

IMPLEMENTATION OF AN APPLICATION USING JAVA FX IDEA-INDIAN PREMIER LEAGUE GAME ANALYSIS

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Introduction

Cricket is a game similar to Baseball highly popular in England, Australia, India and other south Asian countries: **Indian Premier League (IPL)** is a professional Twenty20 cricket league in India, founded in 2008. Top cricket players from all over the world are drawn to it, making it one of the most lucrative and well-known sports leagues in the world. To provide a consolidated and effective system for maintaining and analysing data linked to the Indian Premier League, a database management system (DBMS) along with JavaFX based Object Oriented programming concept-based User Interface have been developed. The IPL generates a ton of data, including information about players, teams, match times, and venues. This data can be arranged and kept in a structured, readily accessible way with the aid of a DBMS. The following are some use cases considered here for the study:

Login: Admin or Team level users can login using this page. Admin will have complete access. Can do add edit and delete operations in the application. Other users can only login and view the match schedules published by the admin.

Registration: Team level user can register providing their details along with username and password of their choice. Once successfully registered, can login and view the match schedules.

Manage Match Schedules: Admin can Add/ Delete Match Schedules. Also, can update the match outcomes.

View Match Schedules: All the published match schedules can be viewed by logged in user. Admin can view all schedules irrespective of team in a Table View format. Similarly, team level users can view but only the schedules of their respective team.

This is designed with a multi-tier architecture, which separates the application into front-end, back-end, and data base components.

Login Credentials:

Admin:

User name: admin1

Password: admin1

User:

User name: Farhana

Password:12345

Technologies Used:

- **Front-End Architecture:** The front-end is built using JAVA FX and is responsible for rendering the user interface.
- **Back End Architecture:** The back-end architecture handles the incoming requests from front end architecture and communicates with data base.
- **Data-base Architecture:** The database architecture consists of tables and views that store the application data. The tables are designed to store player data, match data and team data. Views are used to provide a more meaningful representation of the data to users. The data base is accessed by the back-end architecture.
- **Deployment Architecture:** The application is deployed and designed to be scalable and can handel multiple users at the same time.

Functional requirement of this project:

1.User Authentication: The application should allow users to create an account and log in with their credentials. the user authentication system should ensure that only authorized users have access to the application.

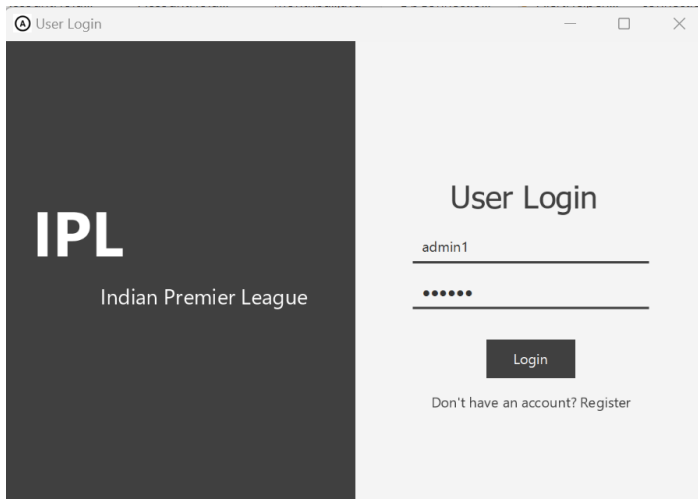
2.Admin Dash board: Admin dash board allows the administrator to perform CRUD operations (create, read, update, delete) on the player, team, and match the data.

3.Player data management: This application should allow the admin to manage player data, including adding new player details, and deleting players. The application should also allow to view player statistics and performance reports.

