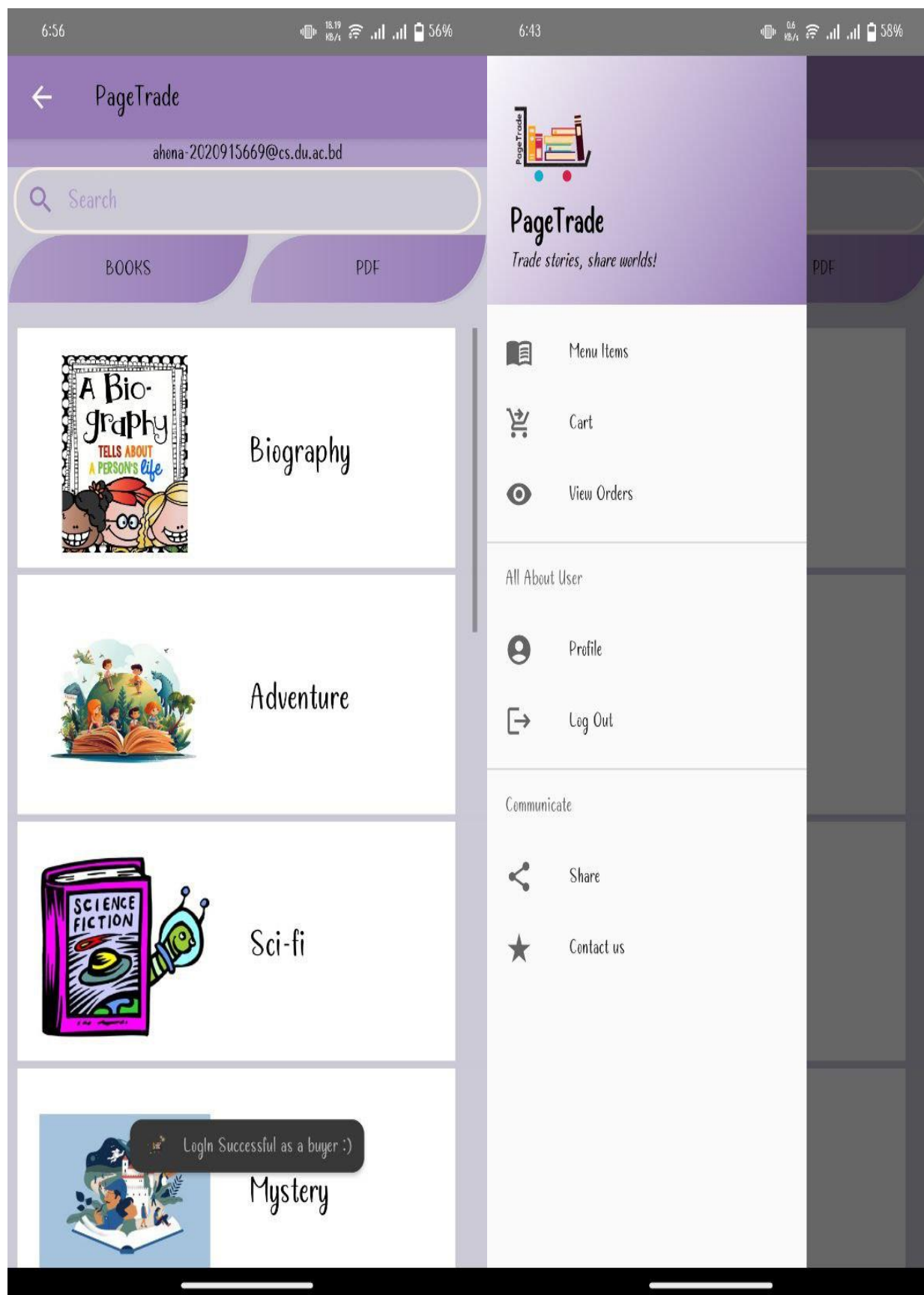
 Ahona

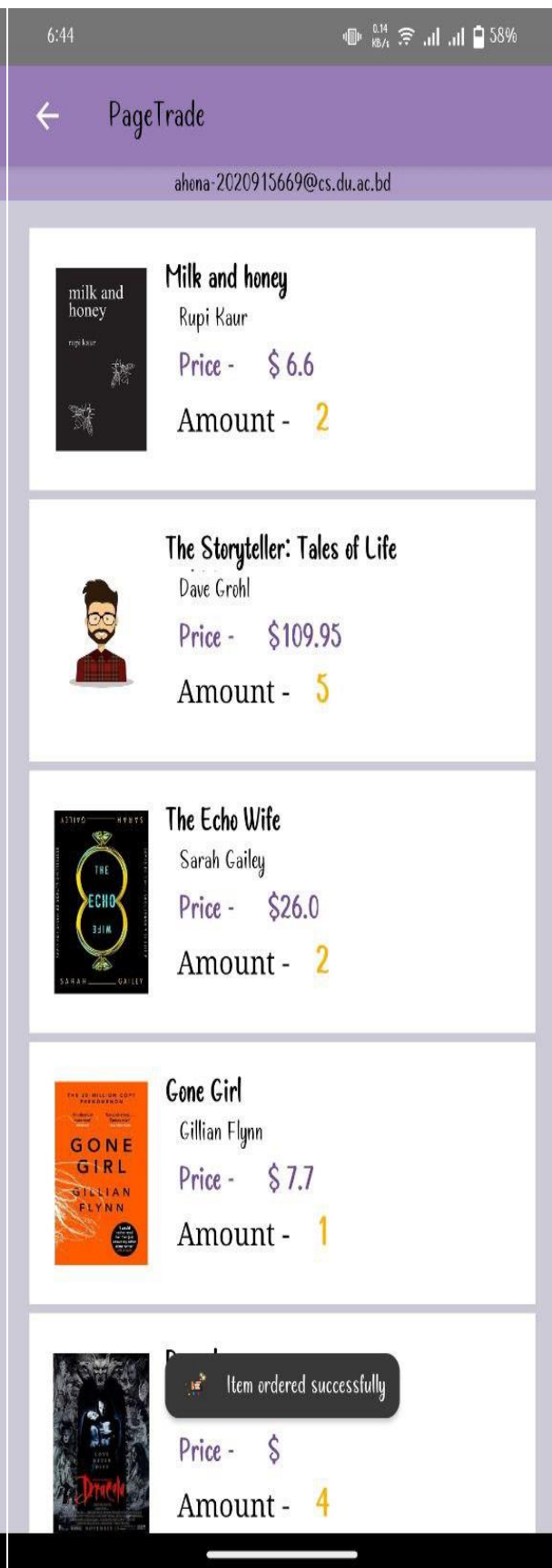
