A Database Mini Project Report
on
"MoneyMize Expense Manager"

Submitted to the
Savitribai Phule Pune University
In partial fulfillment for the award of the Degree of
Bachelor of Engineering in
Information Technology
By

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2019-2020

CERTIFICATE

This is to certify that the mini project report entitled **"Title of mini project"** being submitted by **Omkar Deshpande (33213, TE-10)** is a record of bonafide work carried out by him/her under the supervision and guidance of **Prof. J. K. Kamble/Prof. S. A. Jakhate** in partial fulfillment of the requirement for **TE (Information Technology Engineering) – 2015 course** of Savitribai Phule Pune University, Pune in the academic year 2019-2020.

Date: 16/10/2019

Place: PICT ,Pune

Guide　　Subject Coordinator　　Head of the Department

Principalthis Project Based Seminar report has been examined by us as per the Savitribai Phule Pune University, Pune requirements at Pune Institute of Computer Technology, Pune – 411043 on . . . .

Internal Examiner　　External Examiner

ACKNOWLEDGEMENT

I would like to express my gratitude towards the teachers and staff:

"The success and final outcome of this project required a lot of guidance and assistance from many people and I am extremely privileged to have got this all along the completion of my project. All that I have done is only due to such supervision and assistance and I would not forget to thank them."

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1. ABSTRACT

In this project we have created one web-application which is easy to use and is user friendly. For this application we have used the database as "Mysql" to store the data and for the user interface we have used "HTML" , "CSS", "BOOTSTRAP", "JAVASCRIPT", "JSP(Java-Server-Pages)".Users can use the web-application for systematic and efficient management of their money expenditure. such as: For our application we have provided various functions such as maintaining user's wallet balance, secondly user can enter his/her daily expense ,personal expense (in which user to user transaction is possible), group event (in which splitting of amount per user is done) and correspondingly wallet of relevant users is updated. Log is maintained for each user accordingly to transactions performed. All the functions are written in JAVA language (i.e server side JSP-language) which can be hosted anywhere.

2. INTRODUCTION

This application deals with managing money dealing with transactions (i.e) lending and borrowing , maintaining daily and personal expenses, equal distribution of money within a particular group named group event. This type of web application can be used by any kind of users,who want to keep track of their daily expense, who want to analyze the expenditure of a particular week or month or how much money they lend to someone or how much money they are owing. So according to this they can limit their expenses or rather increase them (according to their wallet balance) and simultaneously analysis of a particular user is also done according to days,weeks,month by maintaining a simple graph chart. Notification about a particular event when a transaction is made is also shown.

3.BACKGROUND AND MOTIVATION

The idea of our project came from our daily routine.

For example:

Hostelites keep track of their daily expenses manually. Either they write it in a diary or in some notes. But, when it comes to the part of calculating total and average it becomes lengthy to keep track of all the notes. So, if they use our web application it will be really handy and easy for them to calculate the expenses and it will also help them to analyze the expenditure through analysis chart. User can enter daily expense in daily expenses category and this will also maintain the log's of a particular user and thus when a user logins on his/her dashboard the daily expense category will be listed according to current(today's) date. The user can also search on which particular date I have spend how much amount, this facility is also there.

Not only hostelites but other types of users such as industry co-workers, shopkeepers, housewifes, children can also use this web application.

3.1 NEED FOR THIS APPLICATION

There is difference between manual system calculations and technical system calculations.

Manual system: The system is very time consuming and lazy. This system is more prone to Errors and sometimes the approaches to various problems are unstructured.

Technical system: With the advent of latest technology if we do not update our system then Our data (here money) results in losses gradually with time. The technical systems contain the tools of latest Trend i.e. computers servers, fax, Internet etc. The systems with this technology are very fast, Accurate, user-friendly and reliable.

4. OBJECTIVE

Need of Moneymize :

1) Convenience

2) Reliable

3) Analysis is shown as per, days, weeks, months

4) User friendly, simple UI

5. METHODOLOGY

To implement the above goals, the following methodology needs to be followed:

1. Specifying the Application and various components of the Architecture.

2. Specifying the bindings between the tasks and the resources either manually or by the design
Tools.

3. Specifying the port interconnections between the resources.

5.1. Personal Event:

If user-A borrows money from user-B then user-B can send the request to the user-A that he/she had borrowed from him/her & this request will be stored in pending personal request table. Now user-B(borrower) will approve or reject the request. If he/she approves , the request will be stored in personal event table & a "PAY" button will be available to the borrower to pay the borrowed money. But if borrower rejects the request,request will be deleted from the pending personal request table. Every action of the borrower will be notified to the lender through the notification table and vice versa.

Every action of the user in personal event will be stored in personal event log table.

5.2. Daily Expenses:

User can add daily expenses and his/her expense of whole day will be stored in daily expense table with total amount of respective day. All the categories with their amount will be stored in daily category table. User can search daily expense according to the date provided by user by matching the date field in daily expense table.

5.3. Group Event:

If user creates a group event a group event will be created and it will be stored in group event table & for all the participants that are added in the group event by the owner, a group event request will be created and it will be stored in pending group request table & all the participants will get notified and the request will be shown in pending group request block of dashboard with amount distributed equally among the participants including owner. If a participant accepts group request then the respective request will be stored in user in group table and that participant will be able to 'PAY' for that respective group event (i.e. owner will be paid), hence the respective changes will be made in the wallets of all the participants including owner in user table.

Participants and the owner will be notified with respect to each others actions.

5.4. Notification:

For every action of user that makes changes to the respective wallet will be notified to the respective person. All-log table contains every task performed by the particular user.

6. SCOPE OF PROJECT

The scope of the project is clear to give a simple and attractive application to simplify the work as well as to reduce the efforts while doing it offline or we can say by doing it with old methods. In this application we are able to save database of all money based transactions present on the site in MySQL (in from of tables). Various functions in jsp have been used like dealing with servlet, session, calling servlet within another servlet and similarly triggers, stored procedures, insert, update, delete etc. commands are used in MySQL to store the values in database.

