CSC 648/848 SFSU Spring 2021 Milestone 3

iShareBooks

Team 04

History Table

Milestone	Date
M3V1	04/22/2021
M2V2	04/03/2021
M2V1	04/01/2021
M1V2	03/10/2021
M1V1	03/05/2021

Links:

Github:
https://github.com/CSC-648-SFSU/csc648-04-sp21-Team04/tree/master/application/vertical-prototype/frontend

Wireframe:
https://drive.google.com/file/d/1djUja05ZTmadd33newI6ofEZKcZTXROG/view?usp=sharing

Team Information

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Table of Contents

Objective and Overview:

  ishareBook is the book sharing website designed for saving students time and money buying new textbooks. The main objective for isharebooks is to provide a user friendly environment for buy, sell and trade experience. In Milestone 3 we have implemented our horizontal prototype which provides the look and feel of our application and is primarily focused on the UI/UX.

1. Data Definitions V3

1. **General User:** A user who can generally look up the website and has the least privilege to use website features. A general user may **register** to gain additional privilege

 1.1.   **Registration:** A general user shall be able to create an account.
 1.2.   **Account Contains:**
  1.2.1.   **Username:** Needs a username to create an account.
  1.2.2.   **Email:** Needs a unique email to create an account.
  1.2.3.   **Password:** Needs a password that gets hashed for security purposes.
  1.2.4.   **Accept Terms of Use:** Must select this to create the account.

2. **Registered User:** A user who can look up the website and has the most privilege to use website features. A general user shall be able **login** in order to use all of these features and services.

 2.1.   Can login to the system.
  2.1.1.   **Email:** Needs to login with a unique email.
  2.1.2.   **Password:** Needs to provide a password.
 2.2.   Has the ability to start transactions for textbooks.
 2.3.   **Buyers:** All registered users are buyers by default. They can buy textbooks.
 2.4.   **Sellers:** Once a user posts a book for sale, they are considered a seller as long as they have at least 1 book for sale.
 2.5.   **Profile: A profile contains username, email, ratings, and recent transactions.**
  2.5.1.   **Username:** The username of a logged in user.
  2.5.2.   **Email:** The unique email of a logged in user.
  2.5.3.   **Ratings:** The ratings given to this registered user by other registered users.
  2.5.4.   **Recent Transactions:** The overall transactions made by this registered user.

3. **Textbook:** The item that is sold/traded by sellers, and bought by buyers/registered users.
   3.1. **On Sale Textbooks:** Books can be placed for other registered users to buy.
   3.2. **Traded Textbook:** Books can be traded for other books.
   3.3. **Auctioned Textbooks:** Sellers can set their own price, and buyers can place offers for it.
   3.4. **Free Textbooks:** Buyers can buy free textbooks.
   3.5. **Images:** Textbook image is a single image that contains the cover only.
      3.5.1. **Size:** 300 x 300 & 500 x 500
      3.5.2. **Storage:** Local storage and database
      3.5.3. **Format:** jpg/png

4. **Textbook Posts:** A textbook post shall be posted by a registered user who is a seller, trader, for auction, or for free.
   4.1. **Contains**: Title, Author, Image, Condition, Price.
      4.1.1. **Title:** The title of a textbook
      4.1.2. **Author:** The author of a textbook.
      4.1.3. **Image:** The cover image of a textbook.
      4.1.4. **Price:** The price of a textbook (for sale and for auction only).

5. **Payment Type:** A payment type shall be selected by all the registered users at the time of transaction.
   5.1. **Types Include:** Credit Card, Bank Account, Debit Card.
      5.1.1. **Credit Card:** Payment shall be paid with a credit card.
      5.1.2. **Bank Account:** Payment shall be paid with a bank account.
      5.1.3. **Debit Card:** Payment shall be paid with a debit card.

6. **Receipt:** A proof-of-purchase document after completion of transaction.
   6.1. **Receipt Includes:** Username, Price, Item info.
      6.1.1. **Username:** The user's name who bought an item.
      6.1.2. **Price:** Price of the item.
      6.1.3. **Item info:** The information of an item (textbook).

7. **Chat Bot:** An assistance bot which shall be able to answer basic website related questions to all kinds of users.
   7.1. **Speech:** The chatbot shall be able to speak back.
   7.2. **Text:** The chatbot shall be able to reply back with a text.

8. **Tutoring Subscription:** A tutoring subscription is a way of making revenue from this website and shall only be subscribed by the registered users.
   8.1. **Includes:** Video, Username, Title.

8.2.   **Video:** A tutorial video shall be posted by the registered users.
  8.2.1.   **Size:** 1000px at full screen, 700 px as default.
  8.2.2.   **Format:** .mp4
8.3.   **Username:** The username of whoever posted the tutorial video.
8.4.   **Title:** The title of the tutorial video.

