

SW Engineering CSC 648/848 Fall 2022

Project: Bill Splitting Web App

FunBill

Team 01 = Team Fun

Denyse Luzon	Team Lead, dluzon1@sfsu.edu
Bhagdeep Sandhu	Database Master
Faiyaz Chaudhury	Backend Lead
Kaung Nay Htet (Kevin)	Backend Team
Poornank Purohit	Frontend Lead
Tolby Lam	Frontend Team, GitHub Master

Milestone 3

Milestone/Version	Date
M3V1	11/10/2022
M3V2	—

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Section I: Data Definitions V3

1. **Administrative User:** a registered user with additional privileges to help keep the web application safe. Differentiated from a regular registered user by a leading “9” in their ID (which can be found in the database), and has a separate tab on the website’s navbar where admin privileges can be viewed.
2. **Bill:** an external transaction uploaded to a FunBill Transaction to be used in the application.
3. **Birthday List:** a list containing all the user’s friends, who have also toggled birthday lists on.
4. **Categories:** an attribute or tag given by the user to organize transactions
5. **Chat Box:** a social feature that allows registered users to communicate one on one with other registered users.
6. **Currency Type:** the type of currency being used in a transaction—must be a member of Currencies Supported
7. **Currencies Supported:** the total set of currencies supported by FunBill
8. **Currency Conversion:** a conversion between two different currency types
9. **FunBill Transaction:** a collection of Bills uploaded to FunBill with a total cost that is dynamically split between users or a group.
10. **FunBill Transaction Storage:** a transaction that has yet to be completed will be stored within the transaction storage.
11. **FunBill Transaction Log:** a log of all completed transactions
12. **General User:** a user that uses the web application without creating an account
13. **Groups:** a collection of users that will make up group
14. **Home Feed:** a social feature that can post/display posts of registered users who use the application. It consists of registered users' friends' posts and transactions
15. **Individual Receipt:** a copy of the Transaction Payment online.
16. **PIN:** a verification method to allow users certainty that they are paying the right person.
17. **Registered User:** a user that has created an account within the web application
18. **Reminders:** an alert to remind the receiving user that the transaction has been given and is due soon

19. **Scan Receipt:** scan receipt retains the data that was scanned from the physical copy of a receipt.
20. **Search:** users can use a search function to look up other users and/or past transactions
21. **Simplified Debt:** a currency value that is derived from a series of transactions between a group of two or more users.
22. **Singles:** a one-on-one user transaction.
23. **Transaction Payment:** an exchange of currency between two or more users in order to settle a FunBill transaction, typically of the amount either dictated by the transaction or the simplified debt algorithm.
24. **Transaction Payment Type:** each payment will have a method of payment, which will be one of the following: cash, Visa, Mastercard, American Express, PayPal, or CashApp.
25. **Transaction Pay Request:** a request sent from one user to another to pay an amount specified.
26. **Transaction Payment Request Description:** a Transaction pay request will have a Transaction pay request description to describe the reason for the payment request.

Section II: Functional Requirements V3

Priority 1

1. General Users

- 1.1 A General user shall be an account
- 1.2 A general user shall be allowed to use the FunBill web application to participate in transactions
- 1.3 A general user shall have the option to sign up for an account and become a registered user

2. Registered Users

- 2.1 A registered user shall be an account
- 2.2 A registered user shall be able to search through their transactions
- 2.3 A registered user shall be able to search for other registered users

3. Groups

- 3.1 A group shall be comprised of one or more members
- 3.2 A registered user shall be able to create a group with other registered users
- 3.3 A registered user shall be able to add multiple transactions with multiple users

