Technical Requirement Document

for

Project Name :

BUDDY WALLET - A Friend Like Locker

by

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OBJECTIVES

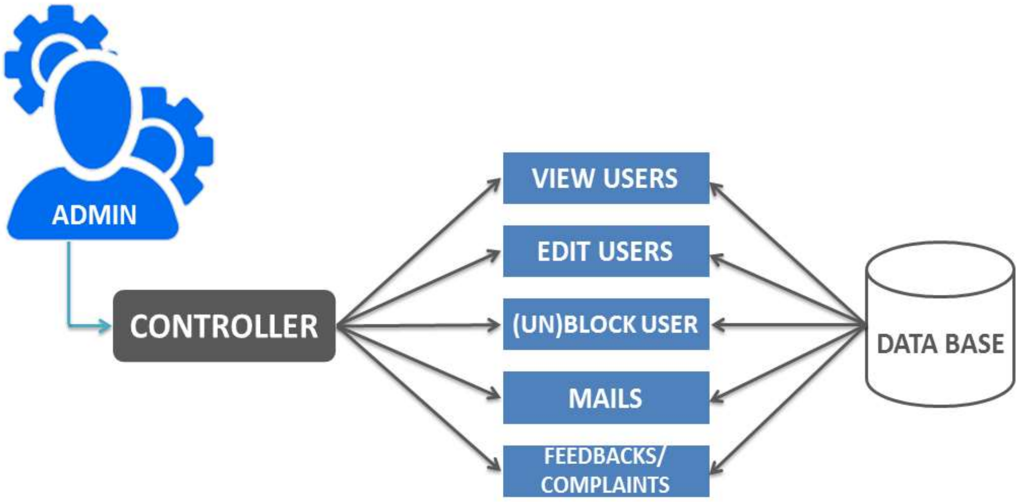
The main objectives of the project are:

- To design a Full-Stack Web application that can serve like a digital money wallet (virtual currency).
- To design a responsive and interactive UI fitted with all the properly functioning requirements in the backend and maintain a good database.

FUNCTIONAL REQUIREMENT

Buddy Wallet is created to meet the needs of online money wallet services. The different functional requirements in the project are as follows:

Functions for the Admin



- **View Users:**
  The admin will be able to view all the existing users in the database with filters for account number, name, mobile number and email Id.

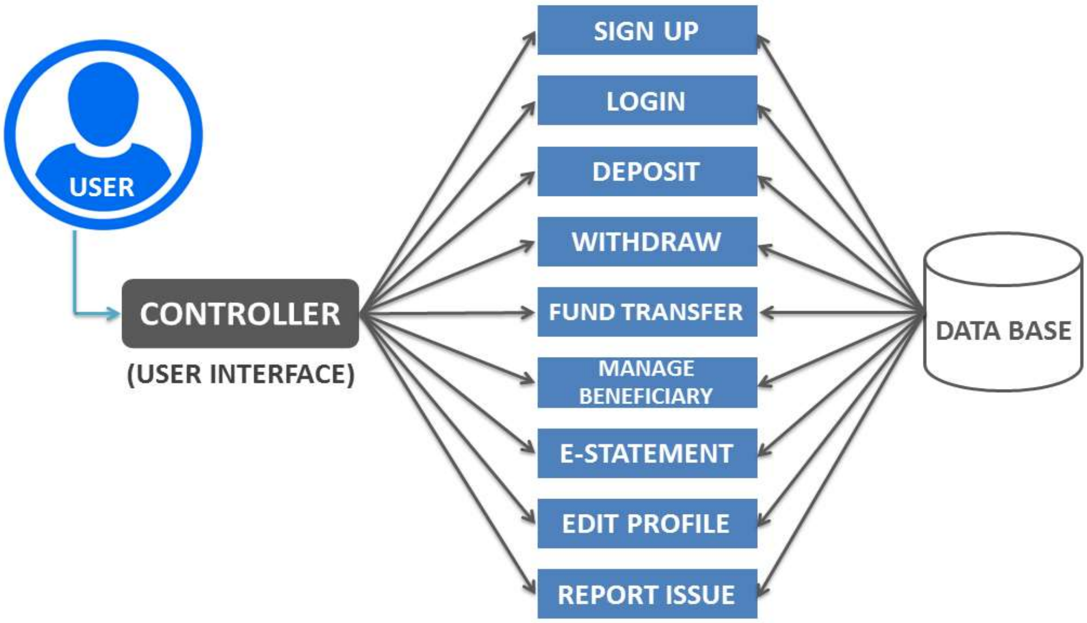
- **Edit User:**
  The admin will be able to edit the details of existing users and update in the database.