2. Functional Requirements V3

Priority 1

1.   **General User:**
 1.1.   A general user shall be able to search books without creating an account.
 1.2.   A general user shall be able to register for an account.
 1.3.   A general user shall be able to search for the available textbooks.
 1.4.   A general user shall be able to search for the textbooks available for the trade.
 1.5.   A general user shall be able to search for the textbooks available for free.
 1.6.   A general user shall be able to filter searches.
 1.7.   A general user shall be able to view the privacy policy.
 1.8.   A general user shall be able to search a textbook with a department.
 1.9.   A general user shall be able to select the textbooks without creating an account.
 1.10.   A general user shall be able to view only the inquiries related to the post.
 1.11.   A general user shall comply with the website terms and conditions.

2.   **Registered User**
 2.1.   A registered user shall be able to log in to the website account.
 2.2.   A registered user shall be able to log out from the website account.
 2.3.   A registered user shall be able to edit his/her account profile.
 2.4.   A registered user shall be able to list books for sale.
 2.5.   A registered user shall be able to list books for trade.
 2.6.   A registered user shall be able to list books for a free giveaway.
 2.7.   A registered user shall be able to buy books from other sellers.
 2.8.   A registered user shall be able to trade books with other sellers.
 2.9.   A registered user shall be able to get books free of cost from other sellers.
 2.10.   A registered user shall be able to edit/modify the book listing.
 2.11.   A registered user shall be able to reply to inquiries from the registered users.
 2.12.   A registered user shall be able to ask the live chatbot for website-related questions.
 2.13.   A registered user shall be able to filter searches.
 2.14.   A registered user shall be able to search books by department names.
 2.15.   A registered user shall have a rating.

2.16.   A registered user shall be able to get a receipt of their transactions.

2.17.   A registered user shall be able to post a tutorial video for subscription.

2.18.   A registered user shall be able to purchase a subscription for tutorial video.

3.   Profile

3.1.   A profile shall be created for all registered users.

3.2.   A profile shall be created when the account is made.

3.3.   A profile rating shall be visible to all registered users.

3.4.   A profile shall be deleted from the system.

3.5.   A profile shall have a 5 star rating of the registered users by default.

3.6.   A profile shall be edited by the registered user.

3.7.   A profile shall be keeping the records of the textbooks listed.

3.8.   A profile shall be keeping the records of the textbooks bought.

3.9.   A profile shall be added to favorites/save by other registered users.

3.10.   A profile's recent transaction shall be visible to other registered user

3.11.   A profile shall be able to see their favourites.

4.   Payment Type

4.1.   A payment type shall be a bank account.

4.2.   A payment type shall be a debit card.

4.3.   A payment type shall be a credit card.

4.4.   A payment type shall be PayPal account.

4.5.   A payment type shall be selected by all buyers.

4.6.   A payment type shall belong to each registered user.

4.7.   A payment type shall be selected at the time of order confirmation.

5.   Textbook

5.1.   A textbook shall be posted on sale only by the registered users.

5.2.   A textbook shall be accessible with the textbook name.

5.3.   A textbook shall be accessible with the department name.

5.4.   A textbook shall be posted for auctions by the registered user.

5.5.   A textbook shall be posted for trade by the registered user.

5.6.   A textbook shall be posted for free by the registered user.

5.7.   A textbook shall be purchased by the registered users.

5.8.   A textbook shall be publicly available to all registered users.

5.9.   A textbook shall be publicly available to all general users.

6.   Free Books

6.1.   A free textbook shall be listed as free of cost.

6.2.   A free textbook shall be visible to registered users.

6.3.   A free textbook shall be visible to the general user.

6.4.   A free textbook shall have a finalized purchase.

7. Traded Books

7.1.   A traded Book shall be available for all general users.

7.2.   A traded textbook shall be exchanged between registered users.

7.3.   A traded textbook shall be in use or in new condition.

7.4.   A traded textbook shall be listed as available for trade.

7.5.   A traded textbook's trade shall be finalized.

7.6.   A traded textbook shall be removed after the trade is done.

7.7.   A traded textbook shall be listed as available for trade.

8. Textbook Image

8.1.   A textbook image shall be resized.

8.2.   A textbook image shall be the image of a book.

8.3.   A textbook image shall belong to each textbook post.

8.4.   A textbook image shall be posted by the seller.

8.5.   A textbook image shall be clearly visible to all users.

8.6.   A textbook image shall be compatible in any device.

9. Receipt

9.1.   A receipt shall be made for all purchased textbooks.

9.2.   A receipt shall belong to each order of the textbook.

9.3.   A receipt shall be uniquely made for an order.

9.4.   A receipt shall be a part of the checkout process.

10. Security Upgrades/Upkeep

11.1. Database security and Encryption.

11.2. Speed, Caching and Optimization.

11.3 UI/UX.

<u>Priority 2</u>

1. General User:
    1.1.   A general user shall be able to subscribe to the website via email.
    1.2.   A general user shall ask the live chat box for website-related questions.

2. Registered User:
    2.1.   A registered user shall be able to report general users and their illegitimate activities to the website support team.
    2.2.   A registered user shall be able to report the registered users and their illegitimate activities to the website support team.
    2.3.   A registered user shall be able to block the registered users.
    2.4.   A registered user shall be able to invite their friends by message.
    2.5.   A registered user shall be able to subscribe to the website via email.