7. REQUIRMENTS

Hardware requirements:

Minimum of 4gb ram, java platform installed.

Software requirements:

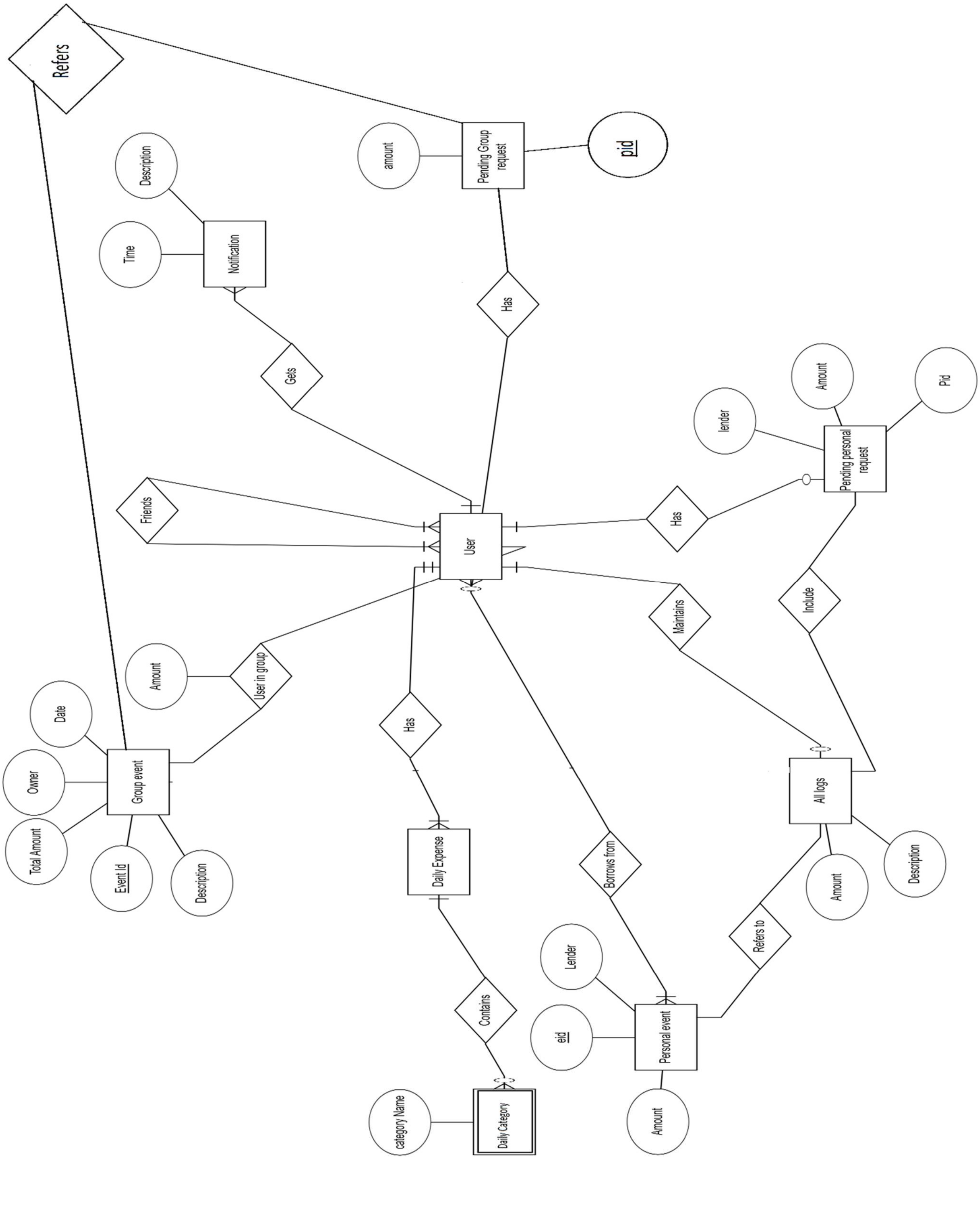
Any IDE which support Java Programming.
Any Server installed, preferably Apache tomcat 8.5
1.MySQL - (DATABASE BACKEND)
2.JSP - (FRONT END)
3.JDBC/-(CONNECTIVITY)

We are going to perform the project on windows platform so we need the OS as Windows Any version of windows can work. Here we have used windows 10. The system should have minimum ram of 256MB as well as minimum storage capacity of 15GB.The system should contain the server software named as "Eclipse for Java EE" of any version (neon, oxygen) or any IDE which supports JAVA. For time being we are dealing with eclipse so it should be installed. Latest is eclipse neon (which is easy to configure and handle and it is fast). And "**MYSQL**" DB of version compatible to windows should be installed Any other IDE can also work but eclipse is preferable.

Then most important a server needs to be installed, without that project can't run, As it is a dynamic web project we are using server named **"Tomcat server 8.0.17"** which can be easily installed and files can be easily hosted on anywhere with specific port number without internet.