SNAPSHOTS OF THE OUTPUT:

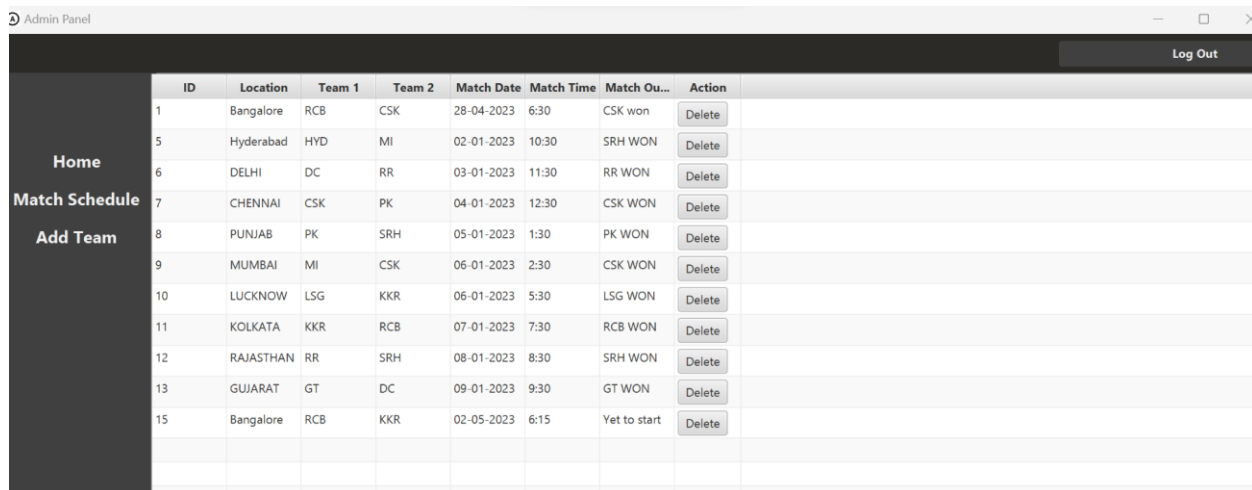
LOGIN PAGE:

- 1) Login page with admin credentials:



The image shows a web browser window titled "User Login". On the left, there is a dark grey sidebar with the text "IPL" in large white letters and "Indian Premier League" below it. The main content area is light grey and contains the "User Login" heading. Below the heading, there are two input fields: the first contains "admin1" and the second contains six dots representing a password. A dark grey "Login" button is positioned below the password field. At the bottom, there is a link that says "Don't have an account? Register".

This is the home page for admin



The image shows a web browser window titled "Admin Panel". On the right side of the header, there is a "Log Out" button. On the left side, there is a dark grey sidebar with three menu items: "Home", "Match Schedule", and "Add Team". The main content area displays a table with match data.

ID	Location	Team 1	Team 2	Match Date	Match Time	Match Ou...	Action
1	Bangalore	RCB	CSK	28-04-2023	6:30	CSK won	Delete
5	Hyderabad	HYD	MI	02-01-2023	10:30	SRH WON	Delete
6	DELHI	DC	RR	03-01-2023	11:30	RR WON	Delete
7	CHENNAI	CSK	PK	04-01-2023	12:30	CSK WON	Delete
8	PUNJAB	PK	SRH	05-01-2023	1:30	PK WON	Delete
9	MUMBAI	MI	CSK	06-01-2023	2:30	CSK WON	Delete
10	LUCKNOW	LSG	KKR	06-01-2023	5:30	LSG WON	Delete
11	KOLKATA	KKR	RCB	07-01-2023	7:30	RCB WON	Delete
12	RAJASTHAN	RR	SRH	08-01-2023	8:30	SRH WON	Delete
13	GUJARAT	GT	DC	09-01-2023	9:30	GT WON	Delete
15	Bangalore	RCB	KKR	02-05-2023	6:15	Yet to start	Delete

Match Schedule Page:

Admin Panel

Log Out

Home

Match Schedule

Add Team

Match Schedule

Location

Team

Team

Match Date

Match Time

Match Outcome

Submit

Adding a match schedule detail of the first record:

Home

Match Schedule

Add Team

Match Schedule

Banglore

RCB

CSK

28-04-2023

6:30

CSK won

Submit

After adding the details, this will appear in your homepage

Admin Panel

Log Out

Home

Match Schedule

Add Team

ID	Location	Team 1	Team 2	Match Date	Match Time	Match Ou...	Action
1	Bangalore	RCB	CSK	28-04-2023	6:30	CSK won	Delete
5	Hyderabad	HYD	MI	02-01-2023	10:30	SRH WON	Delete
6	DELHI	DC	RR	03-01-2023	11:30	RR WON	Delete
7	CHENNAI	CSK	PK	04-01-2023	12:30	CSK WON	Delete
8	PUNJAB	PK	SRH	05-01-2023	1:30	PK WON	Delete
9	MUMBAI	MI	CSK	06-01-2023	2:30	CSK WON	Delete
10	LUCKNOW	LSG	KKR	06-01-2023	5:30	LSG WON	Delete
11	KOLKATA	KKR	RCB	07-01-2023	7:30	RCB WON	Delete
12	RAJASTHAN	RR	SRH	08-01-2023	8:30	SRH WON	Delete
13	GUJARAT	GT	DC	09-01-2023	9:30	GT WON	Delete
15	Bangalore	RCB	KKR	02-05-2023	6:15	Yet to start	Delete

Admin has added another match schedule which is

The screenshot shows the 'Match Schedule' form in the Admin Panel. The form has a sidebar with 'Home', 'Match Schedule', and 'Add Team' options. The main area contains a form with the following fields: 'CHENNAI' (dropdown), 'CSK' (dropdown), 'RCB' (dropdown), '10-03-2023' (text), '04:30' (text), and 'CSK WON' (text). A 'Submit' button is at the bottom.

It will appear in your home page

The screenshot shows the 'Match Schedule' table in the Admin Panel. The table has columns: ID, Location, Team 1, Team 2, Match Date, Match Time, Match Ou..., and Action. The table contains 17 records. The last record (ID 17) is highlighted with a red underline.

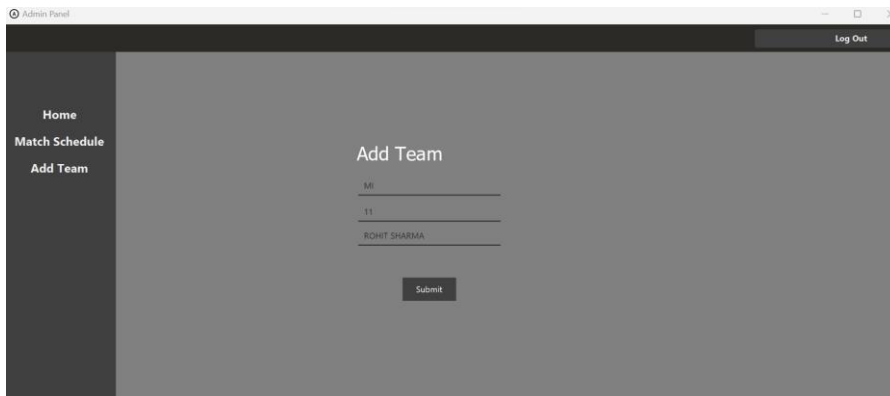
ID	Location	Team 1	Team 2	Match Date	Match Time	Match Ou...	Action
1	Bangalore	RCB	CSK	28-04-2023	6:30	CSK won	Delete
5	Hyderabad	HYD	MI	02-01-2023	10:30	SRH WON	Delete
6	DELHI	DC	RR	03-01-2023	11:30	RR WON	Delete
7	CHENNAI	CSK	PK	04-01-2023	12:30	CSK WON	Delete
8	PUNJAB	PK	SRH	05-01-2023	1:30	PK WON	Delete
9	MUMBAI	MI	CSK	06-01-2023	2:30	CSK WON	Delete
10	LUCKNOW	LSG	KKR	06-01-2023	5:30	LSG WON	Delete
11	KOLKATA	KKR	RCB	07-01-2023	7:30	RCB WON	Delete
12	RAJASTHAN	RR	SRH	08-01-2023	8:30	SRH WON	Delete
13	GUJARAT	GT	DC	09-01-2023	9:30	GT WON	Delete
15	Bangalore	RCB	KKR	02-05-2023	6:15	Yet to start	Delete
17	CHENNAI	CSK	RCB	10-03-2023	04:30	CSK WON	Delete