3. Profile
    3.1.   A profile shall be tracking the inventory for all posts.
    3.2.   A profile shall be editable for all of its fields.

4. Payment Type
    4.1.   A payment type shall be selected in real time.

5. Textbook
    5.1.   A textbook shall be searched by ISBN.
    5.2.   A textbook shall be returned to the seller.

6. Free Books
    6.1.   A free textbook shall be claimed on a first come first serve basis.
    6.2.   A free textbook shall be removed after a registered user has claimed it.

7. Traded Books

7.1.   A traded textbook shall meet the seller's requirements.

8.   Auction Books
8.1.   A textbook shall be posted on auction.

9.   **Textbook Image**
9.1.   A textbook image shall be an appropriate image.

10.   Receipt
9.2   A receipt shall be sent to the email.
9.3   A receipt shall be printed out via email.

11.   Rating
11.1.   A rating shall be modified by the origin user.
11.2.   A rating shall contain comments regarding the registered user's experience.
11.3.   A rating shall be removed by origin user.

12.   Tutorial Video
12.1.   A tutorial video shall be recorded by the registered users.
12.2.   A tutorial video shall be available on search.
12.3.   A tutorial video shall be posted by the registered users.
12.4.   A tutorial video shall be subscribed by the registered users.

13.   Auctioned Books
13.1.   An auctioned book shall be posted on auction by the registered users.
13.2.   An auctioned book shall be purchased by the highest bidder.
13.3.   An auction book shall be available on search to all users.

Priority 3

1. General User:
   1.1. A registered user shall be able to subscribe for a website membership.
   1.2. A general user shall be able to search for books with any keyword.

2. Registered User:
   2.1. A registered user shall be able to subscribe for a membership.
   2.2. A registered user shall be able to live chat with other registered users.
   2.3. A registered user shall be able to make an offer for auction.
   2.4. A registered user shall be able to save the books.
   2.5. A registered user shall be able to search for books with any keyword.

3. Profile:
   3.1. A profile shall be reported by the registered users.

4. Subscriber:
   4.1. Subscriber shall have access to paid content.
   4.2. Subscriber shall have access to tutoring videos.
   4.3. Subscriber shall have a membership type.

5. Security Upgrades/Upkeep
   5.1. Infrastructure Upgrades
   5.2. Feature Upgrades

3. Wireframes Based on your Mockups/Storyboards V2 (detailed)

1. https://drive.google.com/file/d/1djUja05ZTmadd33newI6ofEZKcZTXROG/view?usp=sharing
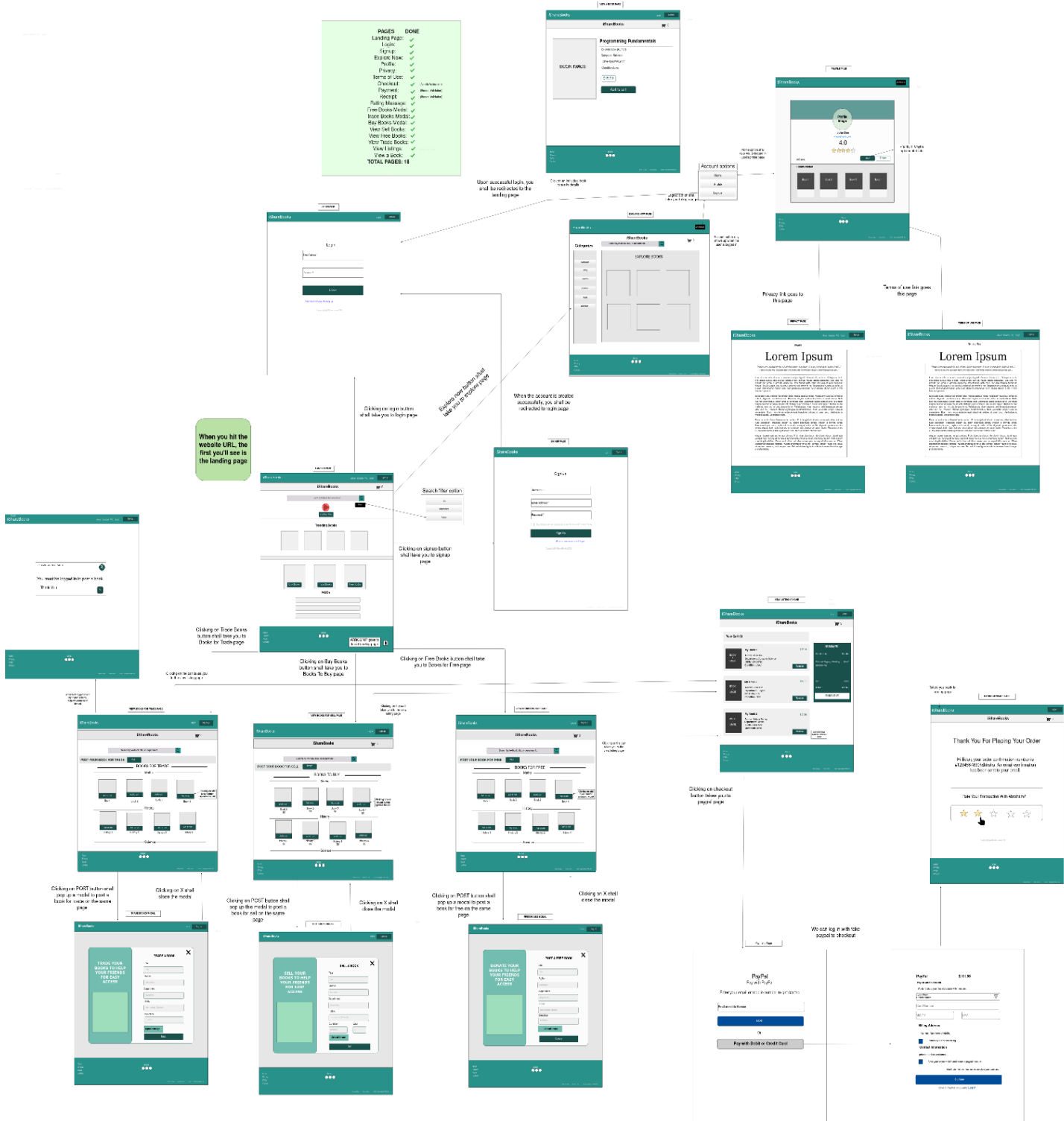
4.High level database architecture and organization V2 (detailed)