For other IDE others servers are pre-installed After installation of all the software we have to do connectivity between them by changing the configurations, paths, addition of various files etc.,

8. E-R Diagram


Refers
Description
Time
Notification
Gets
amount
Pending Group request
pid
Has
Amount
lender
Pid
Pending personal request
Has
Friends
User
Include
Maintains
User in group
Amount
Date
Owner
Group event
Total Amount
Event Id
Description
Has
Daily Expense
Borrows from
All logs
Amount
Description
Refers to
Contains
Lender
eid
Personal event
Amount
category Name
Daily Category

9. Schema Diagram

1] user

Phone (pk)	email-id	Name	Wallet	Password

2]Personal Event

amount	Lender (fk)	Borrower (fk)	Eid (pk) (auto increment)

3] Pending Personal Request

amount	Lender (fk)	Borrower (fk)	Pid (pk) auto increment

4]Personal Event Log:

amount	lender	borrower	eid

5] Daily Expenses:

User (fk)	Date	Total_amount	Expense_id (pk) auto increment

6] Daily Category

Expense_id (fk)	category	Amount

7] Group Event

Event_id (pk) auto increment	Description	Date	Total_Amont	Owner (fk)

8] Pending Group Request

amount	User (fk)	Pid (pk) auto increment	Eid (fk)

9] User in group

amount	event_id (fk)	User (fk)	Pid (pk) auto increment

10] Notification

time	description	User (fk)

11] Friends

User1 (fk)	User2 (fk)

12] All-log

amount	description	User (fk)

---

10. RELATIONAL DATA BASE DESIGN

1] user

phone	email-id	Name	Wallet	Password

2]Personal Event

amount	lender	borrower	eid

3] Pending Personal Request

amount	Lender	borrower	pid

4]Personal Event Log

amount	lender	borrower	eid

5] Daily Expenses

User	Date	Total_amount	expense_id

6] Daily Category

Expense_id	category	Amount

7] Group Event

Event_id	Description	Date	Total_Amont	Owner

8] Pending Group Request

amount	User (fk)	pid	Eid (fk)

9] User in group

amount	event_id	user	pid

10] Notification

time	description	user

11] Friends

user1	user2

12] All-log

amount	description	user

11. Database Normalization:

First Normal Form:

The relation is in 1NF if it has no repeating groups. All tables has no repeating groups so they are in 1NF.

For Example

1] user

phone	email-id	Name	Wallet	Password

2]Personal Event:

amount	lender	borrower	eid

Second Normal Form

A relation is said to be in second normal form if it is already in first normal form and it has no partial dependency

1) User:

The absence of partial dependency in relation takes it into 2NF without any modification

2) Personal Event:

The absence of partial dependency in relation takes it into 2NF without any modification.

3) Pending Personal Request:

The absence of partial dependency in relation takes it into 2NF without any modification

4) Group Event:

The absence of partial dependency in relation takes it into 2NF without any modification

Tables :

1] user

phone	email-id	Name	Wallet	Password

2]Personal Event

amount	lender	borrower	eid

Third Normal Form

A relation is said to be in third normal form if it is already in 1st and 2nd NF and has no transitive dependency.

1) **Personal Event:**
In Personal Event every attribute depends on primary key so it is in 3rd normal form

2) **Group Event:**
In Group Event every attribute depends on primary key so it is in 3rd normal form

3) **User:**
In User every attribute depends on primary key so it is in 3rd normal form

4) **Daily Expense:**
In Daily expenses every attribute depends on primary key so it is in 3rd normal form

5) **Notifications:**
In Notifications every attribute depends on primary key so it is in 3rd normal form

Tables:
1]Personal Event:

amount	lender	borrower	eid

2] Group Event

Event_id	Description	Date	Total_Amont	Owner

3] User

phone	email-id	Name	Wallet	Password

12. GRAPHICAL USER INTERFACE

The application is very user friendly and uses a GUI interface implemented in CSS , HTML ,BOOTSTRAP, JavaScript to Communicate with the user. Various features are self – explanatory. Forms are easy to fill in and components can be added, removed and updated very easily through a Single dialog box. The application includes tool-tip hints to give a brief description of the particular input Field. Drop down lists to display categories of particular field.

List boxes are used to display all the components at once so that user can see all the components of a Particular type at once. One can just select the component and modify and remove the component. (based on the access control of the person).

Hover effects are provided to the sign-in and login buttons for appealing effect. Theme is selected in such a way that it can be changed as per convenience of the user. Default selected is dark theme ,but it can be changed to white background or any other combinations provided. Proper alignment of buttons are done,so that user can easily navigate through them. Notification icon is provided with red colour so it is visible to eye instantly as soon as user logs in.

Dashboard contains category's on left side of interface which are aligned properly and colour schema and combination is efficient.

Features:

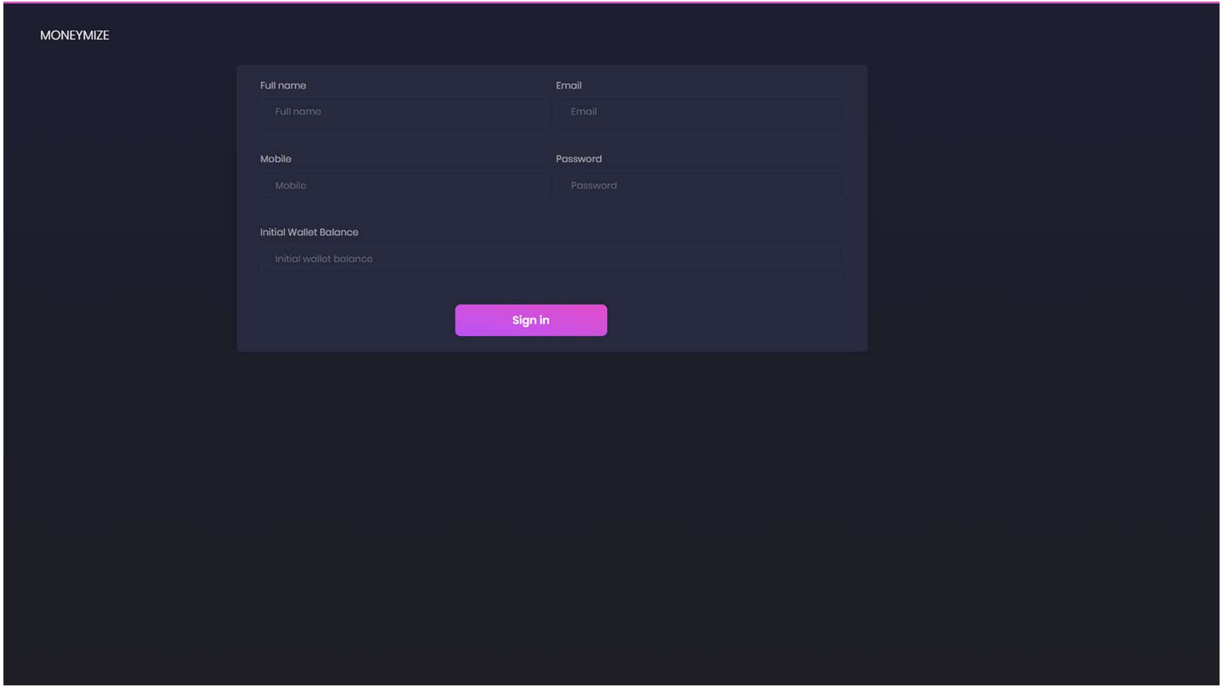
1. Clean separation of various components to facilitate easy modification and revision.

