



**UE21CS351A:**  
**Database Management System**

**Asset Management System**

***Project Report***

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### 1.Introduction

- **Purpose of the project:** The purpose of this DBMS project is to build a single investment portfolio for the family that provides a single log-in view for the whole family's investments and helps keep track of your wealth and its growth. It also aims to serve as a centralized repository to store this information and serve as GUI database for the user. This also provides an easier way to define and perform CRUD functionality
- **Scope of the project:** This project will include the development of the database like ER diagram, relational schema, data storage, and retrieval mechanisms. It will provide the foundation for the frontend of the asset management system with features like portfolio tracking, asset management, and reporting. It will also include and in the current version limited by:
  - User Management
  - Asset Management
  - Portfolio Management
  - Goal Management

#### **Out of Scope:**

- Current value of the asset
- Mobile Application
- Buy/Sell Predictions

### 2. Project Description

- **Project overview:** This project involves the creation of a comprehensive Database Management System tailored for Indian users to manage their investments. The DBMS will store and organize data related to investment portfolios, assets, users, watchlist and goals.
- **Major project functionalities:** Custom roles and administrators. Create and handle users, user auth, their dependents, their assets. Generate different views for portfolio tracking and family views.

#### User Management:

- Create users
- Map users to Super Users: create a family hierarchy
- User authentication
- Role Based Access Control: Only super user(family head) can view all sub-users(family members) assets
- View all sub users ( family members)

#### Asset Management:

- Add Assets
- Delete Assets
- Map assets to portfolio's
- Asset Overview

#### Portfolio Management:

- Create Portfolio
- View Portfolio
- Map assets to portfolio's

#### Goal Management:

- Create Goals
- Delete Goals
- View Goals
- Define goal amount and goal description

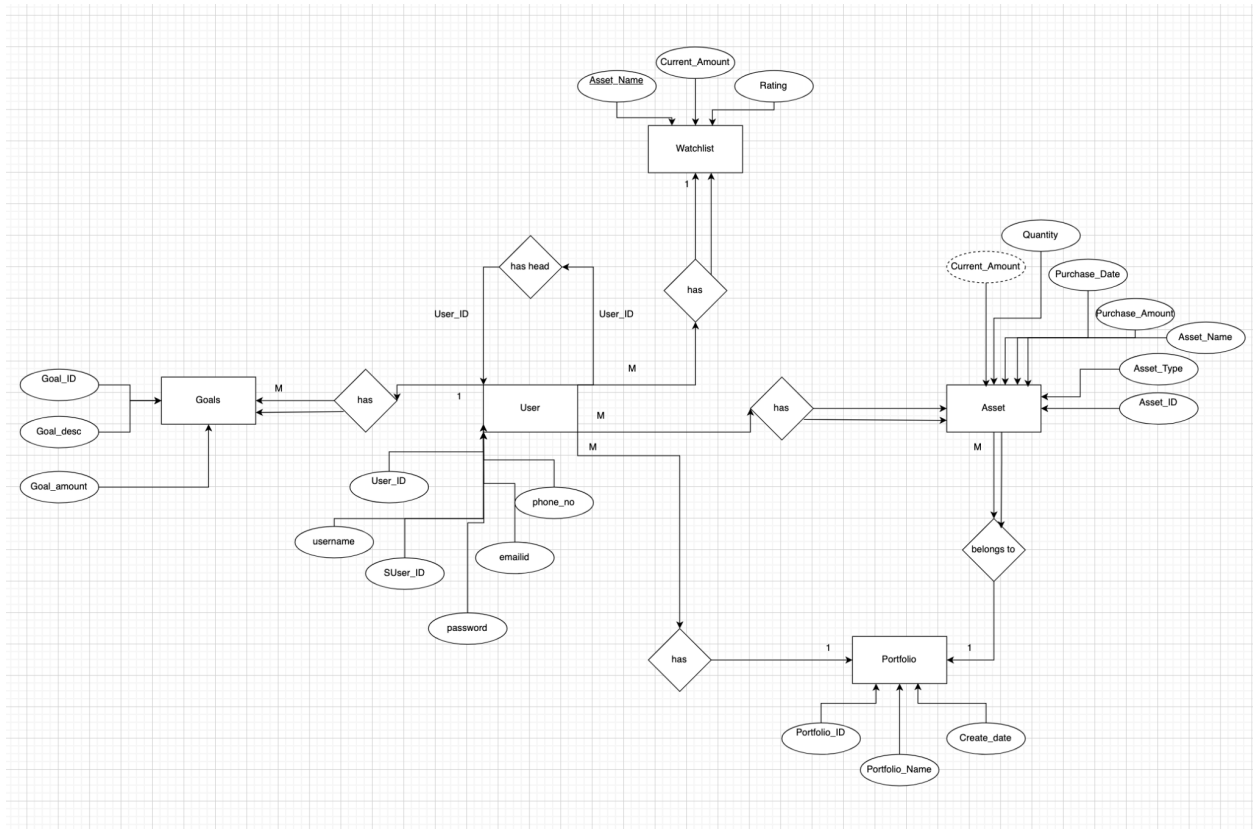
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### **3.System Features and Function Requirements**