- **Block a User:**
  The admin will be able to block/unblock a user when an user is found to do mal activities using the account.

- **Mails:**
  The admin will have to see mails received and help the users by reverting back to them as soon as possible.

- **Feedbacks / Complaints:**
  The admin will have to check the feedbacks and complaints received from users and resolve them and correct the suggestions if any possible.

2.1.2 Functions for the Users



- **Sign Up:**
  A user has to register by providing their first, middle and last names, city, mobile number and email Id and then user is allowed to create a username and password for his/her account.

- **Login:**
  Once an account is created, user can login any number of times into his/her account and perform various transactions.

- **Deposit:**
  A user will be able to add money to his Buddy Wallet at any time using any payment gateway. Once money added into wallet and transaction is successful.

- **Withdraw:**
  A user will be able to withdraw money from his Buddy Wallet at any time using his/her transaction password. If user enters money more than his existing balance or if user enters a wrong transaction password for 3times, Transaction will be failed and user will be temporarily blocked.

- **Fund Transfer:**
  A user will be able to transfer funds existing in his/her wallet to any other Buddy Wallet account by adding him/her as a Beneficiary. If user enters money more than his existing balance or if user enters a wrong beneficiary account number or if user enters a wrong transaction password for 3times, Transaction will be failed.

- **e-Statement:**
  A user will be able to view all the transactions made from his/her account by a single click and with filters for From Date and To Date at anytime.

- **Manage Beneficiary:**
  A user will be able to add any number of beneficiaries to his account. He /She can edit or delete any beneficiary when needed.

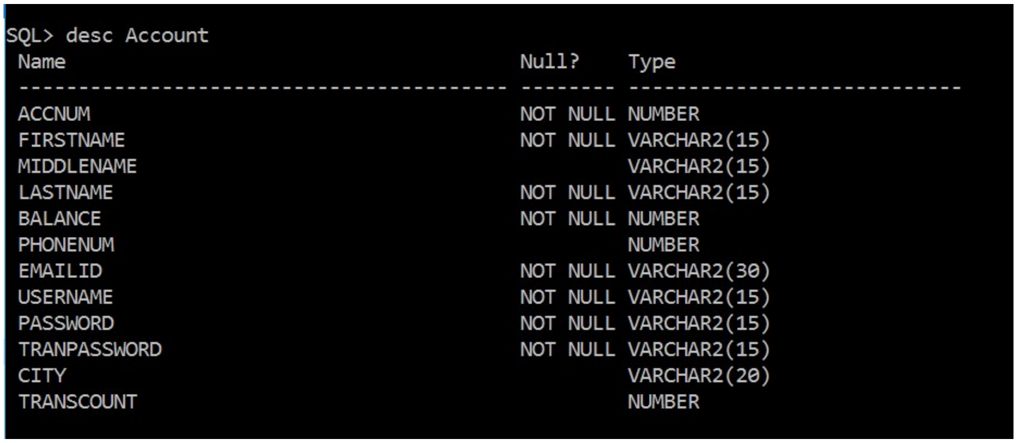
- **Edit Profile:**
  A user will be allowed to change his personal details and passwords on his own. But, to change his/her name or user name etc.., details he need to contact admin.

- **Report Issue:**
  A user will be able to report any inconvenience caused to admin and solve them by sending a report mail explaining his/her problems briefly.

DATA BASE DESIGN

Database of this project is designed into four tables namely Account, BuddyTransactions, Beneficiary and Mails.