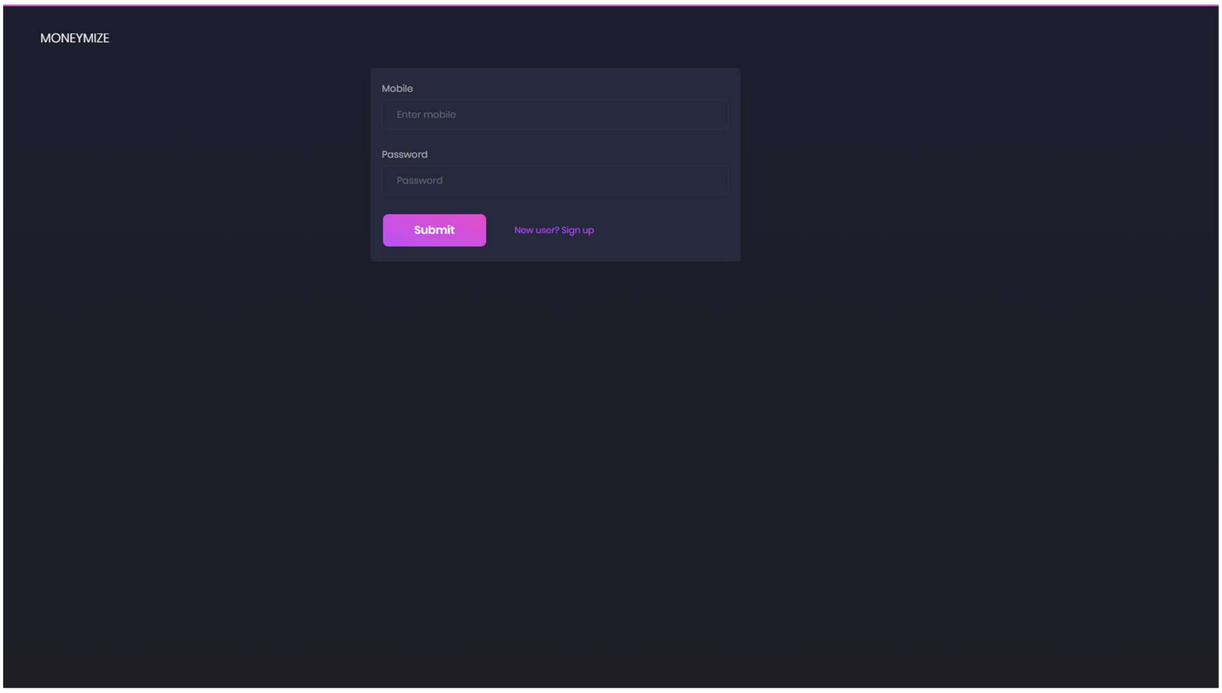
2. All the data is maintained in a separate file to facilitate easy modification

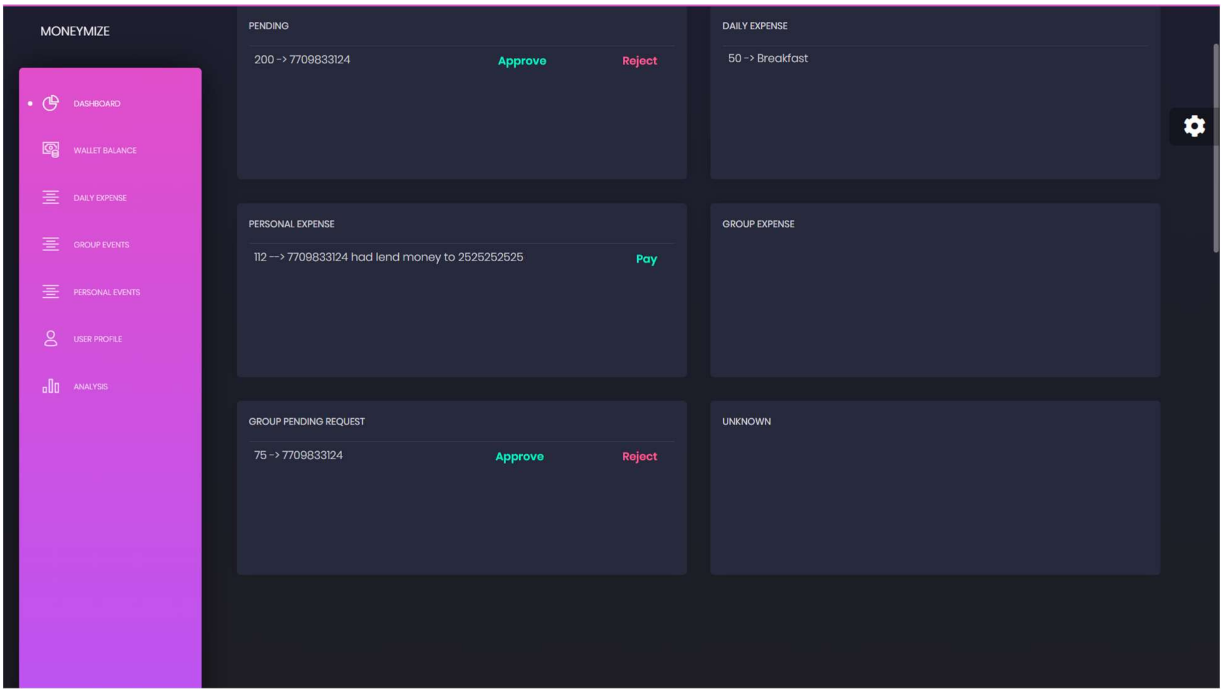
3. All the data required for different operations is kept in a separate file.
4. Quick and easy saving and loading of database file.