Now we will perform the deletion operation of the last record which is CSK VS RCB

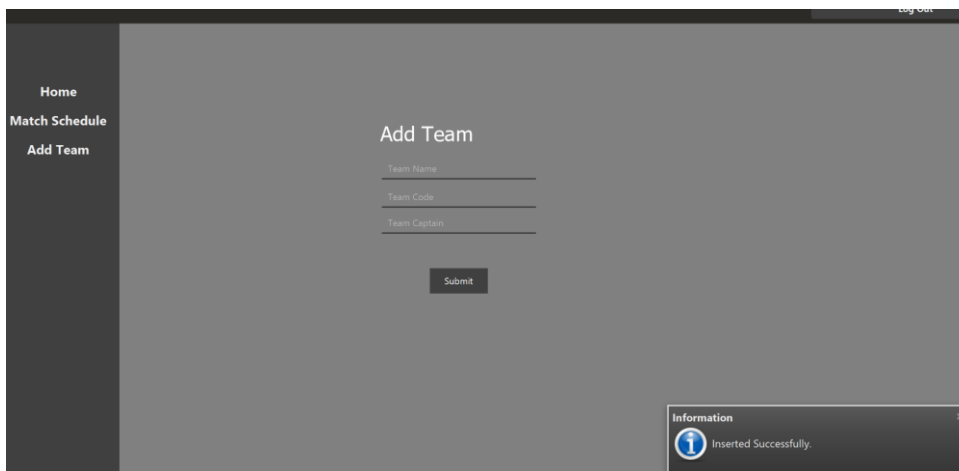
The screenshot shows the 'Match Schedule' table in the Admin Panel after the deletion of the last record (ID 17). The table has columns: ID, Location, Team 1, Team 2, Match Date, Match Time, Match Ou..., and Action. The table contains 15 records. The last record (ID 15) is highlighted with a red underline.

ID	Location	Team 1	Team 2	Match Date	Match Time	Match Ou...	Action
1	Bangalore	RCB	CSK	28-04-2023	6:30	CSK won	Delete
5	Hyderabad	HYD	MI	02-01-2023	10:30	SRH WON	Delete
6	DELHI	DC	RR	03-01-2023	11:30	RR WON	Delete
7	CHENNAI	CSK	PK	04-01-2023	12:30	CSK WON	Delete
8	PUNJAB	PK	SRH	05-01-2023	1:30	PK WON	Delete
9	MUMBAI	MI	CSK	06-01-2023	2:30	CSK WON	Delete
10	LUCKNOW	LSG	KKR	06-01-2023	5:30	LSG WON	Delete
11	KOLKATA	KKR	RCB	07-01-2023	7:30	RCB WON	Delete
12	RAJASTHAN	RR	SRH	08-01-2023	8:30	SRH WON	Delete
13	GUJARAT	GT	DC	09-01-2023	9:30	GT WON	Delete
15	Bangalore	RCB	KKR	02-05-2023	6:15	Yet to start	Delete

Now we will see the adding i.e., Add team by admin



Admin has added a team and then you will get a popup as :