User Rating System

1.BUSINESS RULES:

1. **Registered User**
    a. A registered user shall be either a buyer or a seller.
    b. A registered user shall be able to log into one account.
    c. A registered user shall have a rating.
2. **Buyer**
    a. A buyer shall be able to buy zero or many books.
    b. A buyer shall be able to post many user ratings.
    c. A buyer shall be able to post a payment type.
3. **Seller**
    a. A seller shall be able to sell many books.
    b. A seller shall be able to post many user ratings.
4. **Textbook**
    a. A textbook shall be listed by many sellers.
    b. A textbook shall be sold by many sellers.
    c. A textbook shall be purchasable by one registered user.
5. **Transaction**
    a. A transaction shall be posted after the completion of one purchase.
    b. A transaction shall have many receipts.
6. **Rating**
    a. A user rating shall be posted by many buyers or sellers.
    b. A user rating shall belong to one registered user.
7. **Payment Type:**
    a. A payment type shall belong to one buyer.
8. **Receipt:**
    a. A receipt shall be sent to one seller.
    b. A receipt shall belong to one transaction.

2.ENTITIES

1. **Registered User (STRONG)**
   a. User_id: To identify each user's actions and login status (int).
   b. Email: To identify each user and save their credentials in the database (string &|| int).
   c. Password (string &|| int)

2. **Buyer (WEAK)**
   a. Buyer_id: To identify each buyer's actions and login status (int).
   b. Username: To be used for buying and transactions (string &|| int).

3. **Seller (WEAK)**
   a. Seller_id: To identify each seller's actions and login status (int).
   b. Username: To be used for selling and transactions (string &|| int).

4. **Book (STRONG)**
   a. Book_id: To identify each book uniquely (int).
   b. Title: To be saved in the database and displayed on the frontend and search results (string &|| in).
   c. Author: To be saved in the database and displayed on the frontend (string).
   d. Department: To be saved in the database and displayed on the frontend and search results (string).
   e. Isbn: Null for now, will be added when the seller posts a book (in).
   f. Cost: Cost that goes with each book to be sold (int/double).

5. **Transactions (WEAK)**
   a. Transaction_id: To identify an individual transaction (int).

6. **Rating (WEAK)**
   a. Rating_id: To identify each rating coming after the checkout is done (int).
   b. Rating: The rating count which is calculated by taking the average of all the ratings for a user (int).
   c. Comment: Optional but will be working as a feedback for each seller (string &|| int).
   d. Transaction_id: Will reference the transaction which was done before rating the seller (int).
   e. To: To a seller. (string &|| int)
   f. From: From a buyer (string &|| int).

7. **Payment Type (STRONG)**
    a. Payment_id: To identify the payment type (int).
    b. Seller_id: To identify which seller is picking the payment type for the transaction (int).
    c. Type: The type of the payment type that the buyer will pick (string).

8. **Receipt (WEAK)**
    a. Receipt_id: To identify each receipt for a checkout (string).
    b. Transaction_id: Needs it to know which transaction the receipt is for (int).