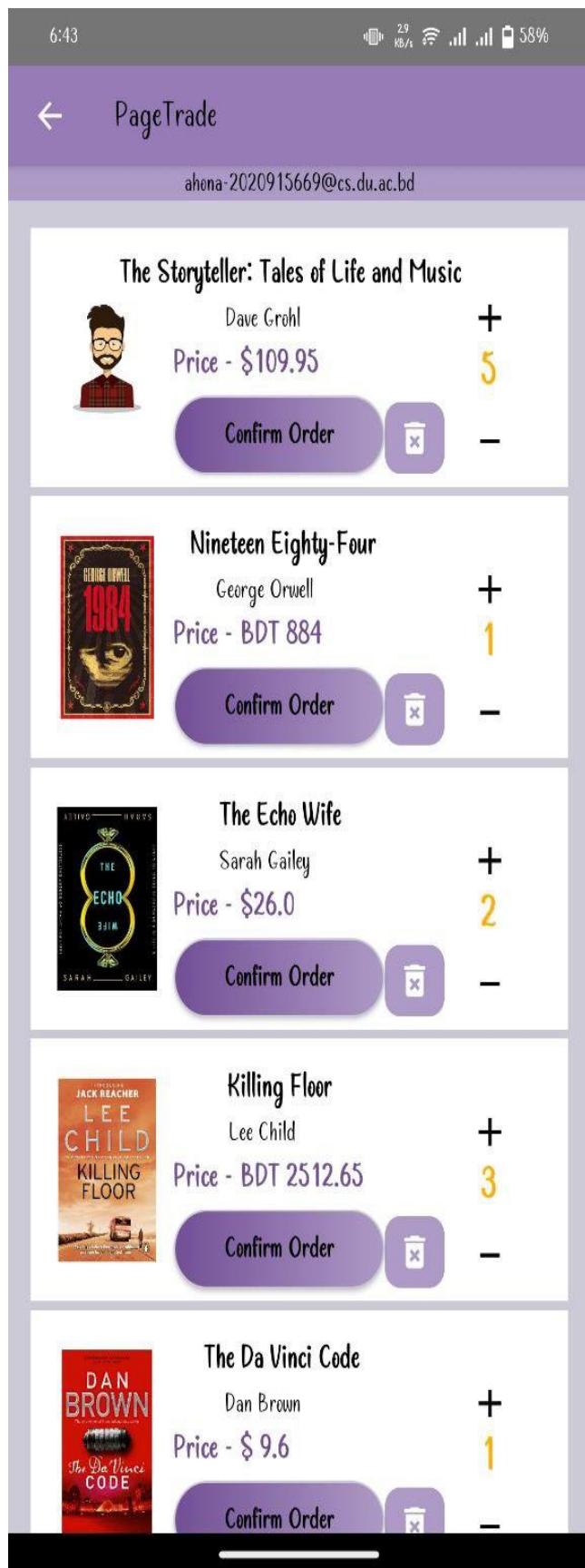
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