4. FunBill Transaction

- 4.1 A registered user shall be able to upload a transaction
- 4.2 A registered user shall be able to edit/delete an existing transaction until the transaction is complete/deleted
- 4.3 A registered user may be able to delete a transaction they requested
- 4.4 A transaction shall consist of at least one payment and at least two users, and a proportion that determines who owes how much
- 4.5 A registered user shall be able to change the transaction's total cost and proportions until the payment is made
- 4.6 A Pay Request may create a transaction
- 4.7 A registered user shall be able to invite other users to join a transaction
- 4.8 The user shall categorize transactions, but it is not mandatory
- 4.9 Registered users shall be given the option to charge another user or mark a payment as fulfilled to allow cash transactions

4.10 Any transaction edits shall be approved by all user's involved before edits take effect

5. FunBill Transaction Storage

5.1 Registered users shall be able to see their transaction storage and their current debt or money owed

6. FunBill Transaction Log

6.1 Transaction logs shall be an intractable table via category selection or through filtering

7. Individual Receipt

7.1 Individual Receipts shall be viewable once a transaction has been settled/completed

11. Transaction Payment

- 11.1 Transaction Payments shall be made using a single currency.
- 11.2 Transaction Payments will be processed immediately
- 11.3 Transaction Payments should have a payment type
- 11.4 Transaction Payment should be used to pay a Fun Bill Transaction

12. Payment Type

- 12.1 Payment Method can include cash
- 12.2 Payment Method can include Visa, Mastercard, or American Express cards

13. Pay Request

- 13.1 A pay request shall be used to create a transaction
- 13.2 A registered user shall be able to send a Pay Request to another registered user
- 13.3 A pay request must have a value over 0.00 dollars

14. Transaction Payment Request Description

14.1 Registered users shall be able to decide if they want to have a transaction description describing the reason for the Pay Request

15. Simplified Debt

- 15.1 A registered user should be able to generate a simplified debt number
- 15.2 A registered user should be able to include any transaction within the collection
- 15.3 A registered user should be able to exclude any transaction within the collection
- 15.4 A registered user should be able to attach proof accompanying transactions within the group's simplified debt

16. Reminders

- 16.1 A registered user may add a reminder to a transaction for the receiving registered user

17. Search

- 17.1 A registered user shall be able to search for other registered users to add and send money to
- 17.2 A registered user shall be able to search for past transactions
- 17.3 A registered user shall be able to search by a date range
- 17.4 A registered user shall be able to search based on a specific category
- 17.5 A registered user shall be able to search based on keywords

18. Categories

- 18.1 Registered users shall be able to give each transaction a category
- 18.2 Registered users shall be given category options to choose from
- 18.3 Search shall be able to sort/filter results by category type
- 18.4 A Category should be defined to be either an Event, Outing, Shopping, Gas, Food, Rent, or Other

19. Home Feed

- 19.1 A registered user shall be able to post on the home feed
- 19.2 A home feed shall be toggled on or off by registered user

23. PIN

- 23.1 A PIN shall be generated by a transaction between users who are not on each others' friends list

24. Admin

- 24.1 A admin shall be one account
- 24.2 An admin shall be able to delete posts from other users.
- 24.3 An admin shall have permission to edit/delete accounts

25. Singles

- 25.1 A singles shall be used to generate a payment request between two users.
- 25.2 A singles can be linked with a reminder
- 25.3 A singles can use a scan receipt

26. Account

- 26.1 An Account shall be able to create transactions with other users
- 26.2 An Account shall be able to create groups and group other users together
- 26.3 An Account shall be able to set a username
- 26.4 An Account shall be able to change their password at any time
- 26.5 An Account shall be able to invite others to a transaction
- 26.6 An Account shall be able to edit/delete a given transaction they are apart of

Priority 2

1. General Users

- 1.4 A general user shall not be able to change their username until they register for an account

2. Registered Users

- 2.4 A registered user shall be able to access the home feed
- 2.5 A registered user shall be able to post on the home feed

7. Transaction Receipt

- 7.2 Registered users can copy the transaction receipt and send them to other users

8. Currency Type

- 8.1 Registered users shall be able to choose their preferred currency type
- 8.2: A Currency type should be defined to be USD, Pound, Yen, Euro, other