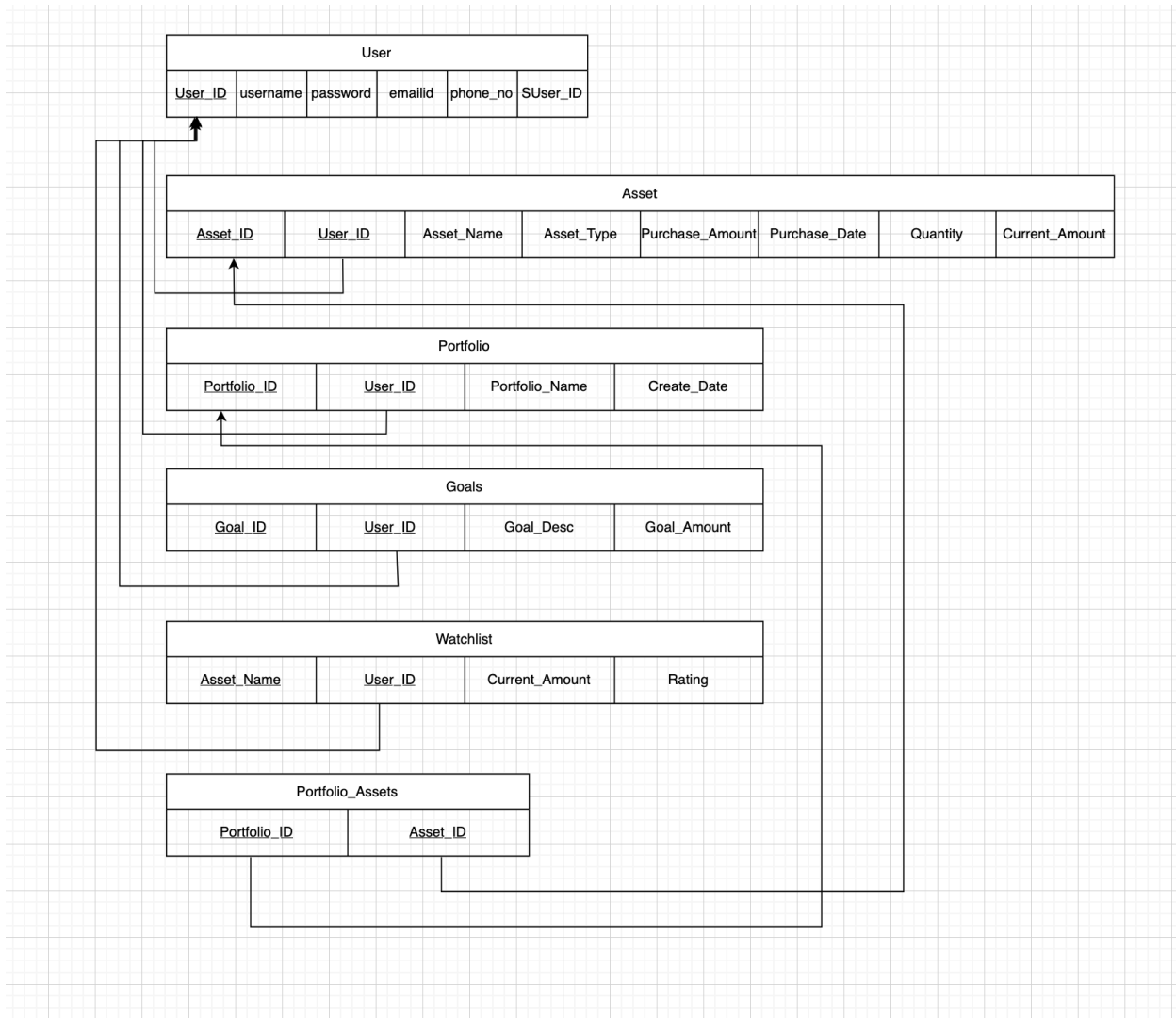
- **System Feature 1: User Authentication and Access Control**
  - Description: Implement a secure authentication system to manage user access to the database.
  - Functional Requirement: Create authentication controls to ensure that each user can only access and modify their own data.
- **System Feature 2: Portfolio Management**
  - Description: Create tables and relationships to manage individual investment portfolios.
  - Functional Requirement: Enable users to add, update, and query their portfolios. Create views to use for dashboards
- **System Feature 3: Asset Tracking**
  - Description: Design database structures for tracking various types of assets (e.g., stocks, mutual funds, real estate).
  - Functional Requirement: Develop mechanisms for adding, updating, and viewing individual class of assets
- **System Feature 4: Abstraction**
  - Description: Design different views for family members and for head of family/wealth manager
  - Functional Requirements: Define access controls to ensure that each user can only access and modify their own data and provide different access for family head and for family members
- **System Feature 5: Goal Setting**
  - Description: Provide a goal setting feature to increase rate and success of financial planning among the users, and also set individual goals
  - Functional Requirement: Develop mechanisms for storing, viewing and reflecting upon goals quantifiably
- **System Feature 6: Simplified Accessibility**

- Description: Design database to hold all types of assets and serve as a unified service
- Functional Requirement: Develop mechanisms for aggregating different types and latest prices of such assets.

## 4. Entity Relationship Diagram



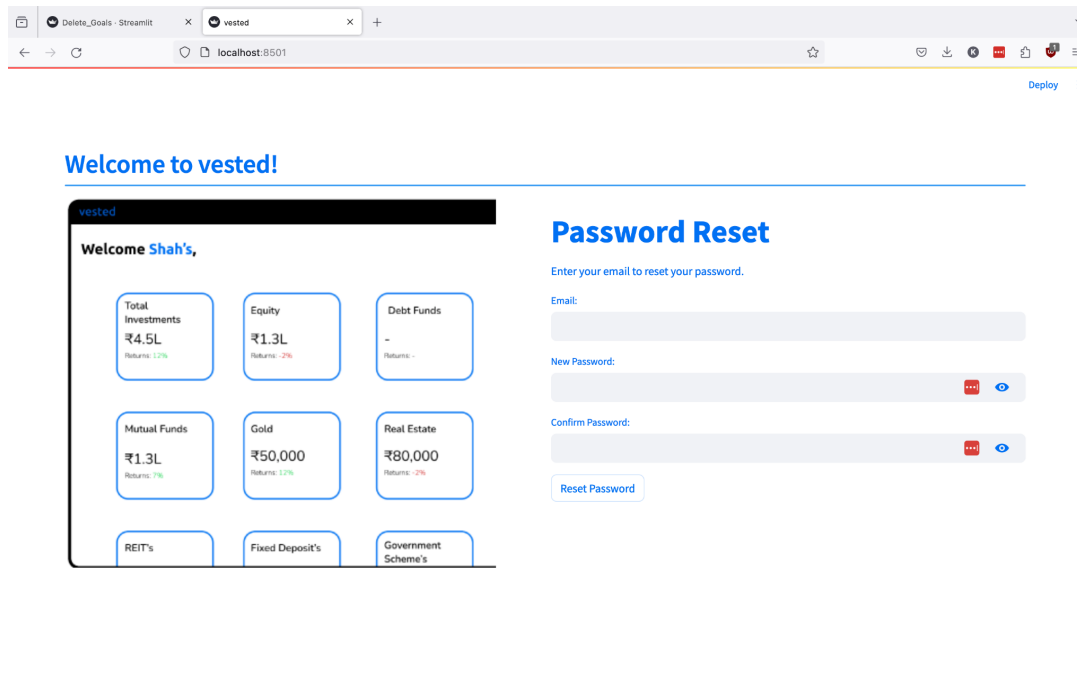
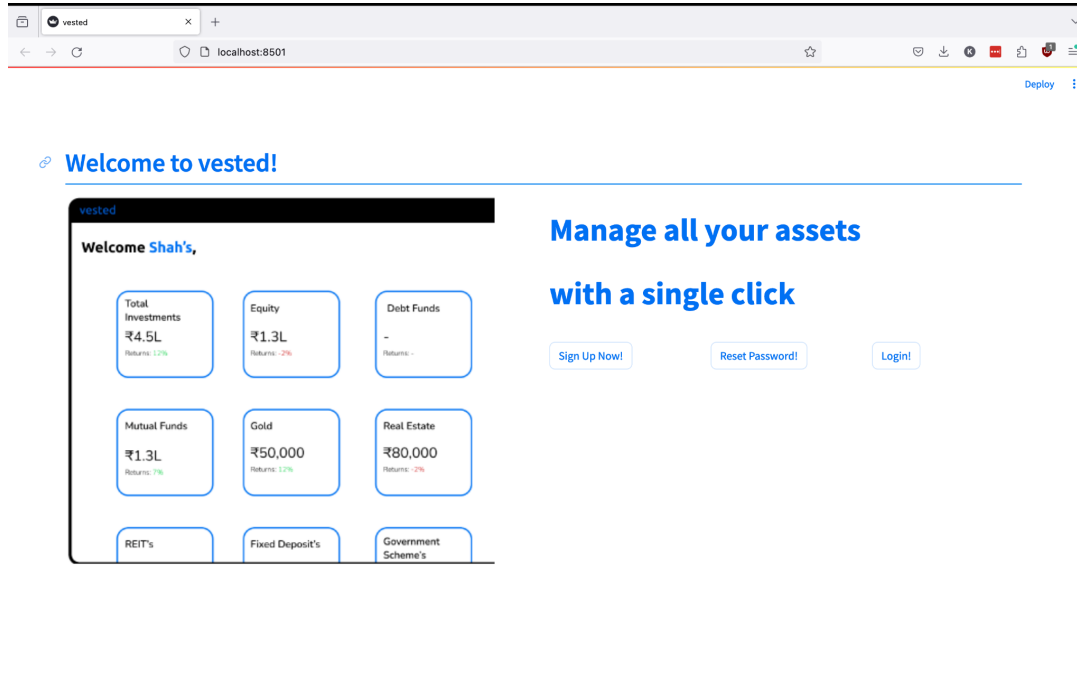
## 5. Relational Schema





## 6. Working and Screenshots

Landing Page: A collection of Sign up, Log In and Reset Password Functionality.