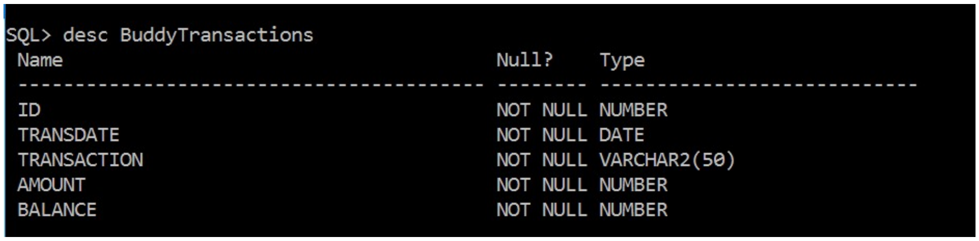
Account Table



```
SQL> desc Account
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ACCNUM                                    NOT NULL NUMBER
 FIRSTNAME                                 NOT NULL VARCHAR2(15)
 MIDDLENAME                                         VARCHAR2(15)
 LASTNAME                                  NOT NULL VARCHAR2(15)
 BALANCE                                   NOT NULL NUMBER
 PHONENUM                                           NUMBER
 EMAILID                                   NOT NULL VARCHAR2(30)
 USERNAME                                  NOT NULL VARCHAR2(15)
 PASSWORD                                  NOT NULL VARCHAR2(15)
 TRANPASSWORD                              NOT NULL VARCHAR2(15)
 CITY                                               VARCHAR2(20)
 TRANSCOUNT                                         NUMBER
```

Apart from these, there are another two variables i.e., **transactions** – a list of BuddyTransactions which is in one-to-many relationship with BuddyTransactions table and **beneficiaries –** a list of Beneficiary which is in one-to-many relationship with Beneficiary table.

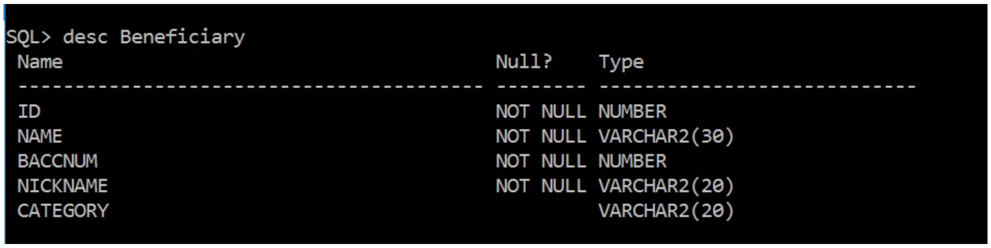
BuddyTransactions Table



```
SQL> desc BuddyTransactions
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL NUMBER
 TRANSDATE                                 NOT NULL DATE
 TRANSACTION                               NOT NULL VARCHAR2(50)
 AMOUNT                                    NOT NULL NUMBER
 BALANCE                                   NOT NULL NUMBER
```

Apart from these, there is one more variable i.e., account – the Account variable which is in Many-to-one relationship with Account table.

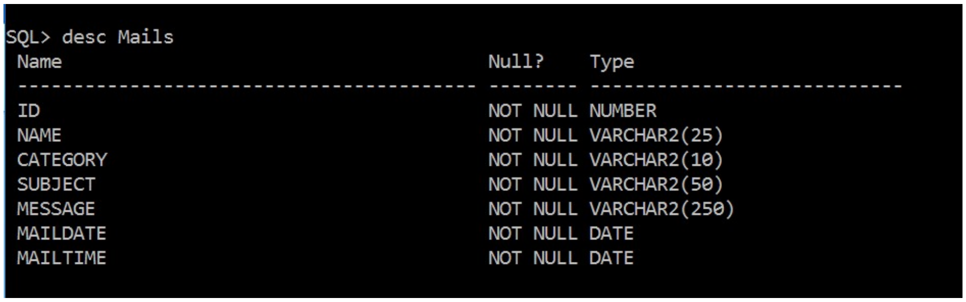
Beneficiary Table



```
SQL> desc Beneficiary
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL NUMBER
 NAME                                      NOT NULL VARCHAR2(30)
 BACCNUM                                   NOT NULL NUMBER
 NICKNAME                                  NOT NULL VARCHAR2(20)
 CATEGORY                                           VARCHAR2(20)
```