Now the details of a team we can see it in the data base:

customer

doctors

fara_amreen_login

fara_amreen_matches

fara_amreen_team

fara_amreen_users

jpapa2_users

jpapa_accounts

jpapa_bank

jpapa_users

myapp_inventory

myapp_products

myapp_users

new table s poth

team_id

team_name

team_code

team_captain

1

Lucknow Super Giants

LSG

KL Rahul

2

Royal Challeger Bangalore

RCB

Virat Kohli

3

Chennai Super Kings

CSK

MS Dhoni

4

Punjab Kings

PK

Shikhar Dhawan

5

Delhi Capitals Squad

DC

David Warner

6

Gujarat Titans Squad

GT

Hardik Pandya

7

Kolkata Knight Riders

KKR

Nitish Rana

8

test

test

test

9

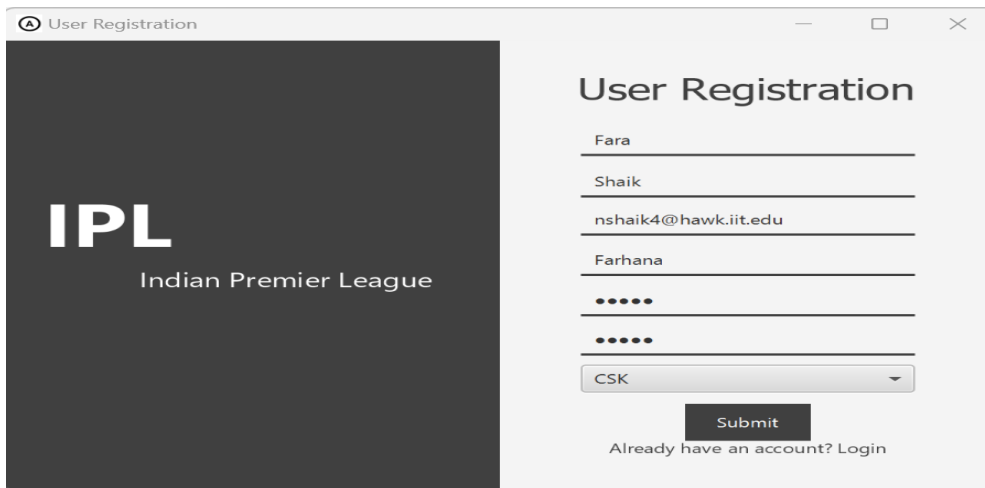
MI

11

ROHIT SHARMA

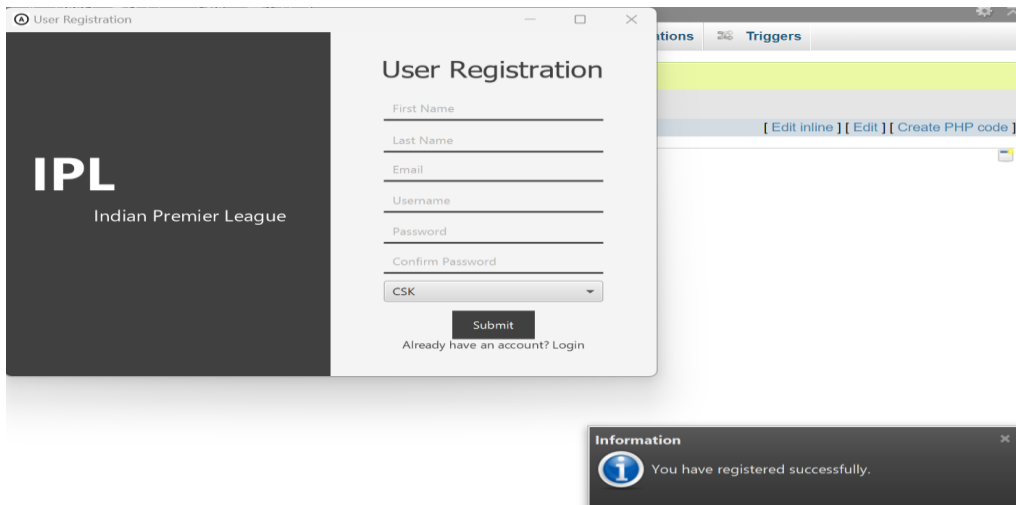
Some crud operations have been done by the admin.