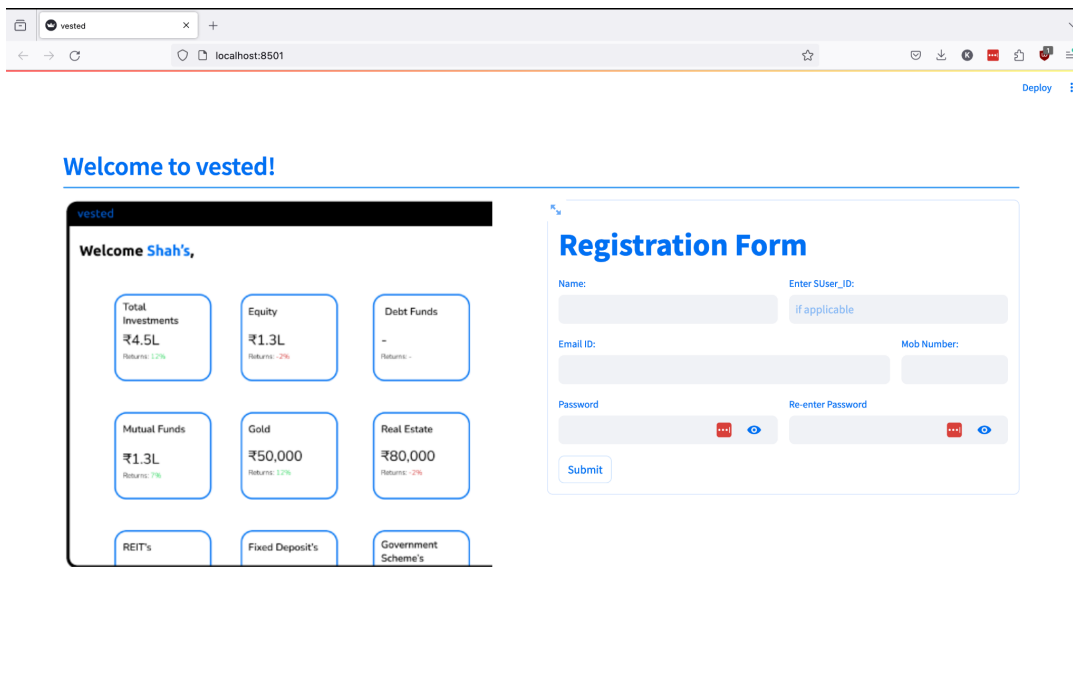
### Before Creating New User:

```
|mysql> SELECT * FROM User;
```

User_ID	username	password	email_id	phone_no	SUser_ID
4	krishshah	krish1710	krishshah.17@gmail.com	8971775677	NULL
6	Sanjay	nahi	sanjay@gmail.com	8971775678	NULL
8	krish	krish	krish@gmail.com	8971775677	NULL
9	Roshni	shah	chuprsh@gmail.com	9343233354	6
10	Vidhi	shah	vss@gmail.com	9876543210	6
15	happy	sad	nothappy@gmail.com	9876543210	NULL
19	jugal	jug123	jug@gmail.com	9900360365	NULL
20	yes	shah1234	happy@gmail.com		NULL
23	kshitij	agar	kshitj@gmail.com	9876543210	NULL
24	Niranjan	nope	niranjan@gmail.com	9876543210	NULL
25	vishh	shsh	nagarkattiviha@ggail.co.in	9876543210	4

```
11 rows in set (0.01 sec)
```

### After Creating New User:



**Welcome to vested!**

**Welcome Shah's,**

Category	Value	Return
Total Investments	₹4.5L	12%
Equity	₹1.3L	-2%
Debt Funds	-	-
Mutual Funds	₹1.3L	7%
Gold	₹50,000	12%
Real Estate	₹80,000	-2%
REIT's	-	-
Fixed Deposit's	-	-
Government Scheme's	-	-

**Registration Form**

Name:  Enter SUser\_ID:  if applicable

Email ID:  Mob Number:

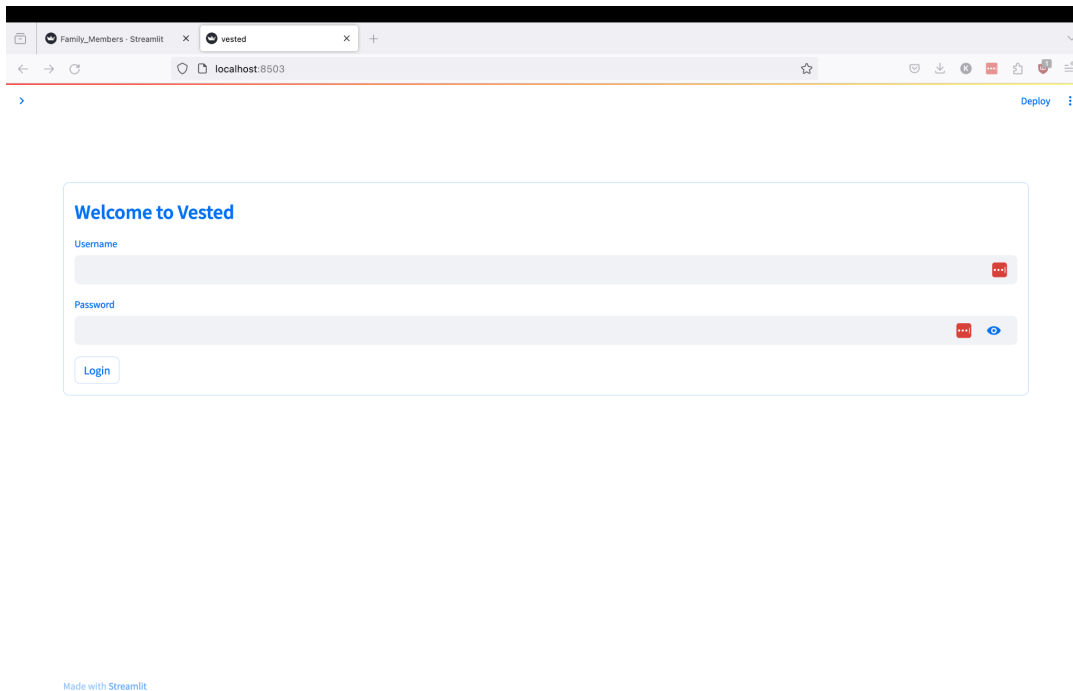
Password:  Re-enter Password:

```
mysql> SELECT * FROM User;
```

User_ID	username	password	email_id	phone_no	SUser_ID
4	krishshah	krish1710	krishshah.17@gmail.com	8971775677	NULL
6	Sanjay	nahi	sanjay@gmail.com	8971775678	NULL
8	krish	krish	krish@gmail.com	8971775677	NULL
9	Roshni	shah	chuprsh@gmail.com	9343233354	6
10	Vidhi	shah	vss@gmail.com	9876543210	6
15	happy	sad	nothappy@gmail.com	9876543210	NULL
19	jugal	jug123	jug@gmail.com	9900360365	NULL
20	yes	shah1234	happy@gmail.com		NULL
23	kshitij	agar	kshitj@gmail.com	9876543210	NULL
24	Niranjan	nope	niranjan@gmail.com	9876543210	NULL
25	vishh	shsh	nagarkattiviha@ggail.co.in	9876543210	4
26	projrep	proj@123	projrep@pes.edu	9876543210	NULL