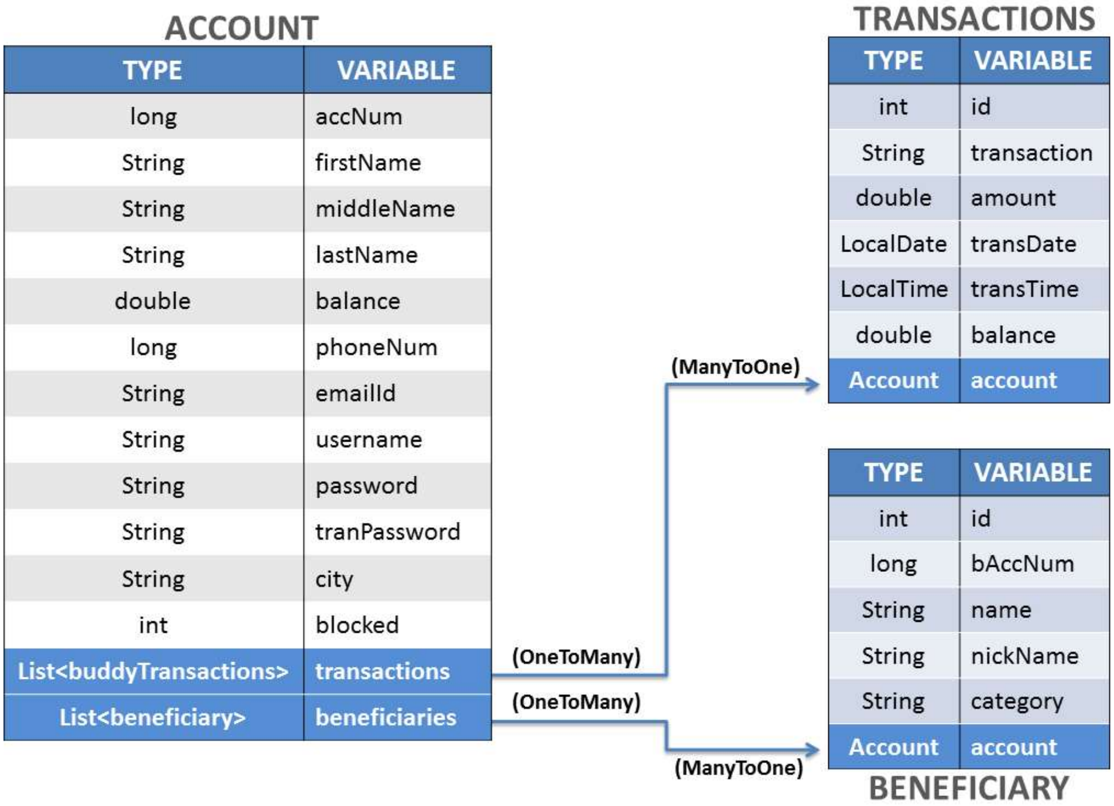
Apart from these, there is one more variable i.e., account – the Account variable which is in Many-to-one relationship with Account table.

Mails Table



```
SQL> desc Mails
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 ID                                        NOT NULL NUMBER
 NAME                                      NOT NULL VARCHAR2(25)
 CATEGORY                                  NOT NULL VARCHAR2(10)
 SUBJECT                                   NOT NULL VARCHAR2(50)
 MESSAGE                                   NOT NULL VARCHAR2(250)
 MAILDATE                                  NOT NULL DATE
 MAILTIME                                  NOT NULL DATE
```

ENTITY RELATIONSHIP DIAGRAM



ACCOUNT

TYPE	VARIABLE
long	accNum
String	firstName
String	middleName
String	lastName
double	balance
long	phoneNum
String	emailId
String	username
String	password
String	tranPassword
String	city
int	blocked
List<buddyTransactions>	transactions
List<beneficiary>	beneficiaries