4.ENTITY RELATIONSHIP DIAGRAM (ERD)

DATABASE MODEL

Rating
- rating_id INT
- transaction_id INT
- origin_uid INT
- target_uid INT
- rating INT
- comment VARCHAR(255)
- Indexes

Billing Info
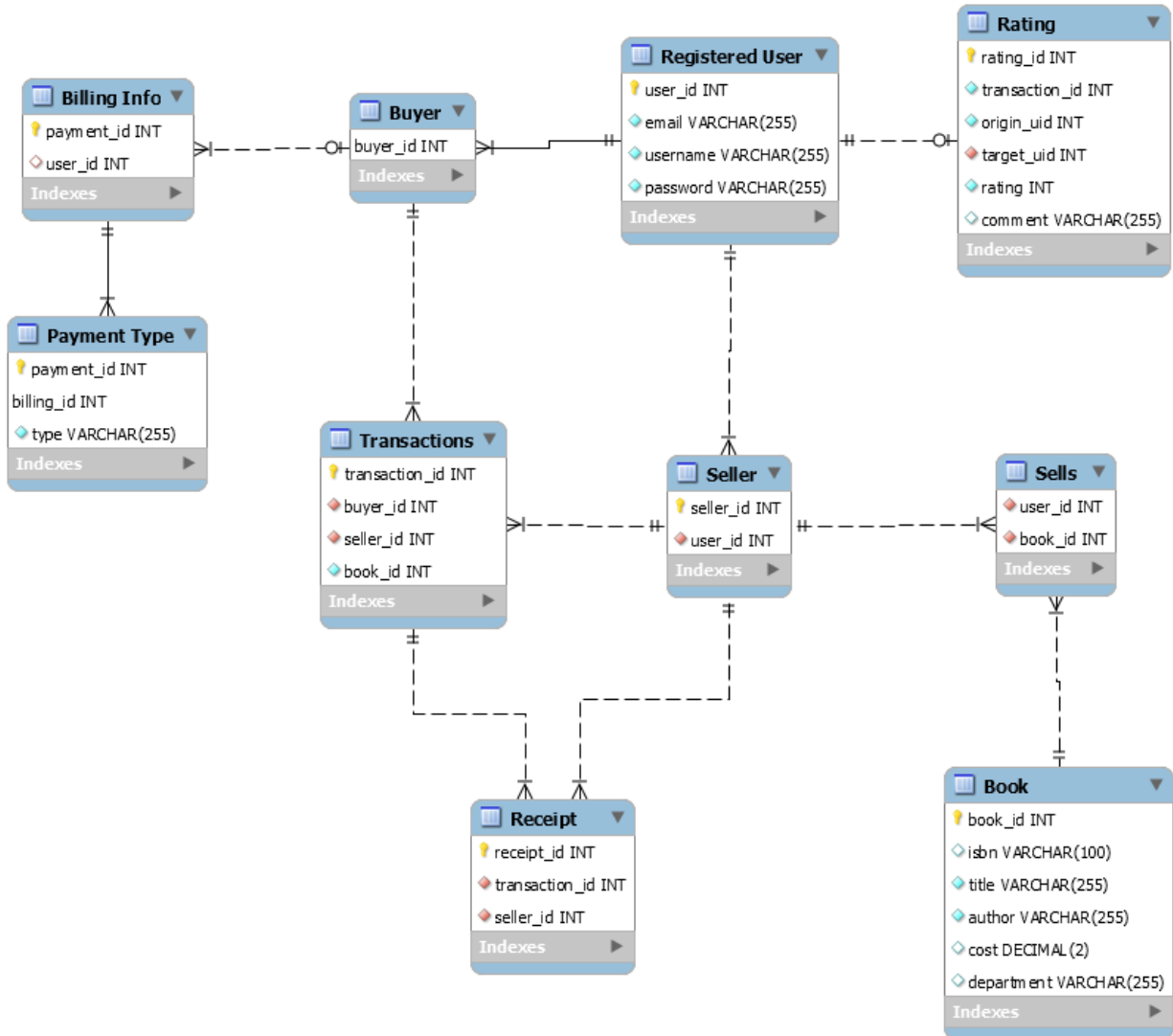- payment_id INT
- user_id INT
- Indexes

Buyer
- buyer_id INT
- Indexes

Registered User
- user_id INT
- email VARCHAR(255)
- username VARCHAR(255)
- password VARCHAR(255)
- Indexes

Payment Type
- payment_id INT
- billing_id INT
- type VARCHAR(255)
- Indexes

Transactions
- transaction_id INT
- buyer_id INT
- seller_id INT
- book_id INT
- Indexes

Seller
- seller_id INT
- user_id INT
- Indexes

Sells
- user_id INT
- book_id INT
- Indexes

Receipt
- receipt_id INT
- transaction_id INT
- seller_id INT
- Indexes

Book
- book_id INT
- isbn VARCHAR(100)
- title VARCHAR(255)
- author VARCHAR(255)
- cost DECIMAL(2)
- department VARCHAR(255)
- Indexes

DBMS:

We will use MySQL to create the database because there are already multiple powerful tools such as MySQL Workbench that allow us to easily create and test the integrity of each entity relation.