12 rows in set (0.01 sec)

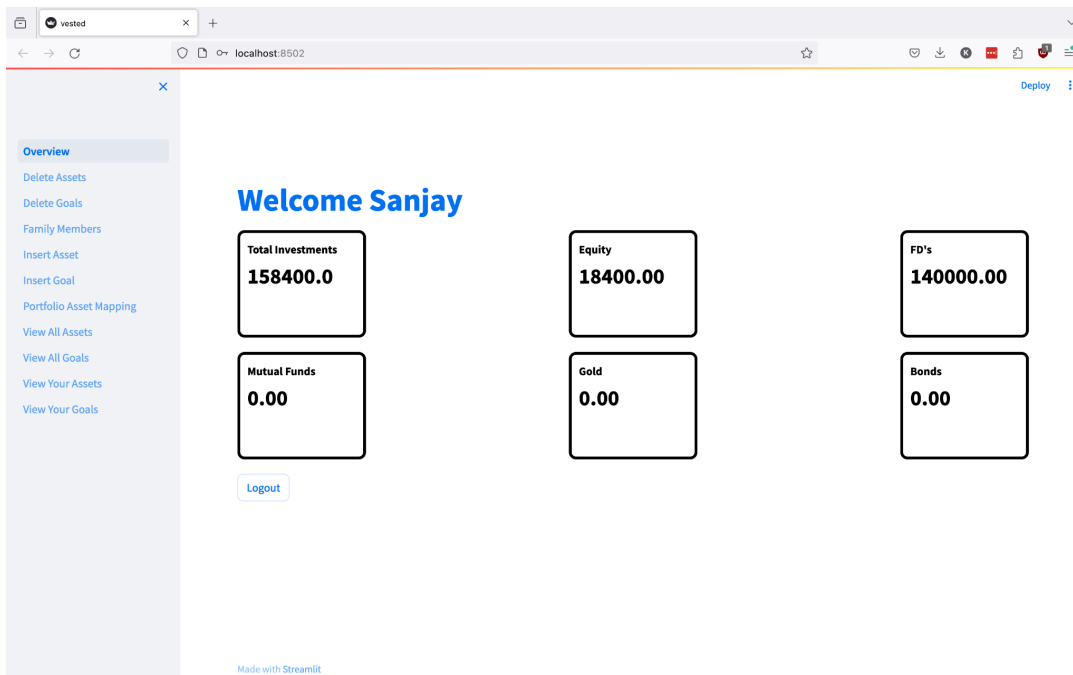
## Login Page



The screenshot shows a web browser window with the URL `localhost:8503`. The page has a dark header bar. Below it, a light blue box contains the text "Welcome to Vested". Underneath, there are two input fields: "Username" and "Password". The "Password" field has a red "x" icon and a blue eye icon. A "Login" button is at the bottom left of the box. At the bottom of the page, it says "Made with Streamlit".

On User Authentication:

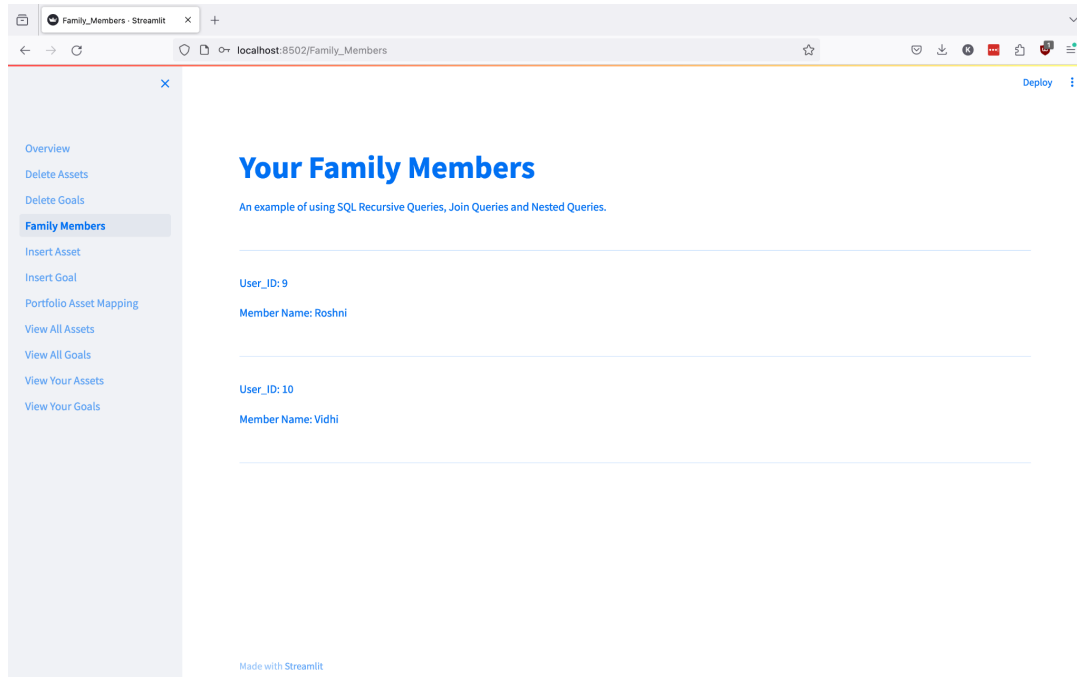
Home Page:



The screenshot shows a web browser window with the URL `localhost:8502`. The page has a dark header bar. On the left, there is a sidebar with a list of links: "Overview", "Delete Assets", "Delete Goals", "Family Members", "Insert Asset", "Insert Goal", "Portfolio Asset Mapping", "View All Assets", "View All Goals", "View Your Assets", and "View Your Goals". The main content area has a light blue box with the text "Welcome Sanjay". Below this, there are six boxes arranged in a 2x3 grid, each containing a label and a value: "Total Investments" (158400.0), "Equity" (18400.00), "FD's" (140000.00), "Mutual Funds" (0.00), "Gold" (0.00), and "Bonds" (0.00). A "Logout" button is at the bottom left of the main content area. At the bottom of the page, it says "Made with Streamlit".