TRANSACTIONS

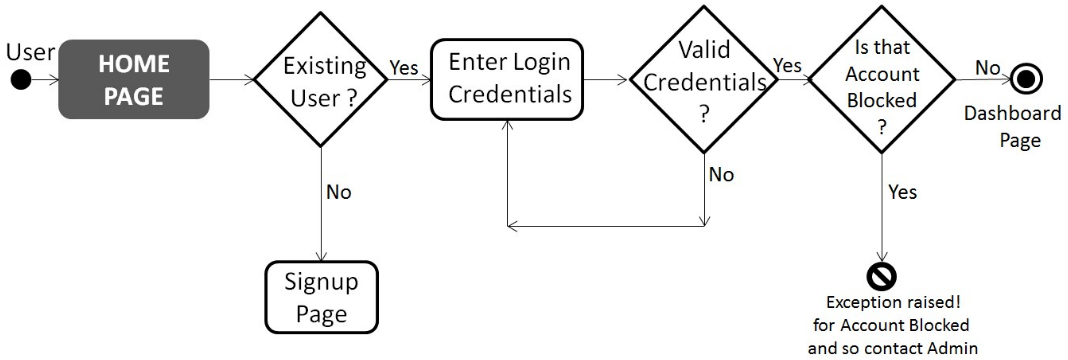
TYPE	VARIABLE
int	id
String	transaction
double	amount
LocalDate	transDate
LocalTime	transTime
double	balance
Account	account

TYPE	VARIABLE
int	id
long	bAccNum
String	name
String	nickName
String	category
Account	account

BENEFICIARY

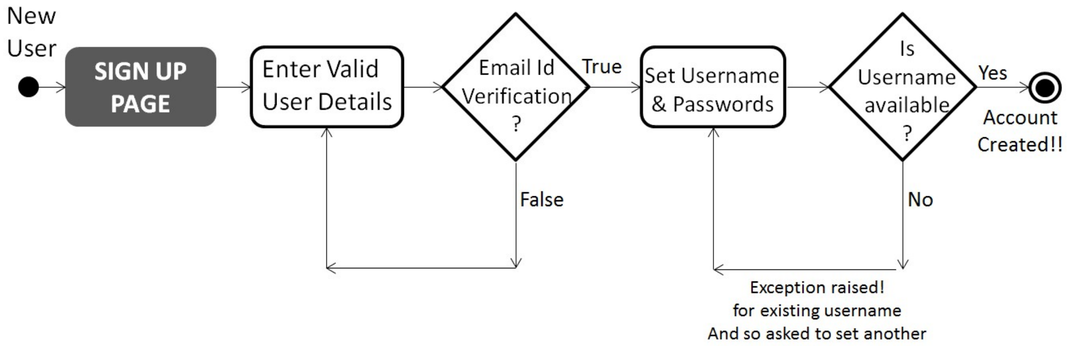
METHODOLOGY

HOME / LOGIN PAGE

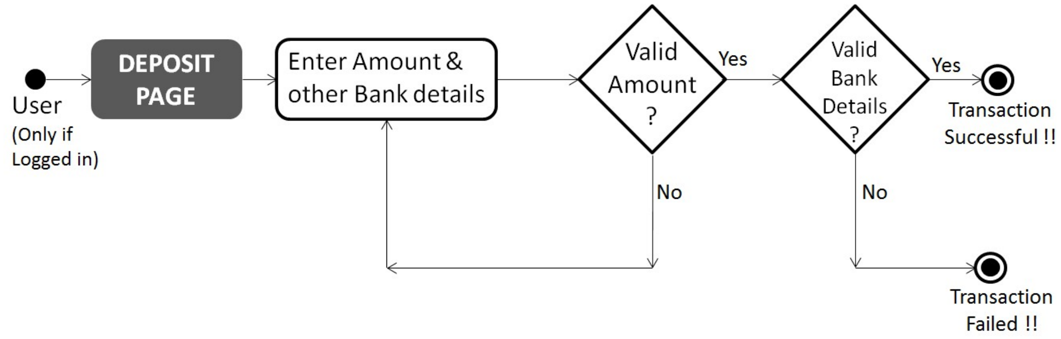


This is the first page any user will visit on starting the website and here, user can choose login or signup options and navigate to respective operations page.