9. Currency Supported

- 9.1 Registered users shall be given the option to choose a currency type among a currency supported
- 9.2 Payment currency shall consist of 10-20 international currencies

10. Currency Conversion

- 10.1 Registered users shall be able to convert the current transaction set currency type into a different currency type
- 10.2 If a currency conversion is requested by a registered user in a group, the other members of the transaction shall be notified before the change is made
- 10.3 Registered users shall be able to request a simplified debt after having derived from multiple costs that were present in multiple currencies

12. Payment Type

- 12.3 Payment Methods can include third party options like PayPal, CashApp

16. Reminders

16.2 A reminder will alert the receiving registered user at the time specified by the sending registered user

18. Categories

18.5 Registered users shall be able to make their own category

19. Home Feed

19.3 A registered user shall be able to comment on posts on their home feed

20. Scan Receipt

20.1 A registered user shall be able to upload an existing receipt in a group or a singles

20.2 A scanned receipt shall be used to generate a payment request

21. Treat List

21.1 A general or registered user shall have the option to be added to a list on the tab so that their expenses are covered by everyone else.

21.2 The treat list shall be toggled on or off by the registered user

22. Chat

22.1 Registered users shall be able to chat with one another through the chat box

22.2 Registered users shall be able to interact with previous chats

26. Account

26.7 An account shall be able to change/edit their profile picture

26.8 An account shall be able to change/edit their password

26.9 An account shall be able to change/edit their username

26.10 An account shall be able to update their emails

Section III: Wireframes

The following link represents an overall layout and is planned to be implemented into the FunBill web application. These were created and detailed in Figma, and the full experience can be found in the link below.

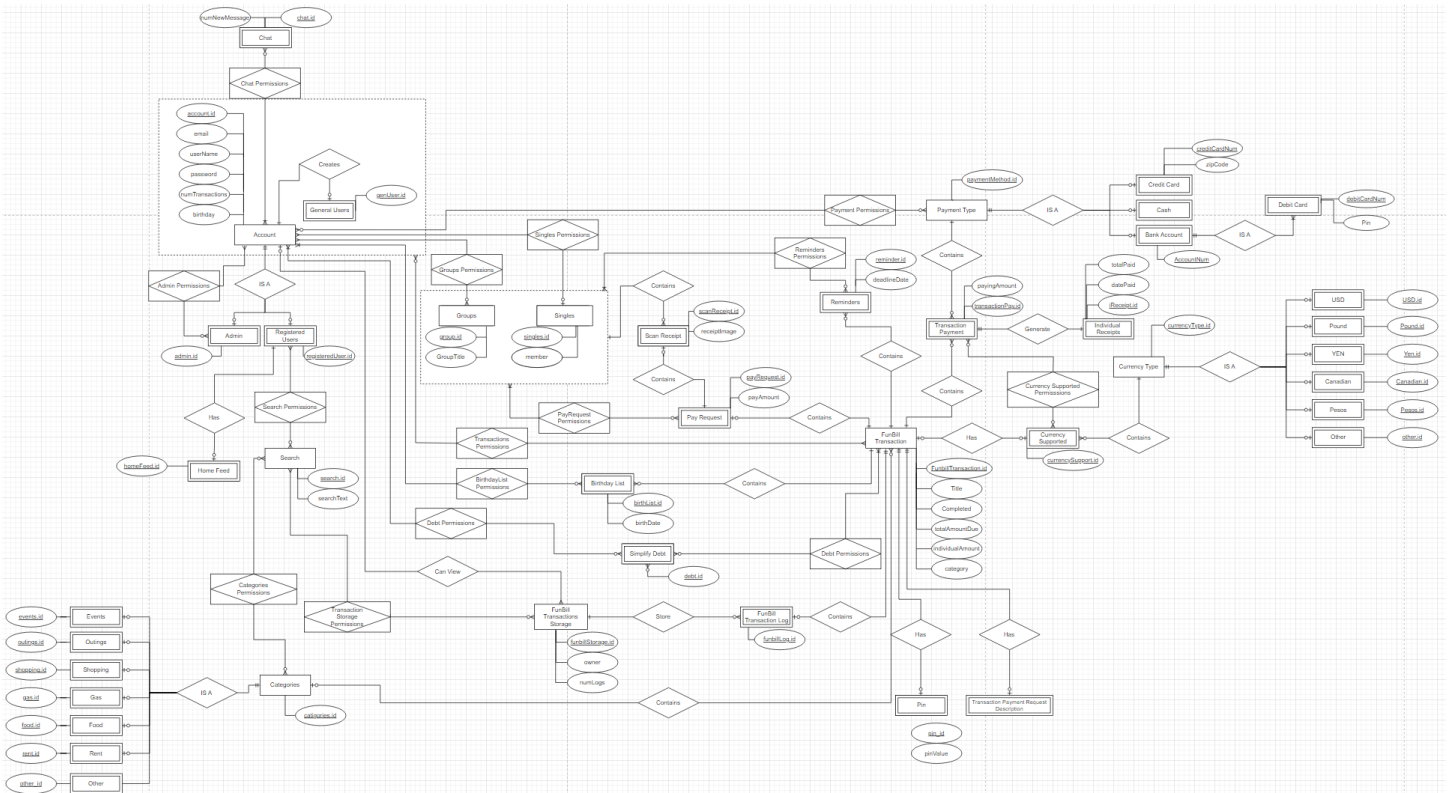
Link to the Figma Wireframes: [FunBill Wireframe and Flow](#)