Media Storage
1. Book Cover Image
   a. Storage: MEDIUMBLOB
   b. Types Supported: JPEG, PNG
   c. Size Limit: 300KB

Search Filter & Architecture Implementation
1. Search Algorithm:
   a. The search algorithm will consist of user input into the search bar. The user may input book attributes, departments, and/or seller's attributes. After parsing and confirming the validity of the input, multiple queries will be sent to the database. All valid queries will return a list of book objects (**discuss). A book object will store the book's attributes (i.e., title, author, department, cost, and seller).
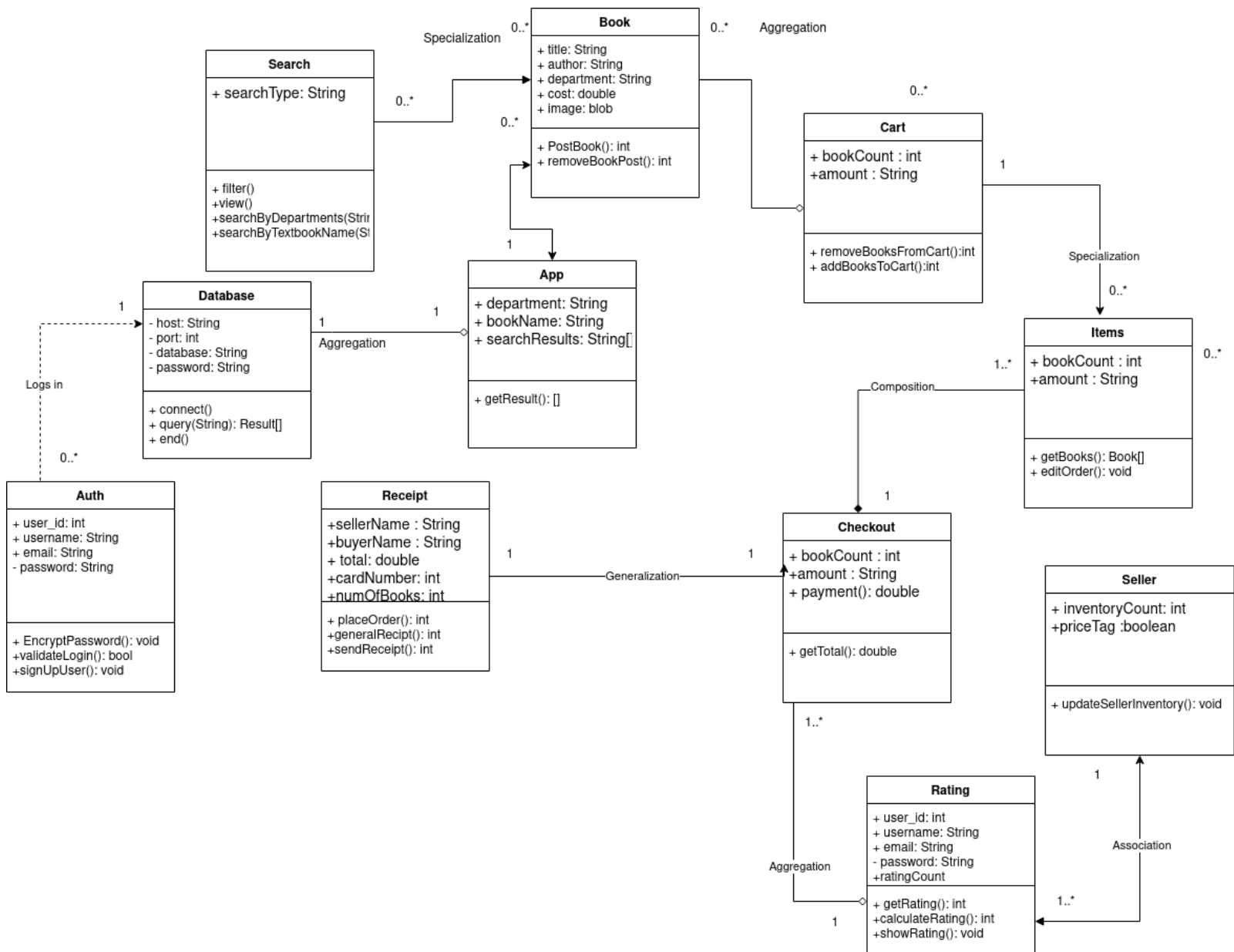
Organization of User Search Results:
1. Search results shall be organized in the order as follows:
   b. By Title
   c. By Author
   d. By ISBN
   e. By Cost
   f. By Seller (username/rating)
   g. By Department (English, Literature, History, CompSci, etc.)
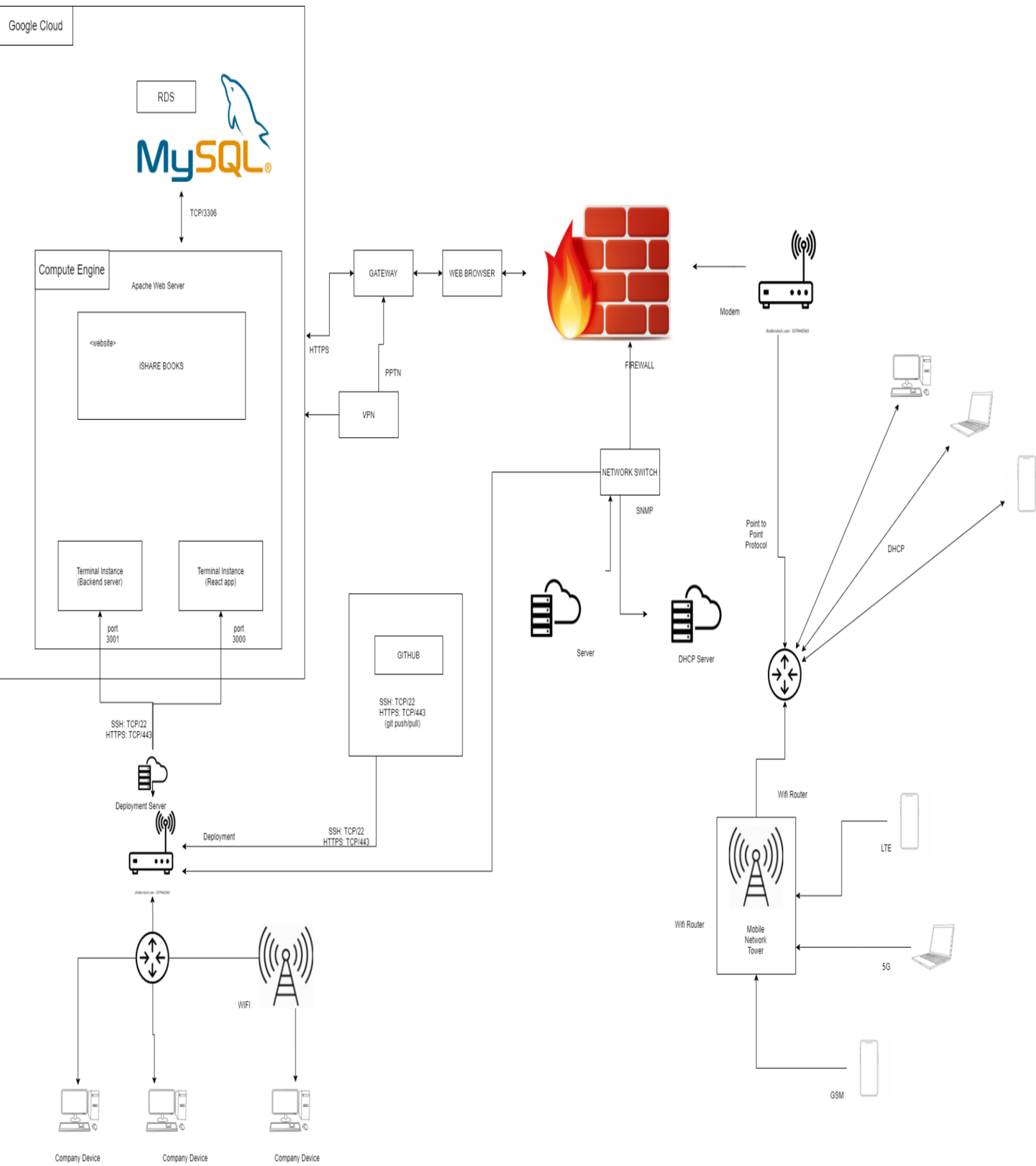
DB Search Terms (by table):
1. Book
   a. title: title of book
   b. author - author of book
   c. department - department of book
   d. isbn - International Standard Book Number
   e. cost: price of book
2. Ratings
   a. user_id (target and source user_id)
3. Transactions
   a. transaction_id