Now we will the User registration part and user access.



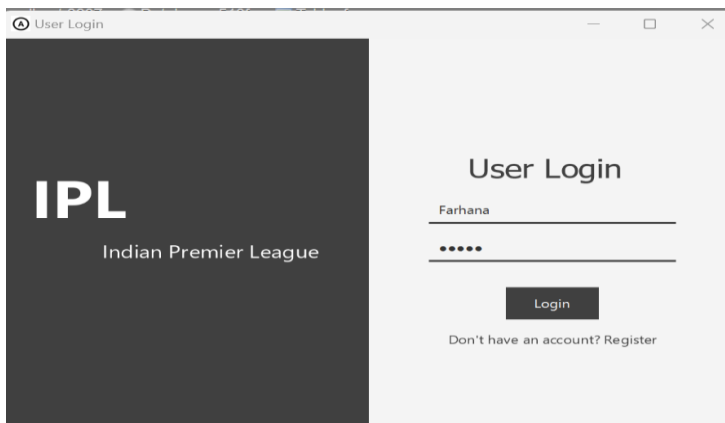
A screenshot of a web browser window titled "User Registration". The left sidebar features the "IPL Indian Premier League" logo. The main content area is titled "User Registration" and contains a form with the following fields: "First Name" (filled with "Fara"), "Last Name" (filled with "Shaik"), "Email" (filled with "nshaik4@hawk.iit.edu"), "Username" (filled with "Farhana"), and "Password" (masked with dots). Below the password field is a dropdown menu for "Team" with "CSK" selected. A "Submit" button is at the bottom, followed by a link "Already have an account? Login".

User has registered for the team CSK, after registering you will get the popup as



A screenshot showing the "User Registration" form with a success message popup. The form is identical to the previous one, but a dark gray "Information" popup is visible in the bottom right corner, displaying a blue information icon and the text "You have registered successfully.". In the background, a portion of a table with columns "Conditions" and "Triggers" is visible.

Now we will login as user:



A screenshot of a web browser window titled "User Login". The left sidebar features the "IPL Indian Premier League" logo. The main content area is titled "User Login" and contains a form with the following fields: "Username" (filled with "Farhana") and "Password" (masked with dots). A "Login" button is at the bottom, followed by a link "Don't have an account? Register".

The home page for the user is as follows:

[illegible]