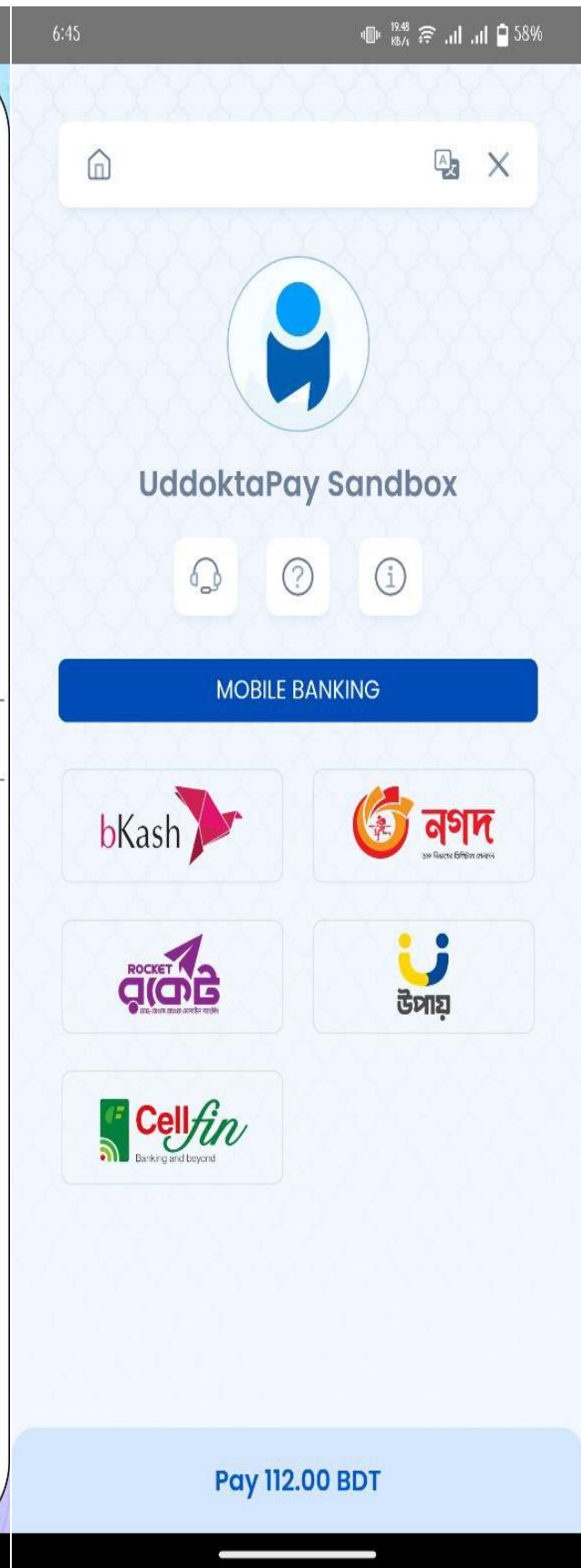
 ahona.omi0818@gmail.com