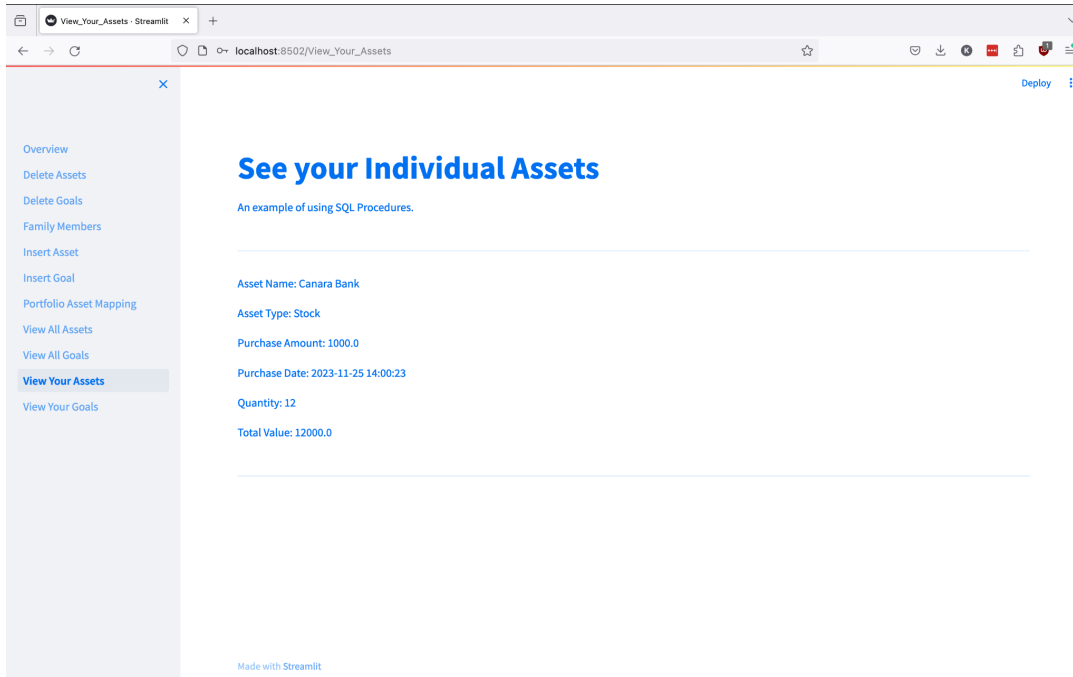
## View Family Members:

Making use of recursive query to display all sub users:



## Asset Management:

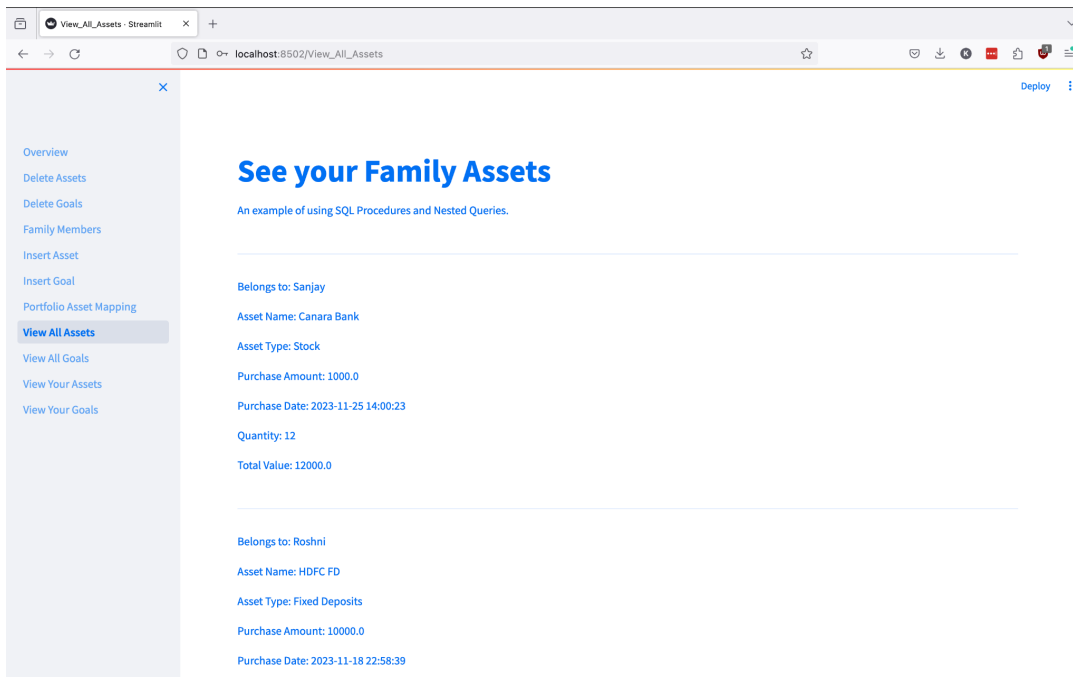
### View Assets:



The screenshot shows a web browser window displaying a Streamlit application titled "View\_Your\_Assets - Streamlit". The URL is "localhost:8502/View\_Your\_Assets". The application has a sidebar menu with the following items: Overview, Delete Assets, Delete Goals, Family Members, Insert Asset, Insert Goal, Portfolio Asset Mapping, View All Assets, View All Goals, **View Your Assets** (selected), and View Your Goals. The main content area features the heading "See your Individual Assets" and a subheading "An example of using SQL Procedures." Below this, the following asset details are displayed:

- Asset Name: Canara Bank
- Asset Type: Stock
- Purchase Amount: 1000.0
- Purchase Date: 2023-11-25 14:00:23
- Quantity: 12
- Total Value: 12000.0

A "Deploy" button is visible in the top right corner of the application interface.



The screenshot shows a web browser window displaying a Streamlit application titled "View\_All\_Assets - Streamlit". The URL is "localhost:8502/View\_All\_Assets". The application has a sidebar menu with the following items: Overview, Delete Assets, Delete Goals, Family Members, Insert Asset, Insert Goal, Portfolio Asset Mapping, **View All Assets** (selected), View All Goals, View Your Assets, and View Your Goals. The main content area features the heading "See your Family Assets" and a subheading "An example of using SQL Procedures and Nested Queries." Below this, the following asset details are displayed:

- Belongs to: Sanjay
- Asset Name: Canara Bank
- Asset Type: Stock
- Purchase Amount: 1000.0
- Purchase Date: 2023-11-25 14:00:23
- Quantity: 12
- Total Value: 12000.0

A "Deploy" button is visible in the top right corner of the application interface.