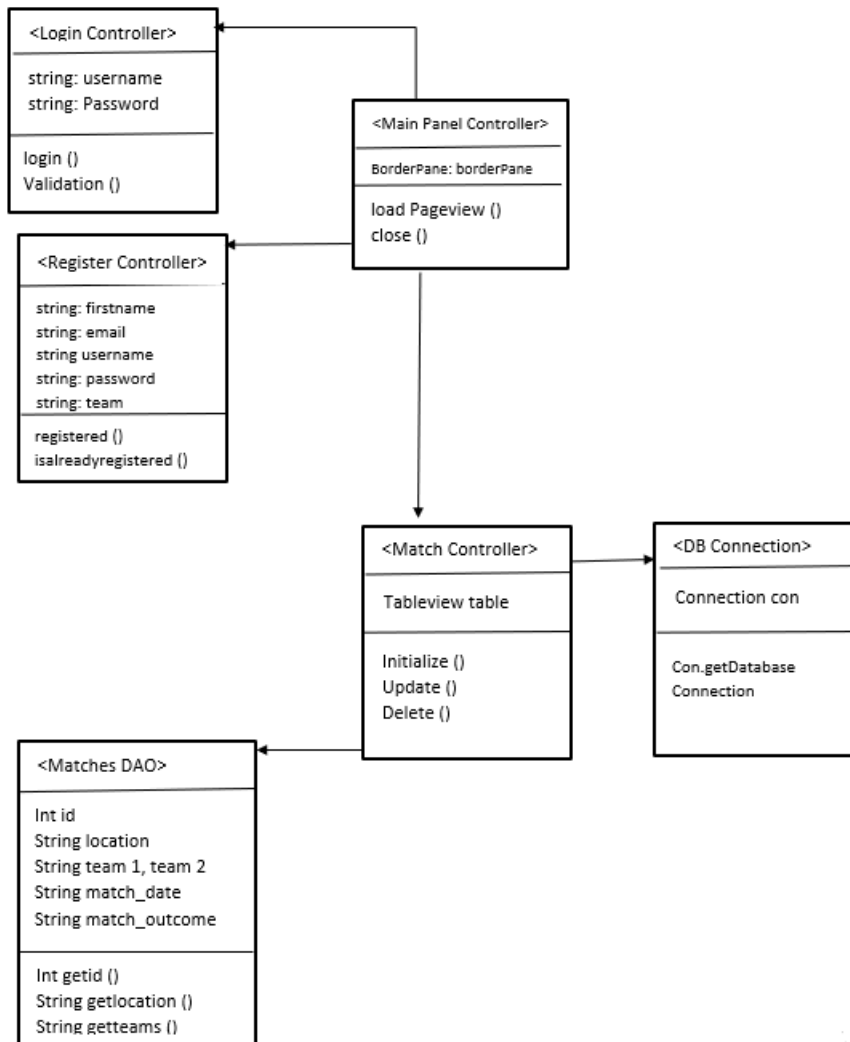
Because the user has registered as CSK, so user can only see the Matches related to CSK only.

And coming to match schedule page and Add team page you will not access for that it has access only for the admin.

A screenshot of a web application interface. At the top, there is a dark header bar with the text 'Admin Panel' on the left and a 'Log Out' button on the right. Below the header, there is a dark sidebar on the left containing three menu items: 'Home', 'Match Schedule', and 'Add Team'. The main content area is a light gray rectangle with the text 'You do not have access' centered in a large, white, sans-serif font.

EXTRA CREDIT:

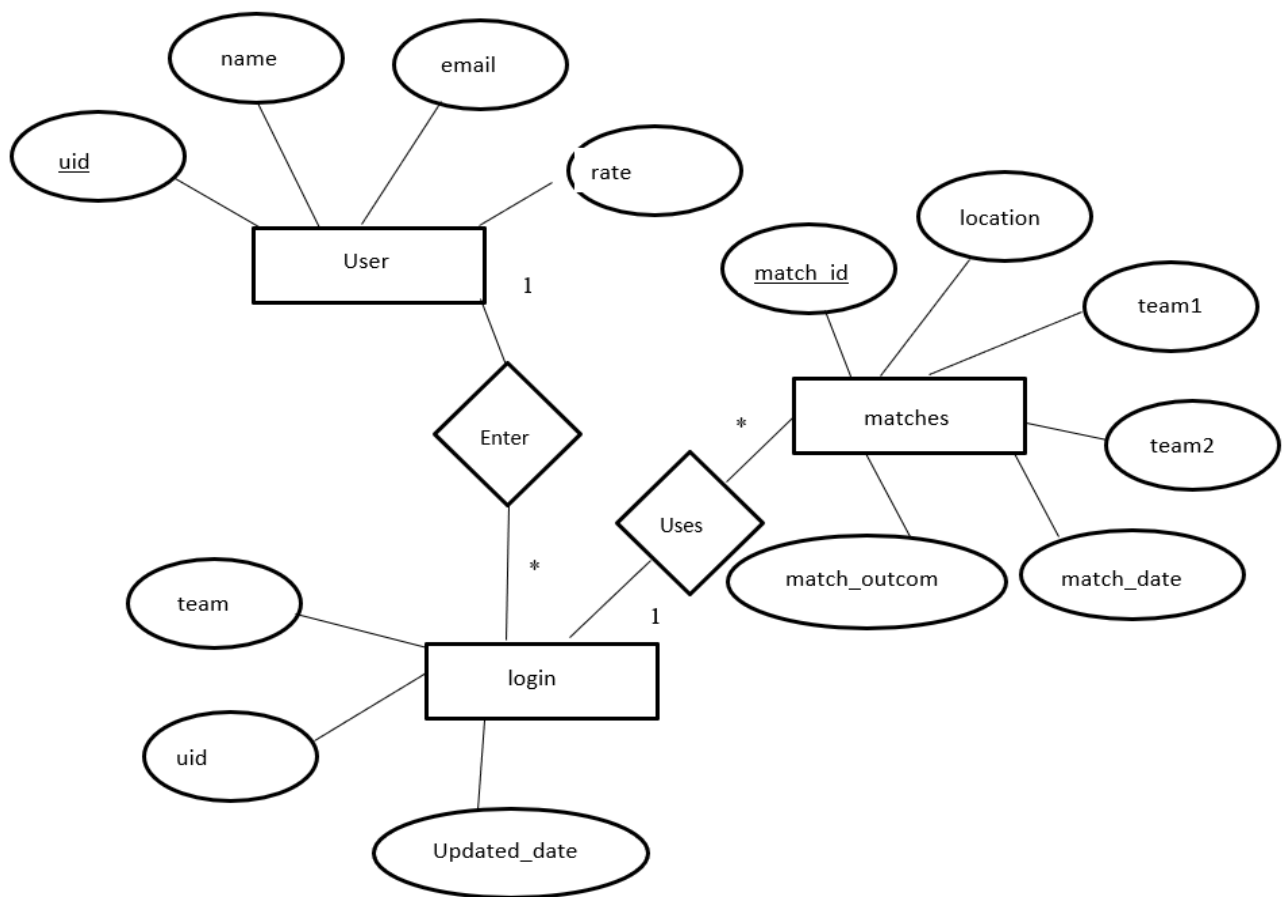
1)class diagram



2)Use Case Diagram:



3)ER Diagram:



EXTRA CREDIT:

PASSWORD PROTECTION (PASSWORD HASHING)

PASSWORD HAS ENCRYPTED:

+ Options

				uid	username	password	role	first_name	last_name	email
<input type="checkbox"/>	Edit	Copy	Delete	9	admin1	ÿÍq□„ò□N²	admin	admin	admin	admin
<input type="checkbox"/>	Edit	Copy	Delete	10	nshaik4	ÿ«□ā¬... aN?	LSG	Fara	Shaik	nshaik4@hawk.iit.edu

EXTRA CREDIT:

GITHUB REPOSITORY:

EXTRA CREDIT:

Include a working .jar file of your main application file (+10)

We have tried the jar file with java jdk 20 version not the jdk 8 version

So we have run the command prompt as follows:

cd C:\Users\siddi\OneDrive\Desktop

"C:\Program Files\java\jdk1.8.0_241\bin\java" -jar ipl.jar

```
Command Prompt
Microsoft Windows [Version 10.0.22621.1555]
(c) Microsoft Corporation. All rights reserved.

C:\Users\siddi>\OneDrive\Desktop
The system cannot find the path specified.

C:\Users\siddi>cd C:\Users\siddi\OneDrive\Desktop
```

```
Command Prompt
Microsoft Windows [Version 10.0.22621.1555]
(c) Microsoft Corporation. All rights reserved.

C:\Users\siddi>\OneDrive\Desktop
The system cannot find the path specified.

C:\Users\siddi>cd C:\Users\siddi\OneDrive\Desktop

C:\Users\siddi\OneDrive\Desktop>"C:\\Program Files\\java\\jdk1.8.0_241\\bin\\java" -jar ipl.jar
```

We have included the jar file in the code and we have run the command prompt as shown above
We got the login page .