5. High Level Diagrams V2 (detailed)

UML (Rating System)

Network Diagram

Google Cloud

RDS

MySQL®

TCP/3306

Compute Engine

Apache Web Server

<website>

iSHARE BOOKS

Terminal Instance (Backend server)

Terminal Instance (React app)

port 3001

port 3000

SSH: TCP/22
HTTPS: TCP/443

Deployment Server

GATEWAY

WEB BROWSER

HTTPS

PPTN

VPN

FIREWALL

Modem

shutterstock.com · 1379442565

NETWORK SWITCH

SNMP

Server

DHCP Server

GITHUB

SSH: TCP/22
HTTPS: TCP/443
(git push/pull)

SSH: TCP/22
HTTPS: TCP/443

Deployment

shutterstock.com · 1379442565

WIFI

Company Device

Company Device

Company Device

Point to Point Protocol

DHCP

Wifi Router

Wifi Router

Mobile Network Tower

LTE

5G

GSM

6. Detailed List of Contributions Vertical and Horizontal Prototype

1. **Yangesh KC** -*Team Lead*

ykc@mail.sfsu.edu

As a Team Lead:
- *Accountable for following M3 guidelines and ensuring all requirements are met.*
- *Directly supervise team members with daily regular interactions, including managing teams work load.*
- *Managed and oversaw team progress setting up deadlines, group discussion and resolving issues, debugging and testing Product Features.*

As a Team Member:
    Milestone 2:
1. *Main contributor to Network and Deployment Diagrams.*
2. *Partial Contribution to Identifying Key risks and planning mitigations.*
3. *Contributed to UML diagrams, Project Management Section.*
4. *Partial contribution to ERD and Database Model.*

    Vertical Prototype:
1. *Implemented Suggestion Feature in the search bar.*
2. *Main Contributor to the Footer Section.*
3. *Partial contribution for Project Deployment.*

    Horizontal Prototype:
1. *Implemented the Explore now page*
2. *Implemented the Footer Design and Layout*
3. *Implemented the Books Not Found Model*
4. *Contributed to the Wireframe Design and Testing*

2. **Danish Siddiqui   -*Frontend Lead***

dsiddiqui@mail.sfsu.edu

Milestone 2:
1. Partial contribution to the Data definitions, Mockups and Storyboards, UML and Network diagrams.
2. Contributed to peer review.

