Stadia

Domain Description

Stadia aims to create a stadium seat booking web application that facilitates users to book seats for upcoming cricket matches. There will be different types of seats subject to availability and price. Users can view the details of the upcoming matches on the dashboard and can choose their required seats allowing them to pay using Real-Time Payment Gateway (like Paytm, GPay, Bank Account). Users can also choose to update/cancel their previous bookings subject to certain conditions. Users can also avail food services, merchandise through this website after booking their seats.

Admin can add/edit details of upcoming matches, modify or block the availability of seats and update the prices of merchandise and seats.

Constraints

Data Level Constraints :

- Every user will have a unique user ID, Email.
- Every seat in a particular match can be booked by at most one user.
- The total number of seats is fixed in the stadium.
- A user can buy any number of merchandise. Single merchandise can be purchased by only one user. There will be a fixed number of particular merchandise.
- Only one match is to be played at a particular time in a particular stadium. Each match is played between two teams only.

GUI Level Constraints :

- A user must be logged in, to see the dashboard, otherwise, he will be redirected to the home page.
- Admin login redirects to the admin dashboard, user login redirects to the user dashboard upon successful authentication.

GUI Layout/Navigation

- Home Page
- Login pages for user and admin
- Registration page for user
- Dashboards for user and admin
- User Profile Page
- Seat Booking Page with a seat layout
- Merchandise and food services selection page
- Payment and bill breakout

Functionality Description

User

- Users can register to create an account. They can log in to their account and access their dashboard.
- Users can book seats for the upcoming matches by selecting the seat type, and the number of seats.
- Users can add food items and merchandise to their orders before proceeding to payment.
- Users can add money to their accounts.
- Users can cancel/update their current bookings.
- Users can edit their profile details.

Admin

- Admin can log in to access the admin dashboard.
- Admin can add merchandise and food items.
- Admin can modify the prices of merchandise, seats, and food items.
- Admin can add new teams into the database.
- Admin can create a new stadium and add seats in the stadium.
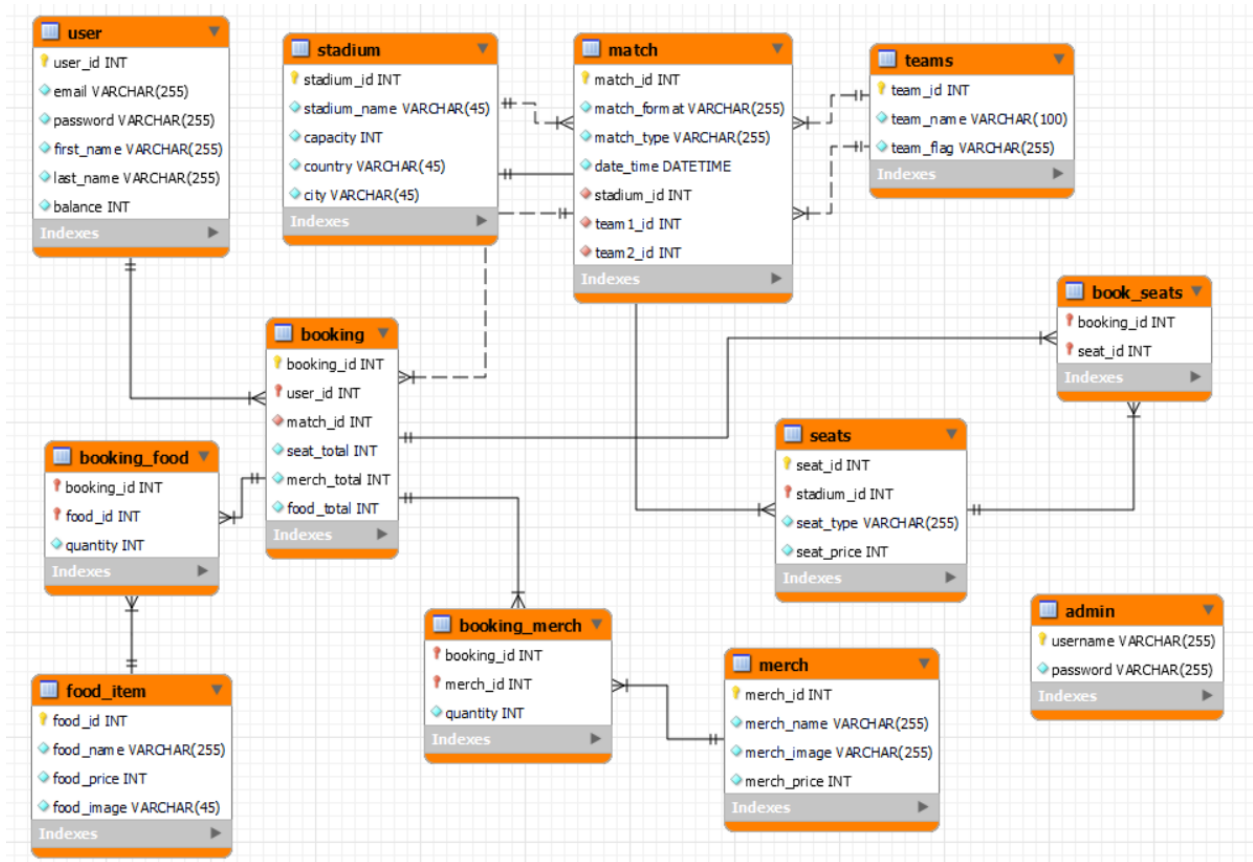- Admin can organize matches amongst teams.