 Click to view PDF









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PAYMENT SUCCESSFUL TO
~~ahona.vini0818@gmail.com~~

from



ahona-2020915669@cs.du.ac.bd



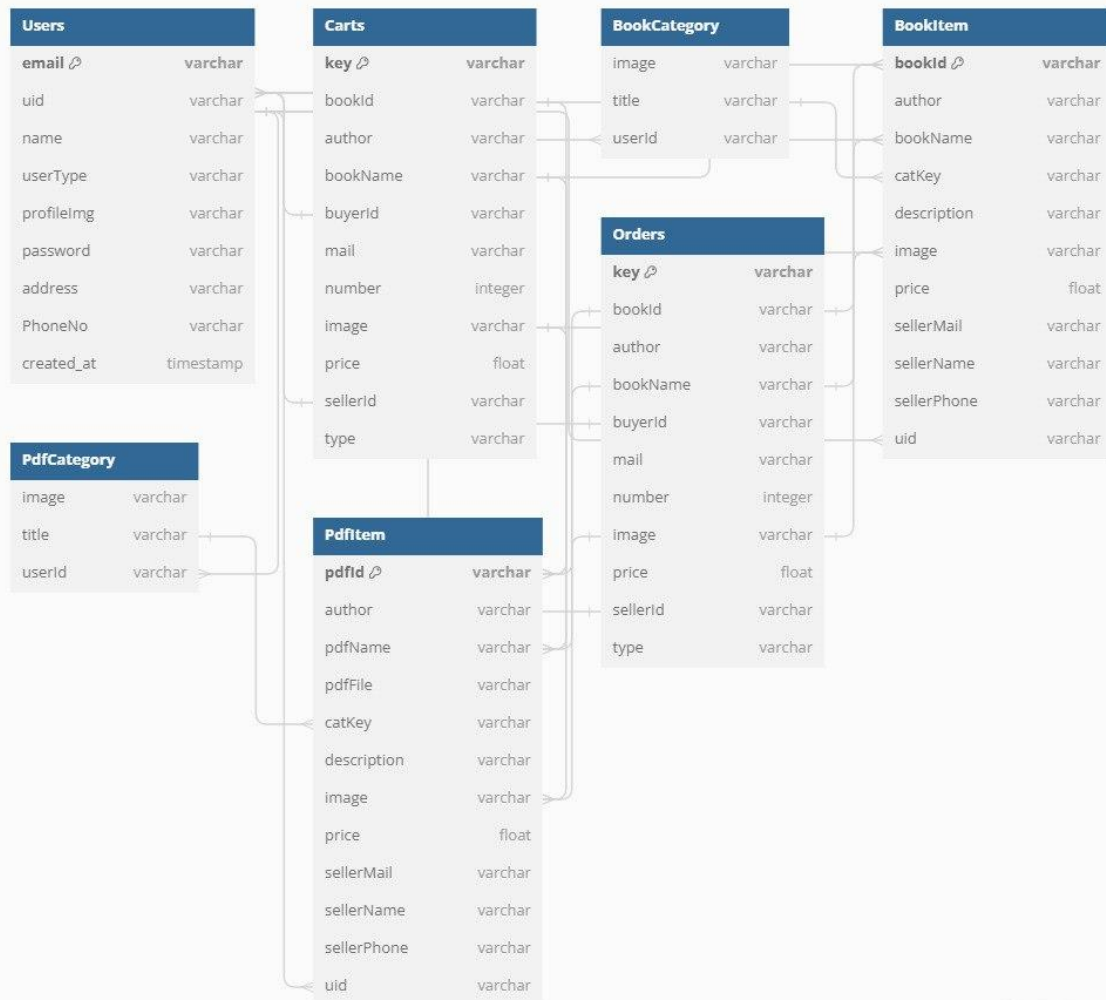
Ahona

PAY NOW





2.2 Database Schema



Project Overview

Project shortcuts

Authentication
Realtime Database
Storage
App Check

Product categories

Build
Release and monitor
Analytics
Engage

All products

Customise your navigation

Spark
No cost \$0/month
Upgrade

Page Trade

Realtime Database

Data
Rules
Backups
Usage
Extensions

https://page-trade-default-rtdb.firebaseio.com

https://page-trade-default-rtdb.firebaseio.com/

BookCategory
BookItem
Carts
Orders
PdfCategory
PdfItem
Users

Database location: United States (us-central1)

Project Overview

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Release and monitor
Analytics
Engage