SIGNUP PAGE

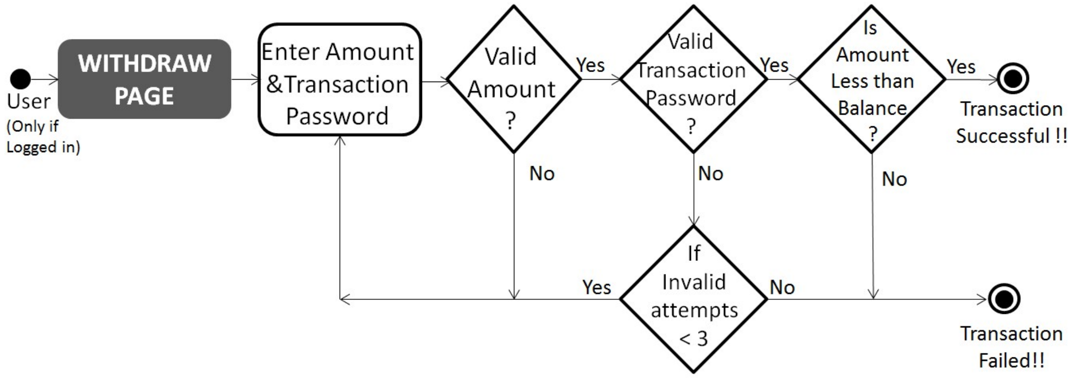


DEPOSIT PAGE



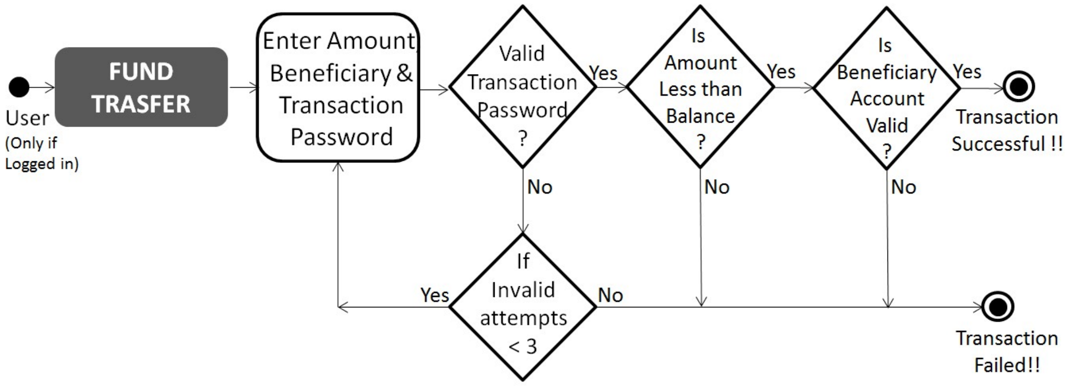
This page is used to add money to the wallet through any debit card or credit card and this validates the amount entered and other bank details and if all the details are valid, then the deposit request is initiated for database update and reflects the message to the UI.

WITHDRAW PAGE


User
(Only if Logged in)
WITHDRAW PAGE
Enter Amount &Transaction Password
Valid Amount ?
Yes
No
Valid Transaction Password ?
Yes
No
Is Amount Less than Balance ?
Yes
No
If Invalid attempts < 3
Yes
No
Transaction Successful !!
Transaction Failed!!

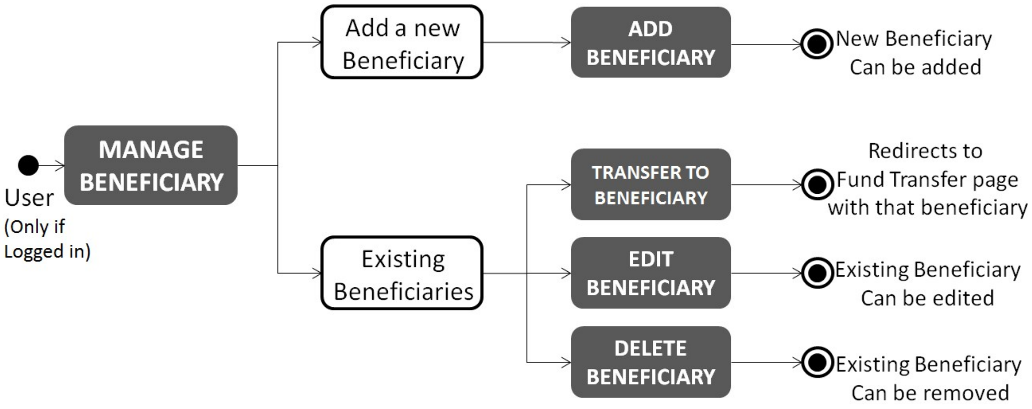
This page deals with withdrawal of money available in the wallet and so it is highly secured as it may lead to loss of money in case of unauthorized use. So, it has validations about the money entered if it is greater than existing balance and it gives the user 3 options to enter the Transaction Password and after 3 invalid attempts, user will be blocked and transaction will be failed.