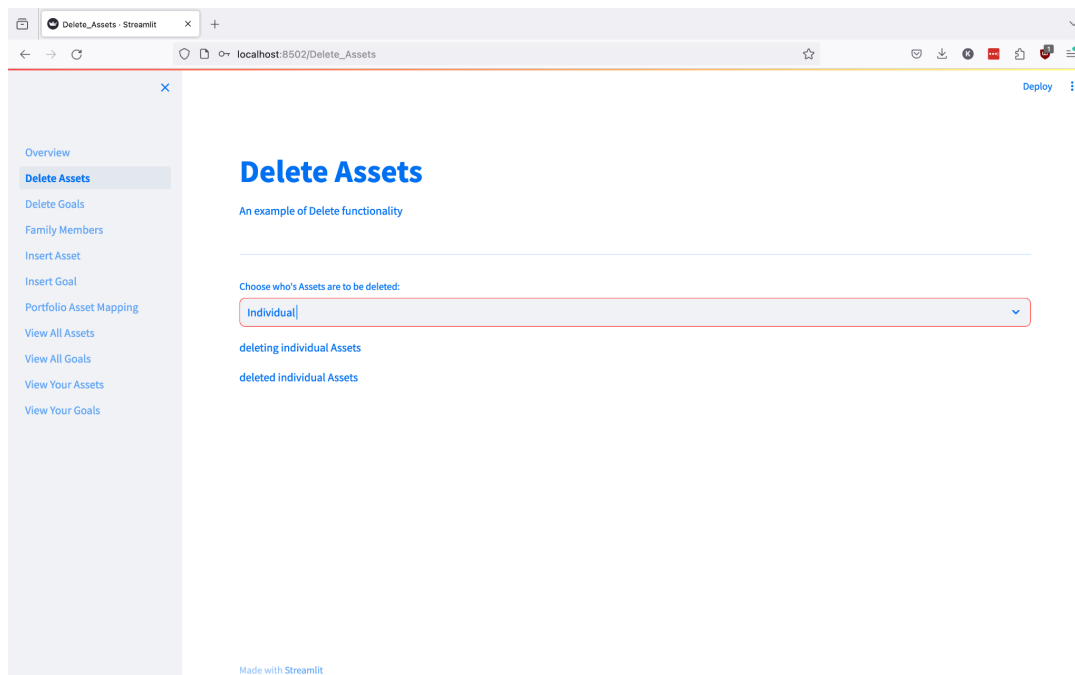
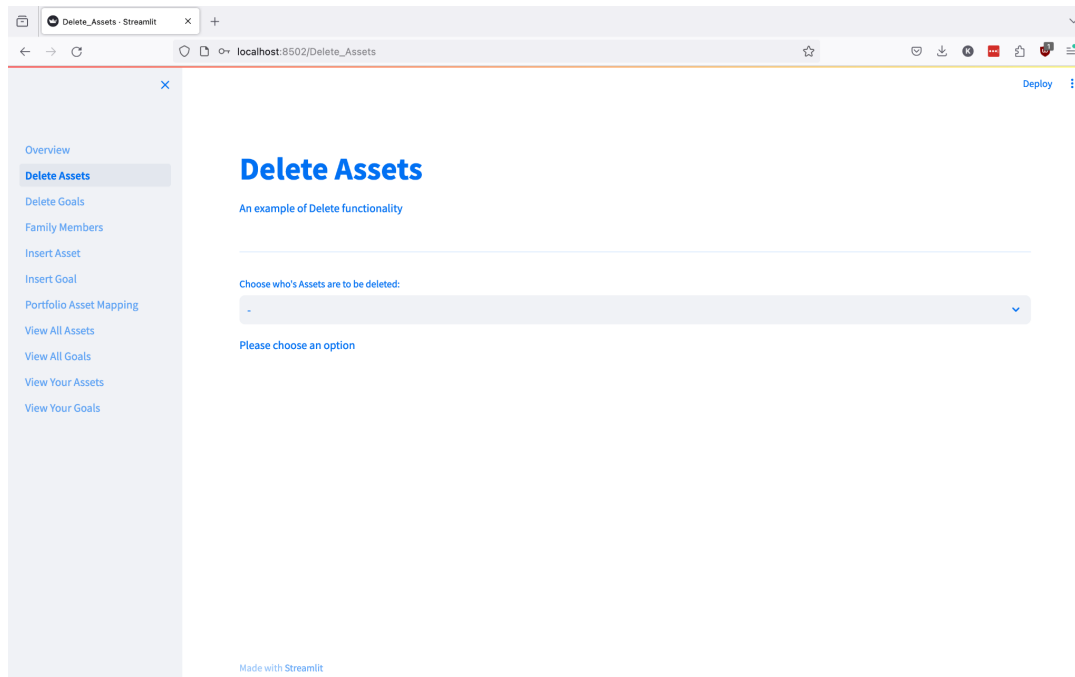
## Before Deleting asset:

```
mysql> SELECT * FROM Asset WHERE User_ID=6;
```

Asset_ID	User_ID	Asset_Name	Asset_Type	Purchase_Amount	Purchase_Date	Quantity
28	6	Canara Bank	Stock	1000.00	2023-11-25 14:00:23	12

1 row in set (0.01 sec)

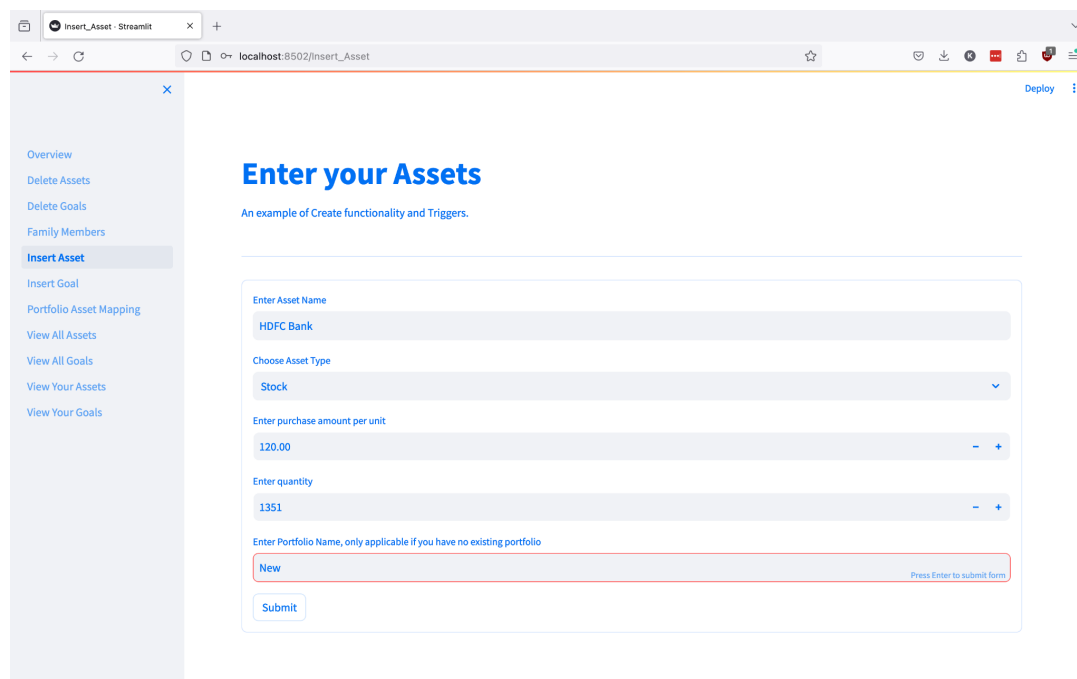
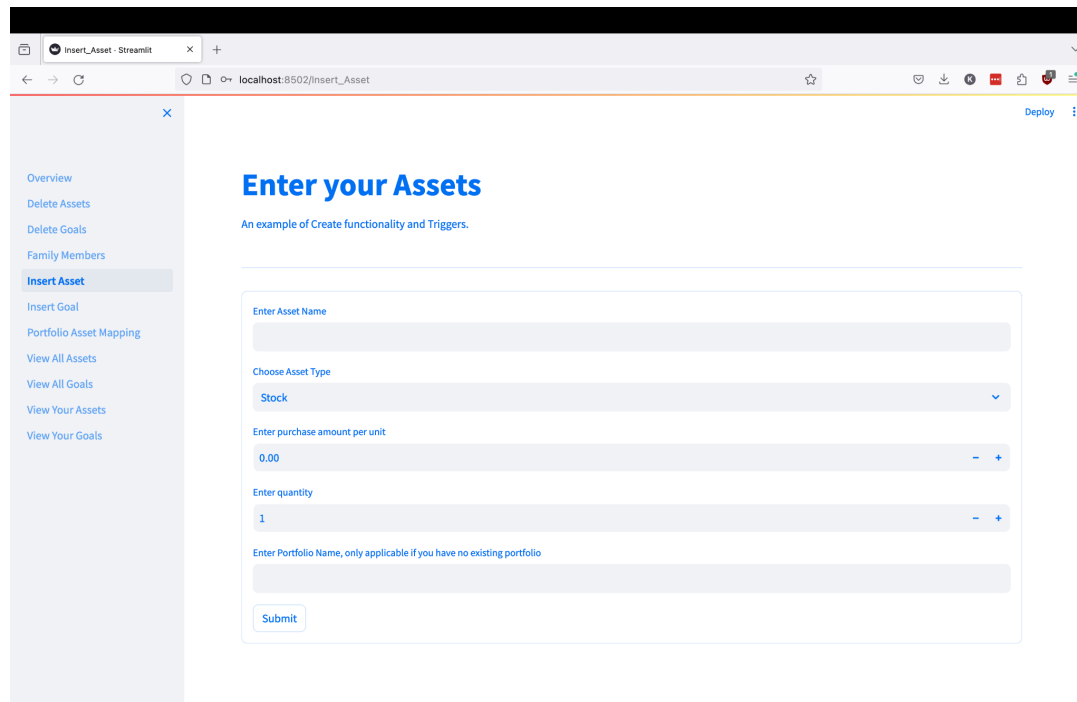
## Delete Assets:



After deleting Asset:

```
[mysql> SELECT * FROM Asset WHERE User_ID=6;  
Empty set (0.00 sec)
```

Add Assets:



After

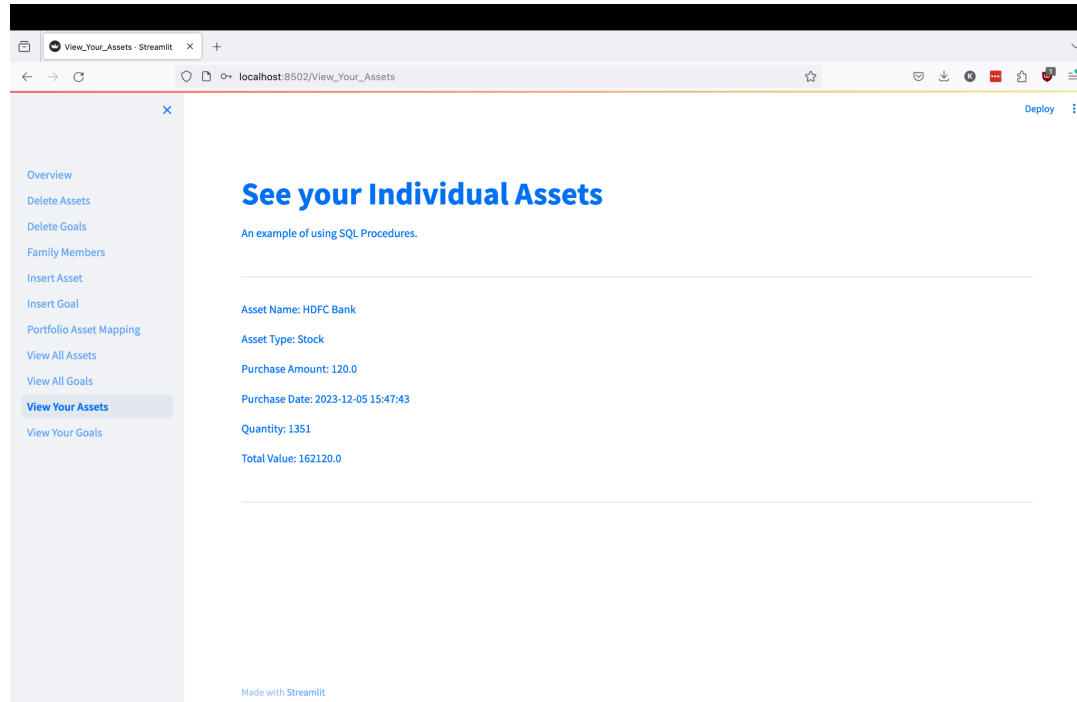


## Inserting asset:

```
mysql> SELECT * FROM Asset WHERE User_ID=6;
```

Asset_ID	User_ID	Asset_Name	Asset_Type	Purchase_Amount	Purchase_Date	Quantity
29	6	HDFC Bank	Stock	120.00	2023-12-05 15:47:43	1351

1 row in set (0.00 sec)



**See your Individual Assets**

An example of using SQL Procedures.