All products

Customise your navigation

Spark
No cost \$0/month
Upgrade

Page Trade

Authentication

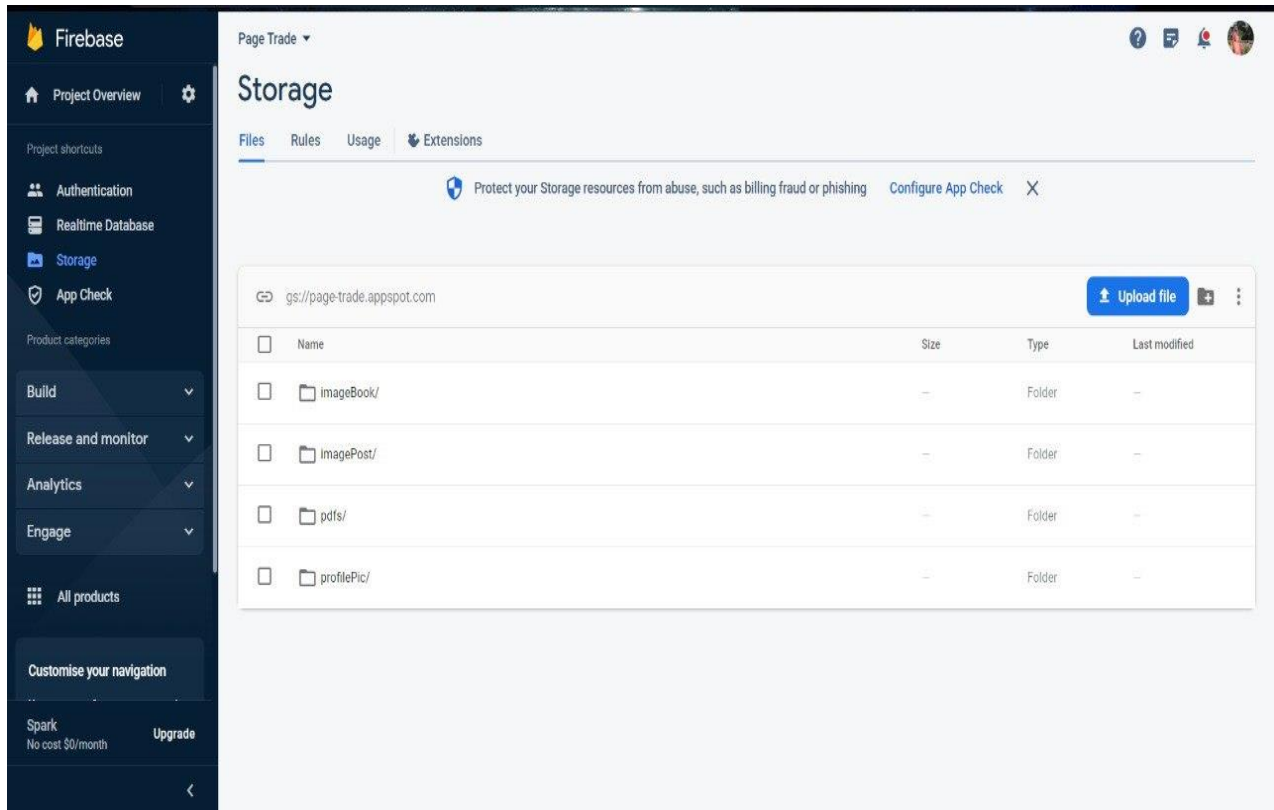
Users
Sign-in method
Templates
Usage
Settings
Extensions

Search by email address, phone number or user UID

Add user

Identifier	Providers	Created	Signed in	User UID
huf6ufduf@gmail.com		2 Nov 2023	2 Nov 2023	Pvgey28AWccLF4ZBb5vzLgVJ8fB2
jdbdjdbdj@gmail.com		2 Nov 2023	2 Nov 2023	H08mJxAQmzO6G1cVwo7BhOQ...
patelman2084@gmail.com		2 Nov 2023	2 Nov 2023	xjcs9uzyJ4QYKKnYQAcWgrPBFGB2
only4pic.69@gmail.com		2 Nov 2023	2 Nov 2023	G7whjMvI9qetHCYXed3T24ddVVA3
moniara.rahman@gmail.co...		2 Nov 2023	2 Nov 2023	tZVcc2VlopVB4iHy6mLkcy9HG2
sayedmdwaki-2020115621...		1 Nov 2023	1 Nov 2023	iMpyzuwBSpQ0JahvzplKo432Air1
saadman2020715643@cs...		31 Oct 2023	6 Nov 2023	VILA8tE3XIMxz0ZYbuOK9bJ0LNu1
saadman1032@gmail.com		31 Oct 2023	2 Nov 2023	DTIU4FC6EtT1H9PdeFJZfK1
tasrifai123@gmail.com		31 Oct 2023	31 Oct 2023	XrzbX11CvnYJCpYfbukxPtPQh5o1
joty.saha2021@gmail.com		29 Oct 2023	29 Oct 2023	opW0dTkwBofbBZAeksYtZEVuplF3