Snapshots of the application

Customer View: (User view)







PENDING

200 -> 7709833124

DAILY EXPENSE

50 -> Breakfast

PERSONAL EXPENSE

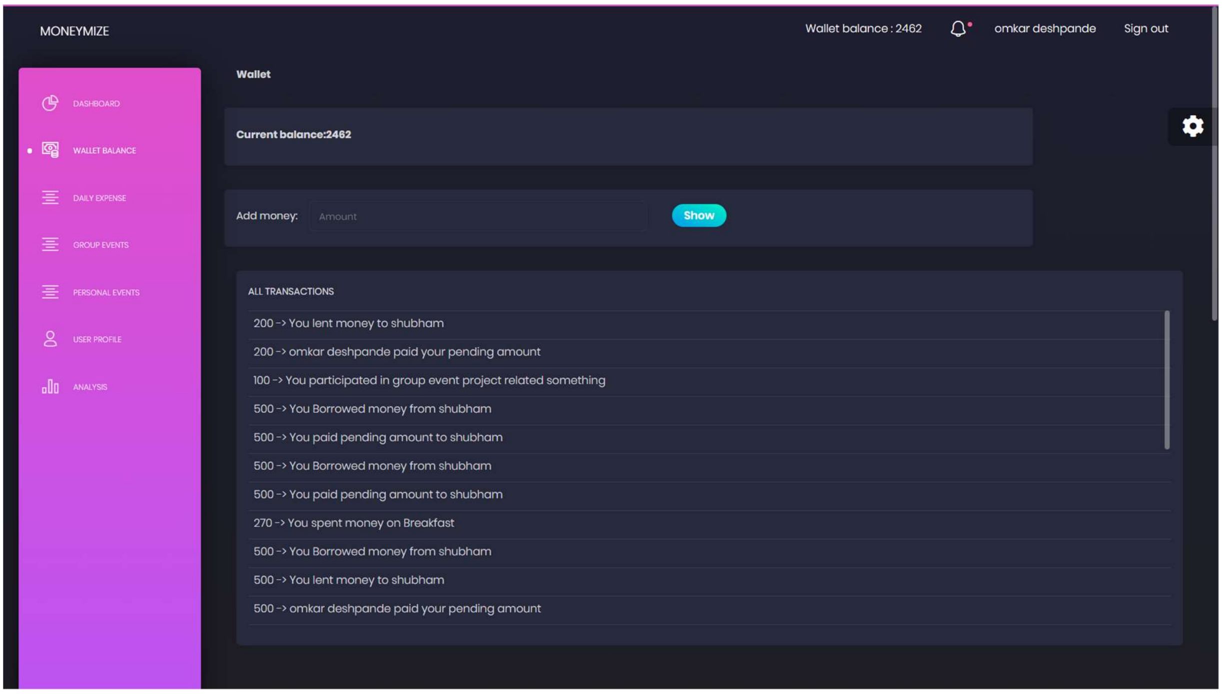
112 --> 7709833124 had lend money to 2525252525