Section IV: Database Architecture and Organization

FunBill ERD

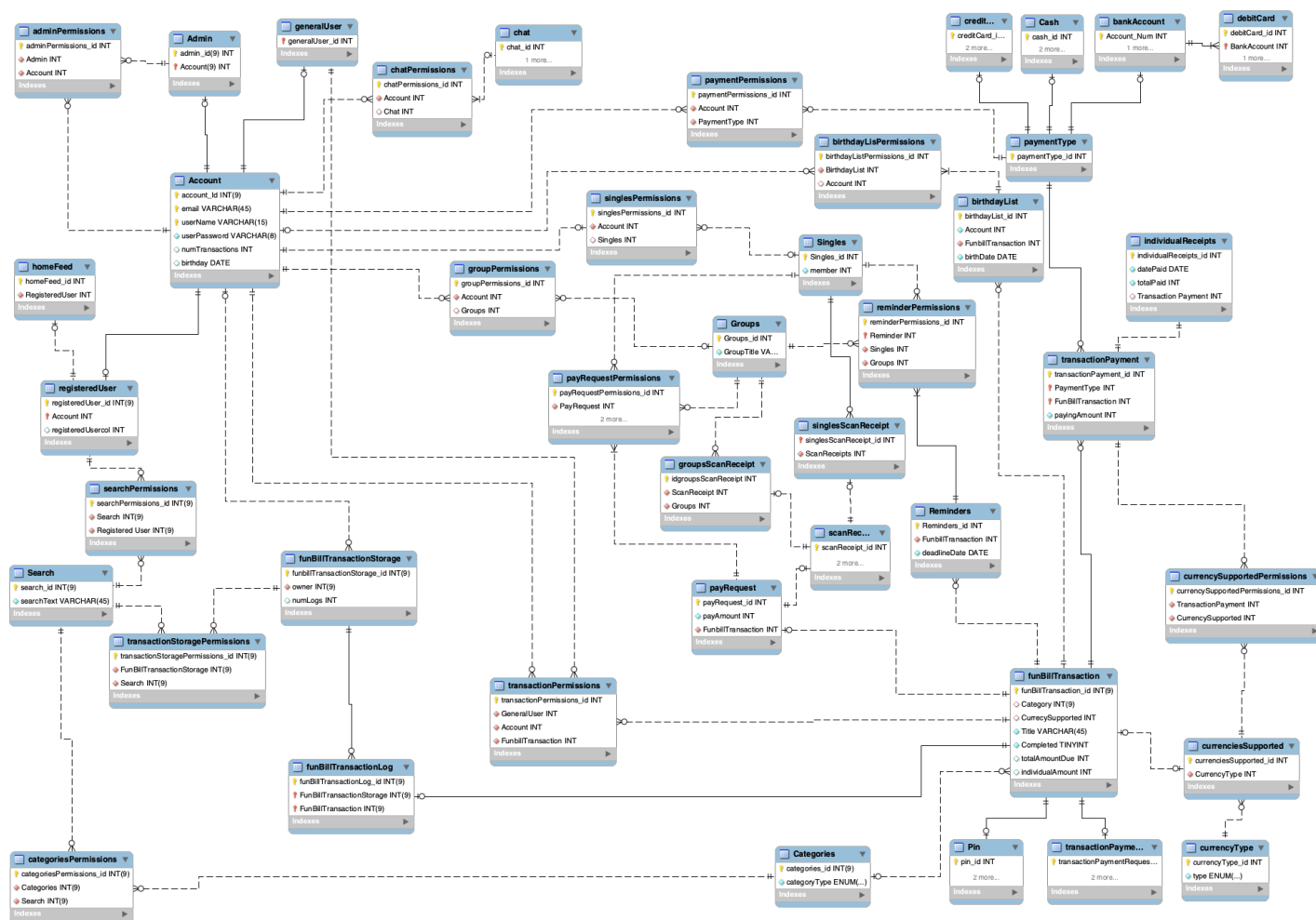
This diagram represents the entire ERD for the FunBill web application.