Asset Name: HDFC Bank

Asset Type: Stock

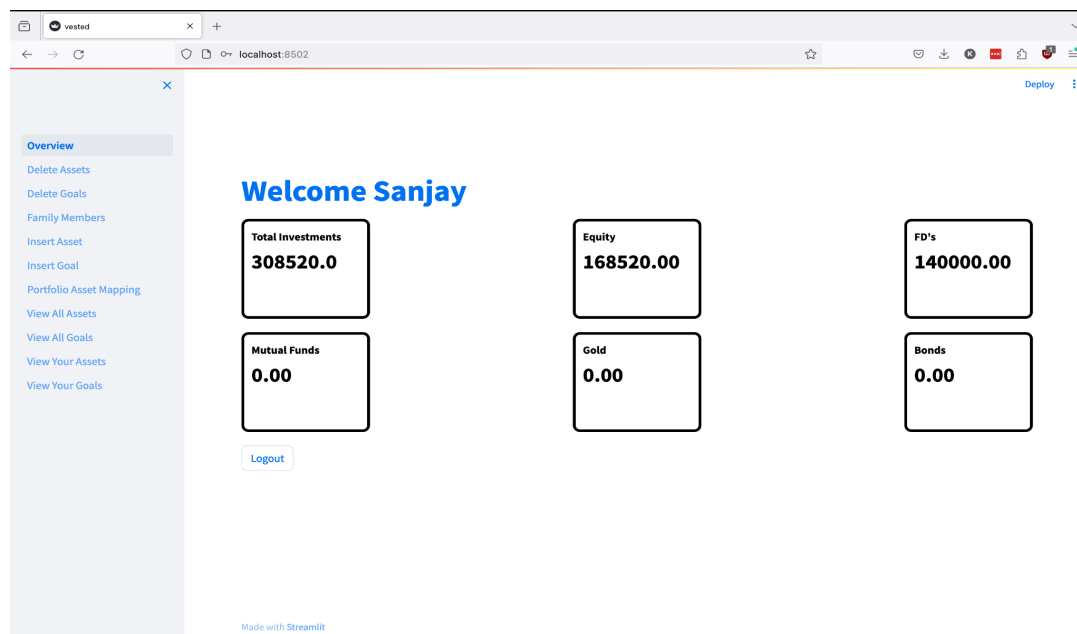
Purchase Amount: 120.0

Purchase Date: 2023-12-05 15:47:43

Quantity: 1351

Total Value: 162120.0

## Updated Overview:



**Welcome Sanjay**

**Total Investments**  
308520.0

**Equity**  
168520.00

**FD's**  
140000.00

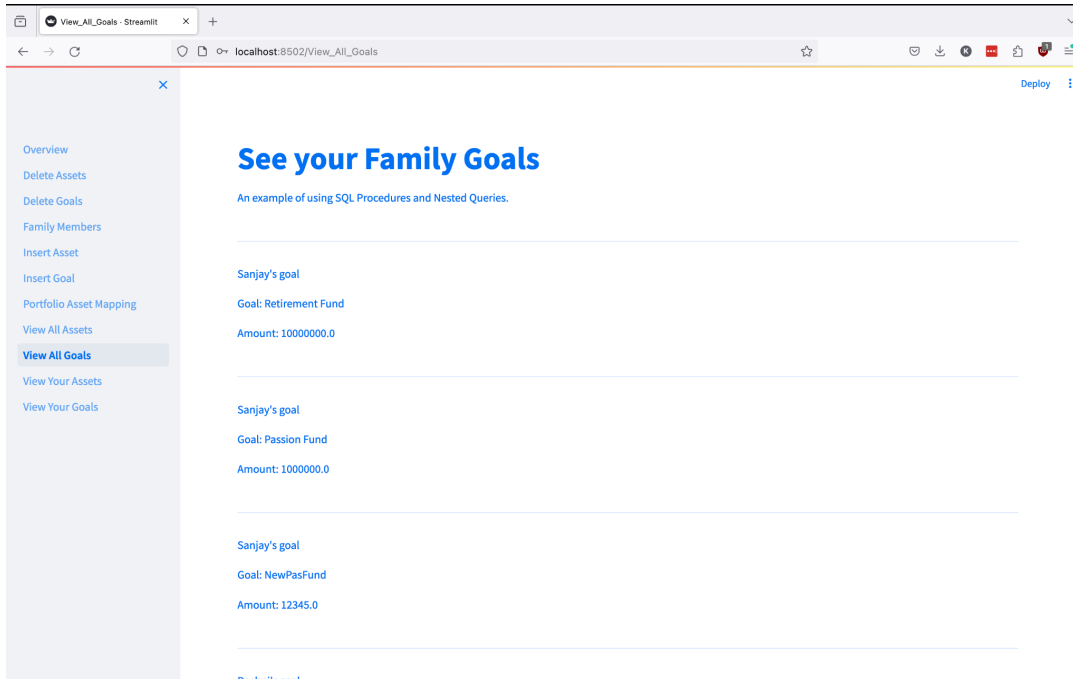
**Mutual Funds**  
0.00

**Gold**  
0.00

**Bonds**  
0.00

[Logout](#)

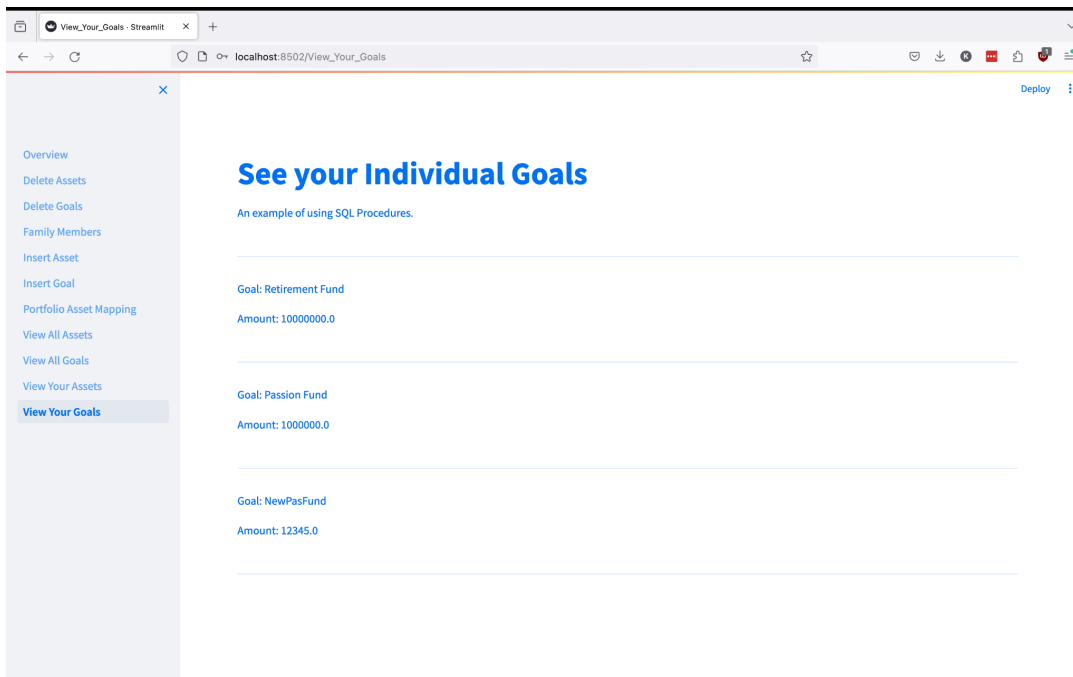
## Similarly Goal Management:



The screenshot shows a web application titled "View\_All\_Goals - Streamlit". The browser address bar indicates the URL is `localhost:8502/View_All_Goals`. The application has a sidebar menu with the following items: Overview, Delete Assets, Delete Goals, Family Members, Insert Asset, Insert Goal, Portfolio Asset Mapping, View All Assets, **View All Goals** (selected), View Your Assets, and View Your Goals. The main content area is titled "See your Family Goals" and includes the subtitle "An example of using SQL Procedures and Nested Queries." Below this, there are three entries for "Sanjay's goal":

- Goal: Retirement Fund  
Amount: 10000000.0
- Goal: Passion Fund  
Amount: 1000000.0
- Goal: NewPasFund  
Amount: 12345.0

A "Deploy" button is visible in the top right corner of the application area.



The screenshot shows a web application titled "View\_Your\_Goals - Streamlit". The browser address bar indicates the URL is `localhost:8502/View_Your_Goals`. The application has a sidebar menu with the following items: Overview, Delete Assets, Delete Goals, Family Members, Insert Asset, Insert Goal, Portfolio Asset Mapping, View All Assets, View All Goals, View Your Assets, and **View Your Goals** (selected). The main content area is titled "See your Individual Goals" and includes the subtitle "An example of using SQL Procedures." Below this, there are three entries for "Goal":

- Goal: Retirement Fund  
Amount: 10000000.0
- Goal: Passion Fund  
Amount: 1000000.0
- Goal: NewPasFund  
Amount: 12345.0

A "Deploy" button is visible in the top right corner of the application area.

Insert\_Goal - Streamlit

+

localhost:8502/Insert\_Goal

Deploy

Overview

Delete Assets

Delete Goals

Family Members

Insert Asset

**Insert Goal**

Portfolio Asset Mapping

View All Assets

View All Goals

View Your Assets

View Your Goals

## Insert your Goal

An example of Create functionality

Enter Goal Description

Enter goal amount

0.00

-

+

Submit

Made with Streamlit

Delete\_Goals - Streamlit

+

localhost:8502/Delete\_Goals

Deploy

Overview

Delete Assets

**Delete Goals**

Family Members

Insert Asset

Insert Goal

Portfolio Asset Mapping

View All Assets

View All Goals

View Your Assets

View Your Goals

## Delete Goals

An example of Delete functionality

Choose who's goals to delete:

-

Please choose an option

Made with Streamlit

## Portfolio Asset Mapping

Portfolio\_Asset\_Mapping - Stri... X

localhost:8502/Portfolio\_Asset\_Mapping

Deploy

Overview

Delete Assets

Delete Goals

Family Members

Insert Asset

Insert Goal

**Portfolio Asset Mapping**

View All Assets

View All Goals

View Your Assets

View Your Goals

### Portfolio Asset Mapping for your Family :)

An example of Join Query.

**Portfolio: Port2**

Asset Name	Asset Type	Purchase Amount	Purchase Date	Quantity	Total Value
HDFC Bank	Stock	120	2023-12-05 15:47:43	1,351	162,120

**Portfolio: Port4**

Asset Name	Asset Type	Purchase Amount	Purchase Date	Quantity	Total Value
HDFC FD	Fixed Deposits	10,000	2023-11-18 22:58:39	5	50,000
Union Bank FD	Fixed Deposits	15,000	2023-04-10 00:00:00	6	90,000

**Portfolio: Port5**

Asset Name	Asset Type	Purchase Amount	Purchase Date	Quantity	Total Value
TSLA	Stock	800	2023-05-05 00:00:00	8	6,400