FUNDTRANSFER PAGE


User
(Only if Logged in)
FUND TRASFER
Enter Amount Beneficiary & Transaction Password
Valid Transaction Password ?
Yes
No
Is Amount Less than Balance ?
Yes
No
Is Beneficiary Account Valid ?
Yes
No
Transaction Successful !!
If Invalid attempts < 3
Yes
No
Transaction Failed!!

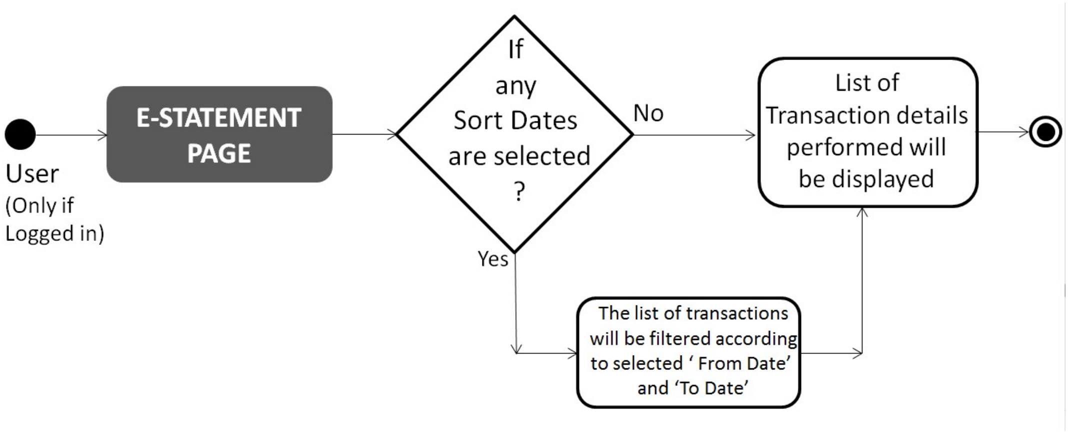
This page deals with transfer of money from one buddy account to another buddy account and it checks the various validations about the amount entered if it is greater than existing balance and it gives 3 options to enter the Transaction Password and after 3 invalid attempts, user will be blocked and transaction will be failed and also about the details given about the beneficiary if they are valid or not.

MANAGE BENEFICIARY PAGE



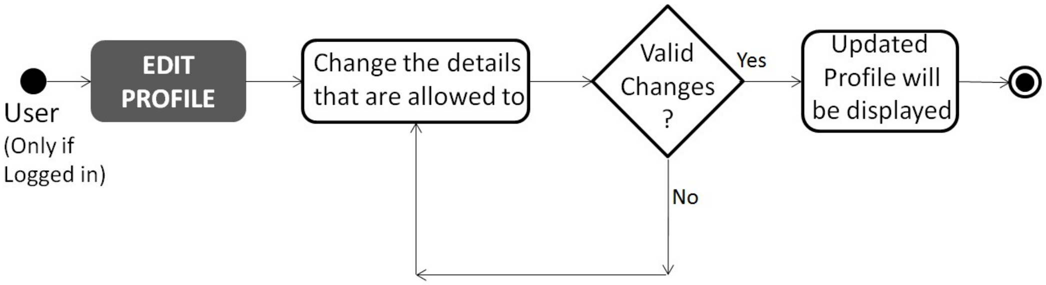
This page helps the user to add any new beneficiary if needed or edit the existing one and even delete the unnecessary beneficiary. We can directly navigate to Fund Transfer page with the selected beneficiary details filled automatically.

E-STATEMENT PAGE


User
(Only if Logged in)
E-STATEMENT PAGE
If any Sort Dates are selected ?
No
Yes
List of Transaction details performed will be displayed
The list of transactions will be filtered according to selected ' From Date' and 'To Date'

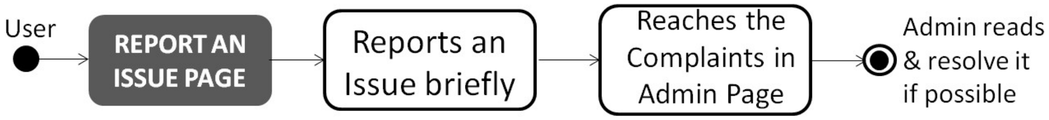
On navigating to this page, user will be able to view the list of details about all the transactions performed from that account like transaction date and time, type of transaction and balance after each transaction.