GROUP EXPENSE

GROUP PENDING REQUEST

75 -> 7709833124

UNKNOWN



Wallet balance : 2462

omkar deshpande

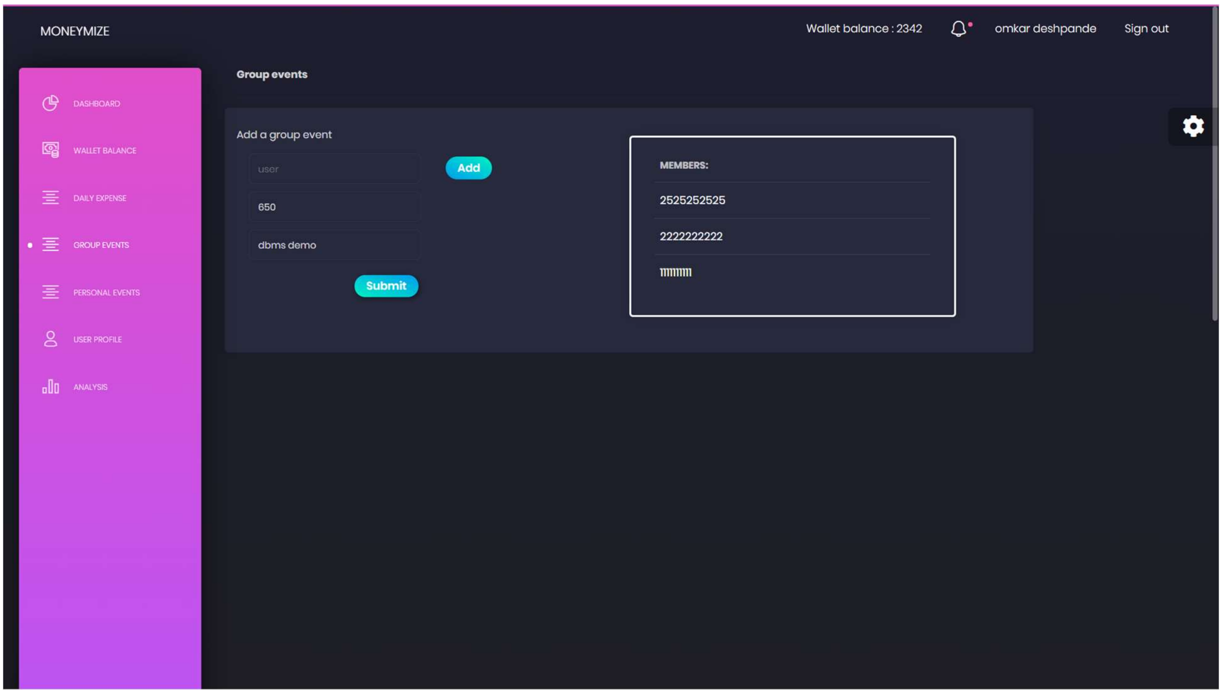
Wallet

Current balance:2462

Add money: Amount

ALL TRANSACTIONS

200 -> You lent money to shubham
200 -> omkar deshpande paid your pending amount
100 -> You participated in group event project related something
500 -> You Borrowed money from shubham
500 -> You paid pending amount to shubham
500 -> You Borrowed money from shubham
500 -> You paid pending amount to shubham
270 -> You spent money on Breakfast
500 -> You Borrowed money from shubham
500 -> You lent money to shubham
500 -> omkar deshpande paid your pending amount



Group events

Add a group event

user

650

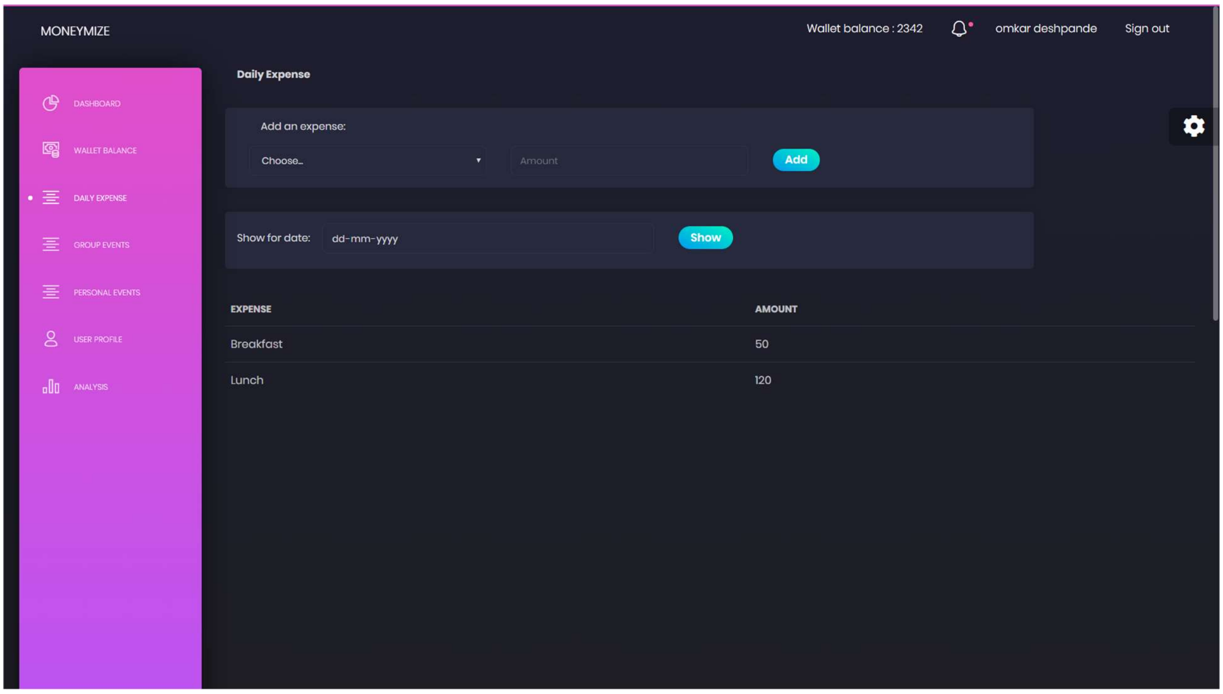
dbms demo

MEMBERS:

2525252525

2222222222

1111111111



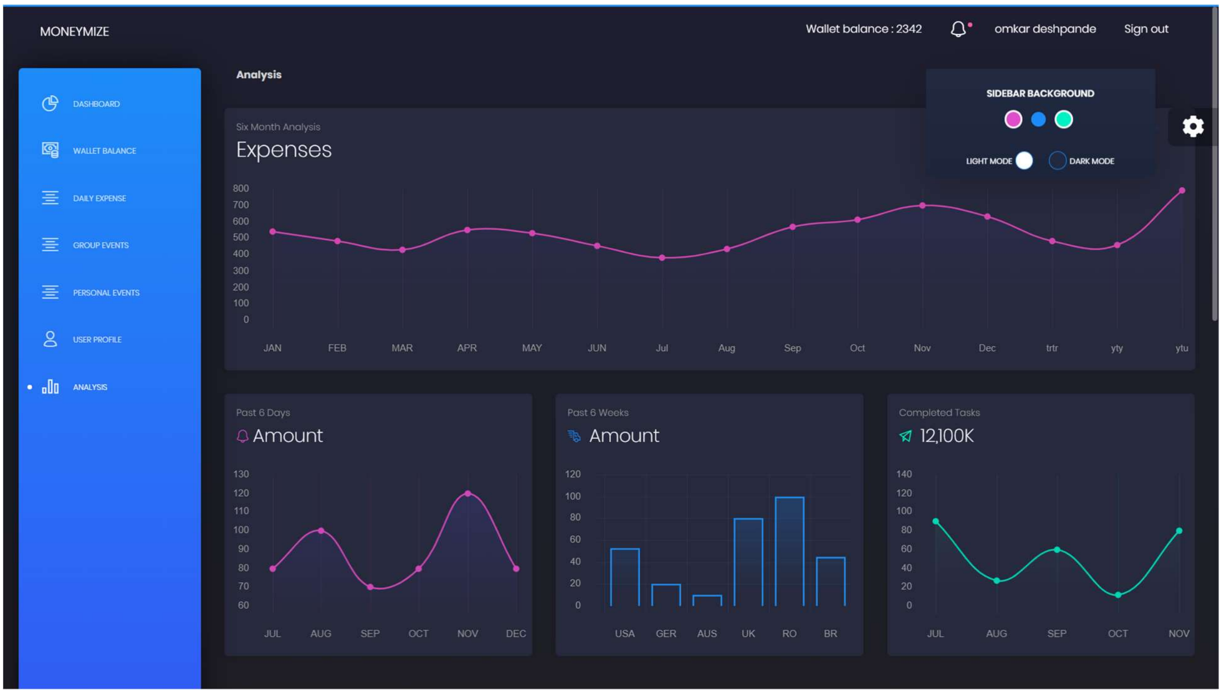
Daily Expense

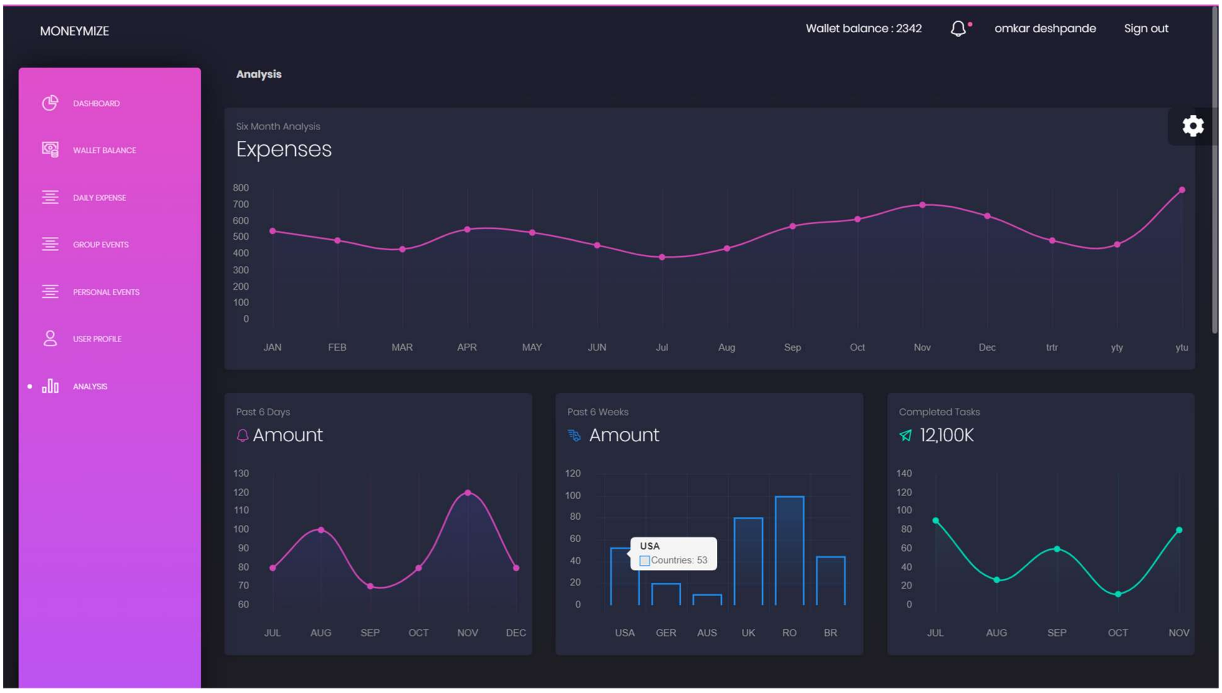
Add an expense:

Choose... ▾ Amount

Show for date: dd-mm-yyyy

EXPENSE	AMOUNT
Breakfast	50
Lunch	120


MONEYMIZE
Wallet balance : 2342
omkar deshpande
Sign out
DASHBOARD
WALLET BALANCE
DAILY EXPENSE
GROUP EVENTS
PERSONAL EVENTS
USER PROFILE
ANALYSIS
Analysis
SIDEBAR BACKGROUND
LIGHT MODE
DARK MODE
Six Month Analysis
Expenses
800 700 600 500 400 300 200 100 0
JAN FEB MAR APR MAY JUN Jul Aug Sep Oct Nov Dec trtr yty ytu
Past 6 Days
Amount
130 120 110 100 90 80 70 60
JUL AUG SEP OCT NOV DEC
Past 6 Weeks
Amount
120 100 80 60 40 20 0
USA GER AUS UK RO BR
Completed Tasks
12,100K
140 120 100 80 60 40 20 0
JUL AUG SEP OCT NOV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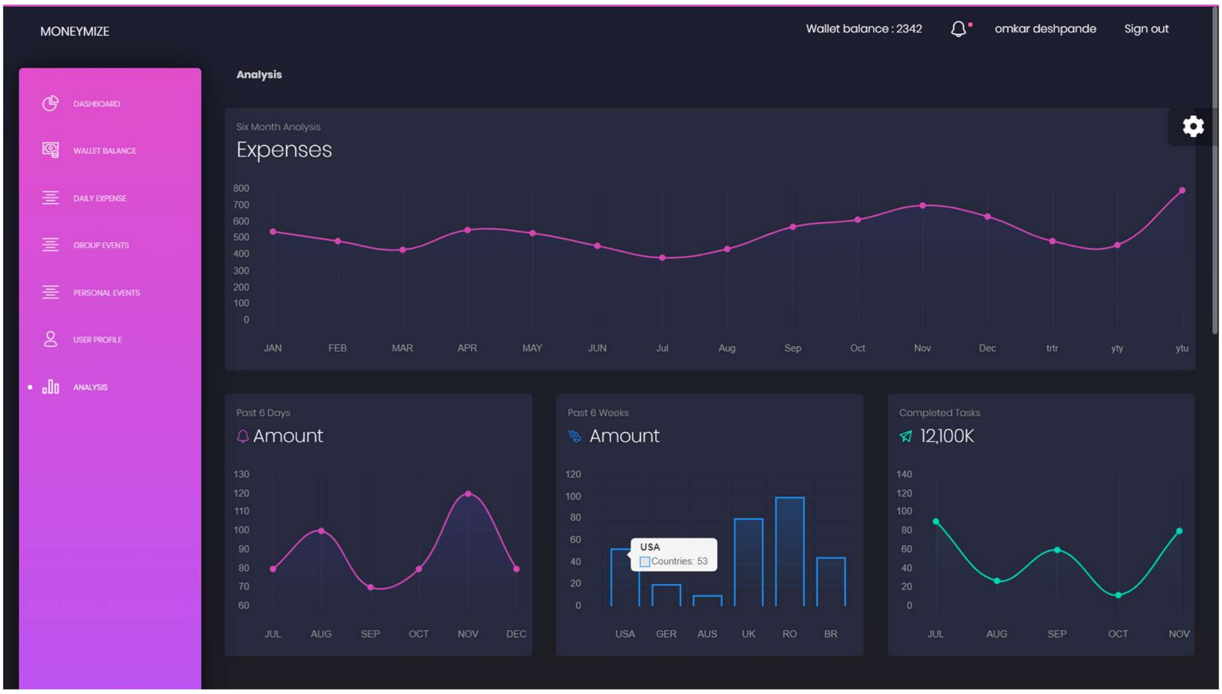
800 700 600 500 400 300 200 100 0
JAN FEB MAR APR MAY JUN Jul Aug Sep Oct Nov Dec trtr yty ytu
Past 6 Days
Amount
130 120 110 100 90 80 70 60
JUL AUG SEP OCT NOV DEC
Past 6 Weeks
Amount
USA
Countries: 53
120 100 80 60 40 20 0
USA GER AUS UK RO BR
Completed Tasks
12,100K
140 120 100 80 60 40 20 0
JUL AUG SEP OCT NOV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Six Month Analysis
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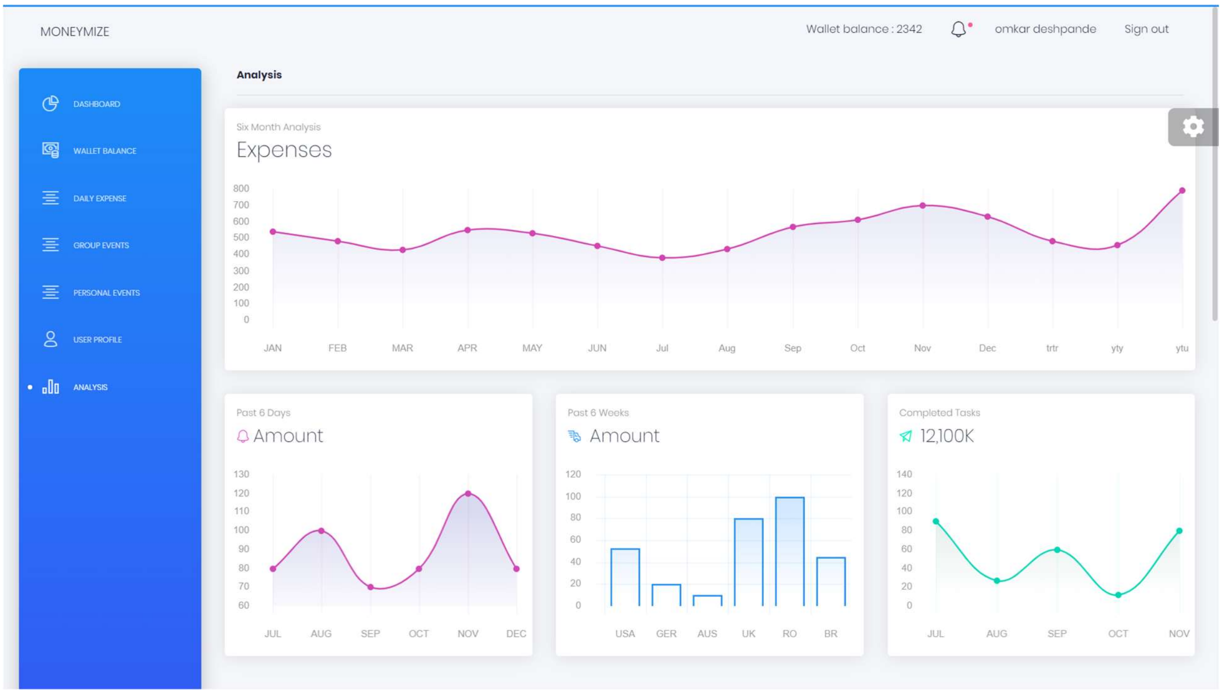
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Sign out
DASHBOARD
WALLET BALANCE
DAILY EXPENSE
GROUP EVENTS
PERSONAL EVENTS
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ANALYSIS
Analysis
Six Month Analysis
Expenses
800 700 600 500 400 300 200 100 0
JAN FEB MAR APR MAY JUN Jul Aug Sep Oct Nov Dec trtr yty ytu
Past 6 Days
Amount
130 120 110 100 90 80 70 60
JUL AUG SEP OCT NOV DEC
Past 6 Weeks
Amount
120 100 80 60 40 20 0
USA GER AUS UK RO BR
Completed Tasks
12,100K
140 120 100 80 60 40 20 0
JUL AUG SEP OCT NOV

13. Conclusion:

Thus we have successfully implemented web application and android application (Moneymize) Helps us in centralizing the data and performing transactions on virtual money (user to user) & we have successfully implemented various functionalities such as:

1) Daily Expense Management
2) Analysis of Expense
3) Notificaton of particular transaction
4) Personal Expense Management
5)Money management is joined ventures

14. References:

1) YouTube (Telusko, programming knowledge)
2) Stackoverflow
3) Tutorials Point
4) Google
5) Geeksforgeeks