Link to ERD: [FunBill ERD](#)



FunBill EER

This diagram represents the entire EER for the FunBill web application

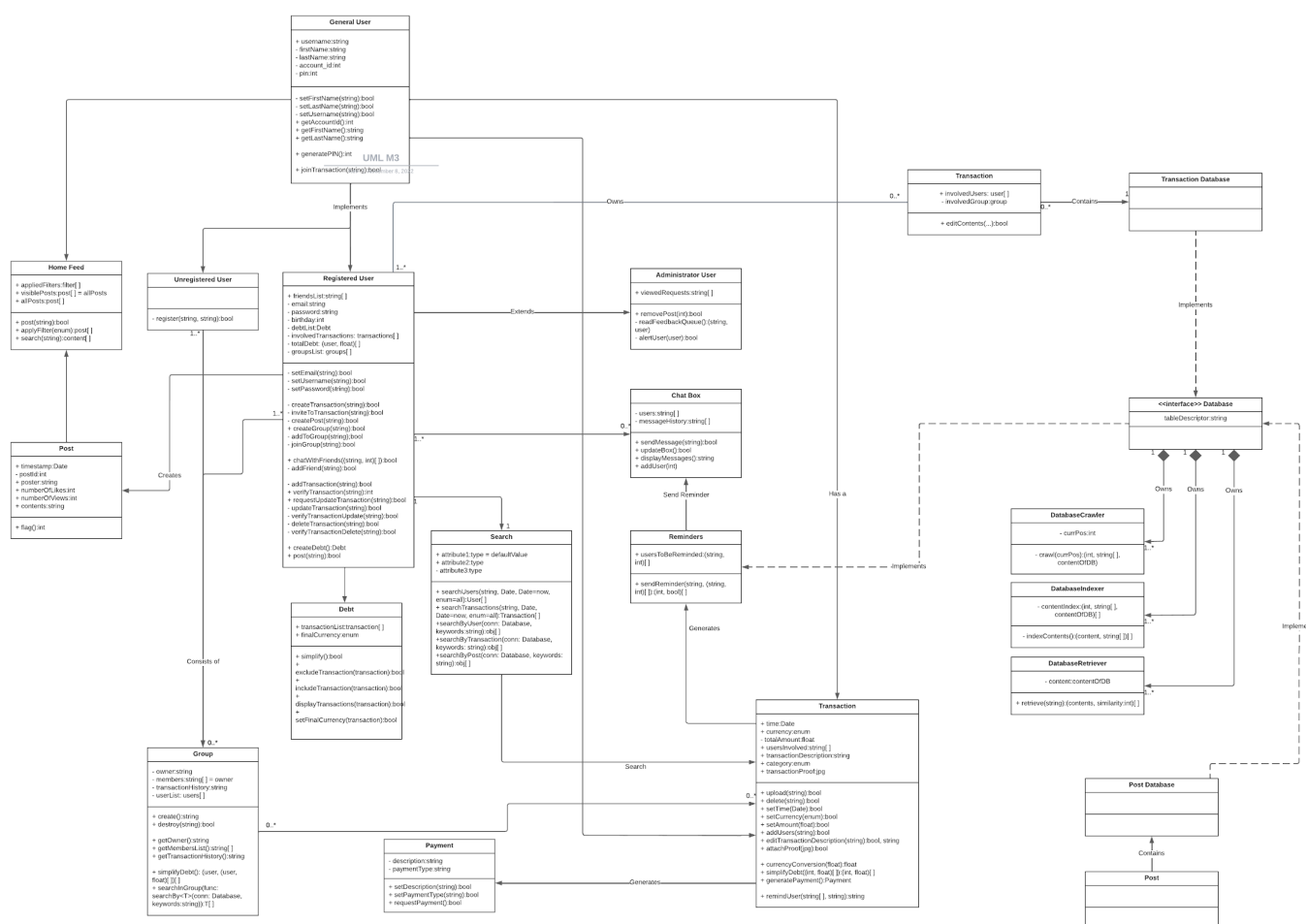


Section V: High-Level Diagrams V2

UML Diagram

Link to the UML Diagram: [FunBill UML](#)