Page 22 of 25



2.3 Code Repository Link

<https://github.com/ahona-omi/PageTrade>

2.4 Video Demo Link

<https://youtu.be/qJ5ssmyuijw>

2.5 APK download Link

https://drive.google.com/drive/folders/14WdhQij2GjyaI75wQFYp7TirjDXmZsOf?usp=drive_link

3. Conclusion

3.1 Challenges and Solutions

- At first, facing a problem regarding Firebase authentication. But vast reading from different resources helped to solve that.
- A challenge was faced while loading images, and it was solved by Storage in Firebase.
- Facing an error on the SignUp page. If the password was less than 6 characters, the app crashed
- Manifest couldn't detect activity sometimes. Have to mention that activity explicitly on the manifest.
- . No proper tutorial could be found for implementing a feature. We had to merge multiple tutorials from different sources to get a proper implementation for our features. Moreover, many of the methods used in tutorials were deprecated, which caused many problems for the project. Most of them were solved by getting the equivalent information from the internet.
- First, we used a realtime database to store user information and used it to sign in or sign up, which was a huge mistake. The solution is to use FirebaseAuth to solve the problem and use email and password authentication.
- Get a problem while fetching data from Firebase to store it in RecyclerView. The solution is to be unable to populate recyclerView from the firebase. Then used FirebaseUI to populate recyclerView. Which worked.
- Facing a problem in deleting 'added items' from Firebase. Then we used to store unique key values for every item.
- Get a problem while showing the category name in the toolbar after pressing on the image in Category. Then we pass the category name into BookCategoryAdapter and PdfCategoryAdapter, then retrieve it in BookItemActivity and PdfItemActivity to show it on the toolbar.

3.2 Lessons Learned

Working as a team was the most important lesson we took away from this project, particularly because it was our first time collaborating using GitHub and Git. We gained knowledge about how to work together to solve difficulties. We assisted one another and equitably divided our labor. Real-world problem-solving techniques were taught to us. It was a fantastic and fascinating project all around. We used Java to create our app. In the OOP course the previous semester, Java was introduced to us, but we weren't quite sure what it was. Thus, while creating this application, we correctly learnt Java and OOP. In addition, we had to learn how to integrate the database, make use of all of its features, and use APIs. We now have a deeper understanding of Object-Oriented Programming and a wider understanding of the many aspects of Android programming. We discovered how to utilize the internet to our advantage while attempting to address the mistakes and difficulties. One of the key lessons learned from this project was the need of database administration and servers for developing desktop, online, and mobile applications. Our program makes use of Firebase, which allows the administrator to modify details. Additionally, we learnt how to structure our application's front end using XML and its back end using Java. We anticipate that this experience will help us improve as developers in the future.

3.3 Future Plan

The app is currently in its basic version having only the bare minimum features. We'd like to improve the user interface to make it appealing to the users. We'd also like to incorporate useful features like ...

- **Wider Content Selection:** Expand your catalog to include not only books, PDFs but also audiobooks and educational courses to cater to a broader audience.
- **International Expansion:** Consider expanding your app's availability to international markets, potentially by offering multilingual support and regional content.
- **Personalized Recommendations:** Implement advanced recommendation algorithms to provide users with personalized book suggestions based on their reading history and preferences.
- **User-Generated Content:** Allow users to contribute and sell their own content, fostering a community of independent authors and content creators.
- **Collaborations with Publishers:** Partner with publishing companies to provide access to their latest releases and back-catalogs, creating a broader range of content.
- **Subscription Services:** Introduce subscription models for unlimited access to a library of content or exclusive features, appealing to avid readers.
- **Offline Reading:** Allow users to download content for offline reading, particularly valuable in regions with limited internet access.
- **Enhanced User Engagement:** Develop features like book clubs, discussion forums, and social sharing options to boost user engagement and create a thriving community.
- **AI-Powered Features:** Integrate AI for features like intelligent search, voice commands, and automatic translation for a more intuitive user experience.
- **Partnerships and Alliances:** Form strategic partnerships with educational institutions, libraries, and technology companies to reach a broader audience.
- **Virtual Reality and Augmented Reality:** Explore the integration of VR and AR technologies to create immersive reading experiences and interactive learning tools.
- **Community Engagement:** Actively engage with your user community through surveys, feedback channels, and social media to understand their needs and preferences.