EDIT-PROFILE PAGE


User
(Only if Logged in)
EDIT PROFILE
Change the details that are allowed to
Valid Changes ?
Yes
No
Updated Profile will be displayed

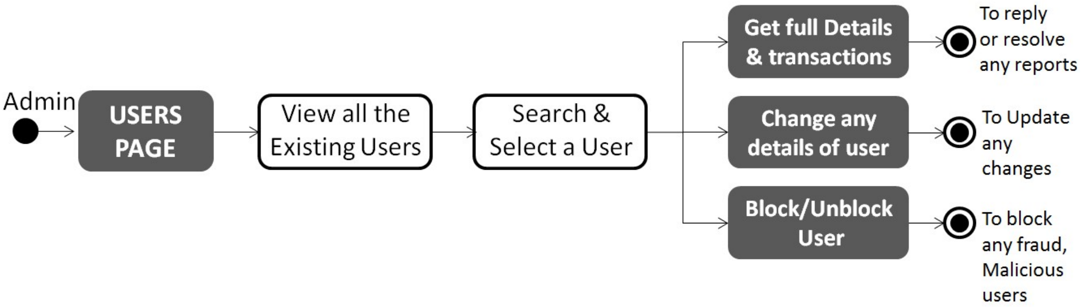
This page shows both the perosnal information and account related information of a user. A user is allowed to make the selective changes and update in database from this page like new email id, mobile number or change the password and transaction password. But, the details like name on account, username and other transaction related can be modified only by the admin and so user has to raise a ticket to admin if needed.

REPORT AN ISSUE PAGE


User
REPORT AN ISSUE PAGE
Reports an Issue briefly
Reaches the Complaints in Admin Page
Admin reads & resolve it if possible

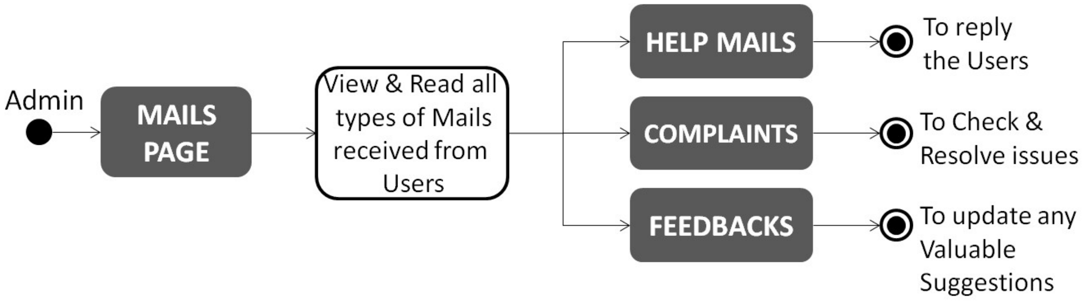
This page plays the key role as a communication place between the users and admin. All types of problems related to the user's account can be raised here and the issues will immediately reach the admin mail. It is like digital customer care service.

USERS PAGE (ADMIN)


Admin
USERS PAGE
View all the Existing Users
Search & Select a User
Get full Details & transactions
To reply or resolve any reports
Change any details of user
To Update any changes
Block/Unblock User
To block any fraud, Malicious users

The admin pages have a high level privacy and security reasons and only authorized persons are allowed to visit this page as these pages contain valuable data about the users and company. This users page shows the entire existing user accounts details and admin can change if needed also. Admin can block/unblock any malicious users also in this page.

MAILS PAGE (ADMIN)


Admin
MAILS PAGE
View & Read all types of Mails received from Users
HELP MAILS
COMPLAINTS
FEEDBACKS
To reply the Users
To Check & Resolve issues
To update any Valuable Suggestions

The Mails page has 3 categories like help mails, complaints and feedbacks. Admin can hear the users' voice through this page and resolve them and update the project itself with valuable suggestions.