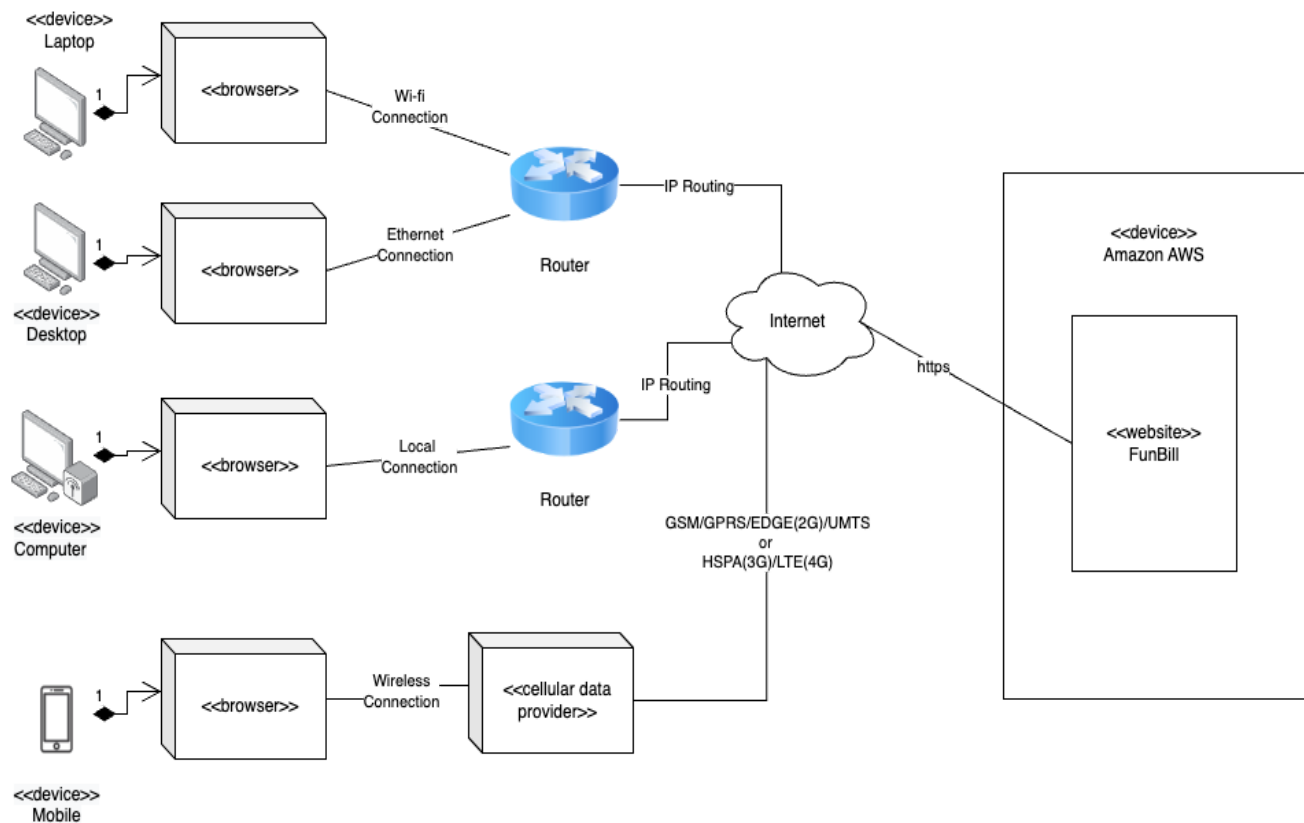
This UML displayed is focused on the entirety of FunBill, including the main high-level classes that pertain to the best Key Features the FunBill is intended to have implemented.