Vertical Prototype:
1. Front-end Vertical SW Prototype Architecture Design
2. Reviewed and Contributed to login/signup validation and implemented Landing page components.
3. Implemented Search Bar Functionality and Filter Components
4. Helped to resolve front-end css and routing issues.

Horizontal Prototype:
1. Implemented the BuyBooks Page, TradeBooks and FreeBooks Page.
2. Implemented the styling for most of the pages.
3. Fixed post books models for all services.
4. Contributed to the Wireframe Design and Testing.
5. Implemented viewBooks, Card, ViewListing, and Cart functionality.
6. Implemented and set up redux for more efficient data manipulation.
7. Implemented the protected routes for our logged in users.
8. Implemented the security check logic on posting and checking out books for logged in users only.
9. Implemented total amount and dialog box pop ups.
10. Fixed the search request functionality on frontend side.
11. Implemented search filter function on frontend.

3. **Zaid Alkhatib   -*Backend Lead***

zalkhatib@mail.sfsu.edu

Milestone 2:
1. Main Contributor to the High Level API and Algorithms section.
2. Partial contribution to Identifying risks, Network Diagrams and Project Management details.
3. Partial Contribution to ERD section

Vertical Prototype:
1. Build Login and Registration for the backend.

2. *Created AWS database*
   3. *Assisted Frontend to resolve data retrieval issues.*
 Horizontal Prototype:
   1. *Implemented the Payment Layout and Design*
   2. *Implemented the Footer Design and Layout*
   3. *Implemented the Books Not Found Model*
   4. *Contributed to the Wireframe Design and Testing*

4. **Mark Jovero**   *-Backend Support*

mjovero@mail.sfsu.edu

 Milestone 2:
   1. *Contributed to high level architecture and design.*
   2. *Partial Contribution to UML, Network Diagrams and Identifying Key Risks.*
 Vertical Prototype:
   1. *In charge of Project Deployment via AWS.*
   2. *Main contributor to books.js*
   3. *Contributed to backend image archive and rendering.*
   4. *Assisted to debug and resolve Media Storage in the backend.*

 Horizontal Prototype:
   1. *Created AboutUs, Profile, and Contact pages.*
   2. *Implemented onClick logic for viewBook*
   3. *Checked validity of Priority 2 functional requirements.*
   4. *Created Rating table to be used in frontend profile rating.*
   5. *Deployment of horizontal prototype.*

5. **Abishek Neralla**   *-Backend Member*

aneralla@mail.sfsu.edu

Milestone 2:
  1. *Partial contribution to UML and Database Model Diagrams.*
  2. *Contributed to group discussions and peer review.*

Vertical Prototype:
  1. *Contributed to the services section on the front-end.*
  2. *Implemented UI/UX for the services section.*

Horizontal Prototype:
  1. *Implemented the Footer Links*
  2. *Reviewed Documents*
  3. *Implemented the Privacy Page*

6. **Pramod Khatri**   *-Frontend Member*

pkhatri@mail.sfsu.edu

Milestone 2:
  1. *Partial contribution on Mockups and storyboards.*
  2. *Partial Contributed to data definitions V2.*

Vertical Prototype:
  1. *Implemented UI/UX and validation for the Login page.*
  2. *Contributed to the FAQ section on the front-end.*

Horizontal Prototype:
  1. *Implemented the Checkout and Login Page.*
  2. *Implemented the Checkout and Login Wireframes*
  3. *Implemented the Links for Terms of Use*

7. **Aryanna Brown**   *-Frontend Member*

abrown22@mail.sfsu.edu

Milestone 2:
  1.*Contributed to Mock-ups and storyboards.*
  2.*Partial Contribution to data definitions V2.*

Vertical Prototype:
  1. *Implemented UI/UX and validation for the Registration page.*

Horizontal Prototype:
1. *Implemented the View Books and Sign Up Page*
2. *Implemented the WireFrames for the View Books and SignUp Page*

8. **Yuhua Wu**   *-Frontend Member*

ywu23@mail.sfsu.edu

Milestone 2:
1. *Contributed to storyboard and UML group discussions.*

Vertical Prototype:
1. *Designed and Implemented the UI/UX services section.*
2. *Implemented the four different buttons for services section*
3. *Service section included responsive and interactive features*

Horizontal Prototype:
1. *Worked on Wire Frames.*
2. *Implement Term of Use and Term of Sale*
3. *Implement Term of Use and Term of Sale*