Application Networks Diagram

Link to the diagram: [FunBill AND](#)

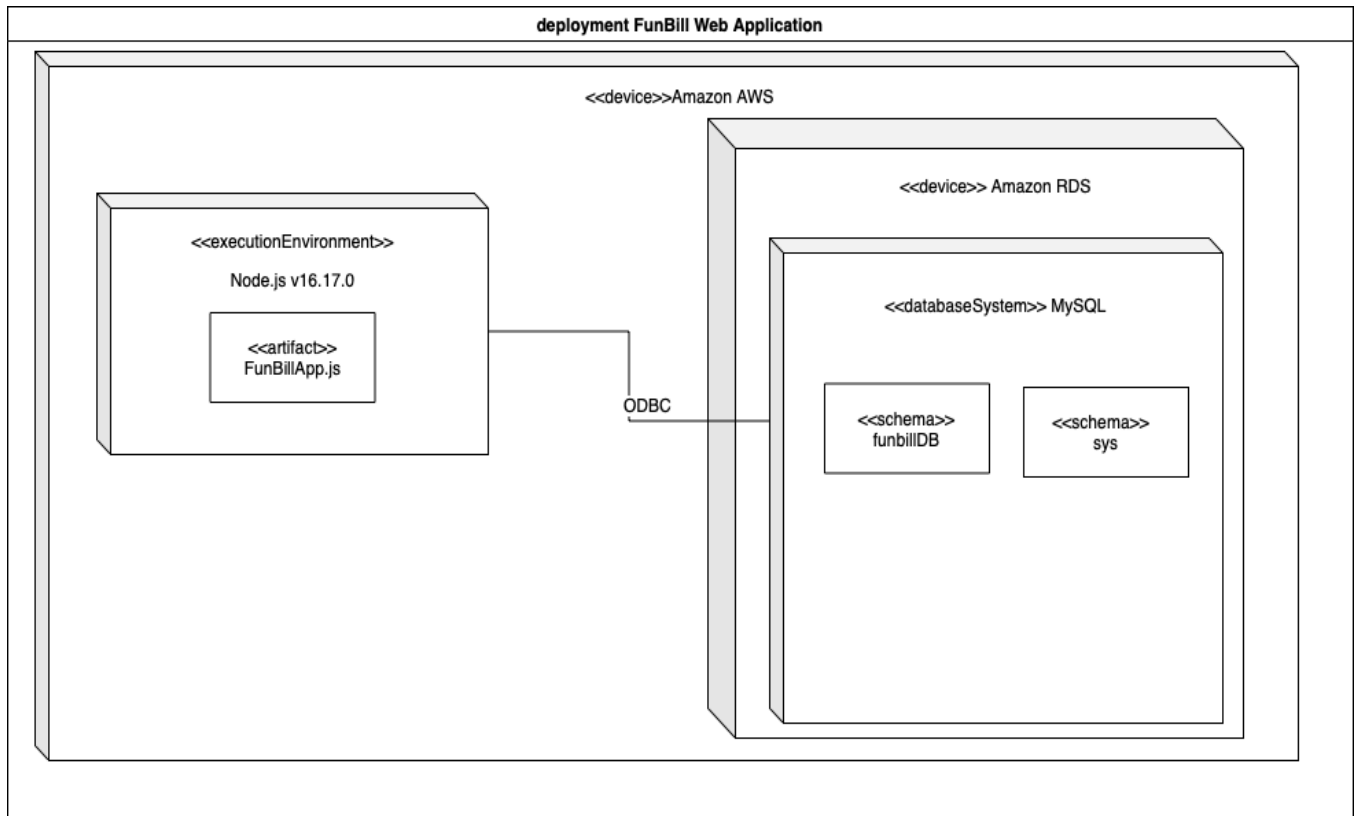
This diagram will describe our product's logical and physical networks from host to end systems. It shows protocols used for each service in your system, network configuration, security, gateways, firewalls, and proxies...



Deployment Diagram

Link to the diagram: [FunBill DD](#)

This diagram will show the architecture of the system a deployment (distribution) of software artifacts, or modules in our system, to deployment targets



Section VI: Team Contribution

Team Member:	Denyse Luzon
Role:	Team Lead
Score:	8
Contribution:	Documentation <ul style="list-style-type: none"> - Rearranged a few of the Functional Requirements - Added the Wireframe section Web Application <ul style="list-style-type: none"> - Created a GitHub action that connects the team repo to the team server - Created an HTML/CSS template for the main pages of the website

Team Member:	Bhagdeep Sandhu
Role:	Database Master and Backend Team
Score:	10
Contribution:	Documentation <ul style="list-style-type: none"> - Updated the ERD and EER to include feedback from meetings Web Application <ul style="list-style-type: none"> - Worked on the search bar - Worked on the Expenses page - Worked on the dashboard

Team Member:	Faiyaz Chaudhury
Role:	Backend Lead
Score:	10
Contribution:	Web Application <ul style="list-style-type: none"> - Worked on displaying database tables onto the Home page - Worked on the search bar - Did research on embedded javascript

Team Member:	Kaung Nay Htet
Role:	Backend Team
Score:	6
Contribution:	Documentation <ul style="list-style-type: none"> - Finalized the UML diagram that integrated the rest of the FunBill Web Application - Did research for the search bar implementation and payment system

Team Member:	Poornank Purohit
Role:	Frontend Lead
Score:	10
Contribution:	Documentation <ul style="list-style-type: none"> - Worked on the Figma Wireframes Web Application <ul style="list-style-type: none"> - Created HTML/CSS pages for the Sign Up and Login pages - Worked on creating the main index and home page, along with design and layout to most pages to branch everything - Linked all the html pages together while editing every pages that needed changes/updates to work as flowing component

Team Member:	Tolby Lam
Role:	Frontend Team
Score:	10
Contribution:	Documentation <ul style="list-style-type: none"> - Worked on the Figma Wireframes Web Application <ul style="list-style-type: none"> - Worked on the main HTML pages for friends and groups - Worked on styling main components - Worked on the dashboard