Technology Used

- Frontend: ReactJS
- Backend: NodeJS
- RDBMS: MySQL

ER DIAGRAM
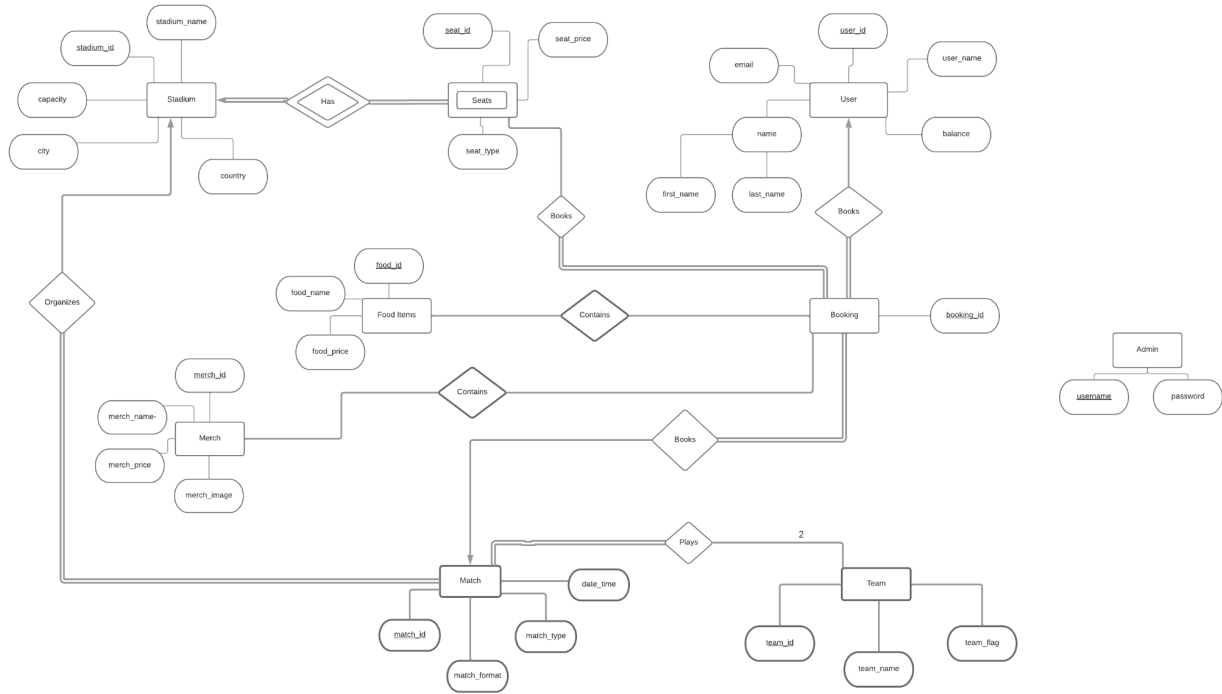
Relational Schema

Functional Dependencies -

Stadium				
stadium_id	stadium_name	capacity	city	country
stadium_id → stadium_name, capacity, city, country				

User					
user_id	password	email	first_name	last_name	balance
user_id → password, email, first_name, last_name, balance					
email → user_id, password, first_name, last_name, balance					

Teams		
team_id	team_name	team_flag
team_id → team_name, team_flag		

Seats			
seat_id	stadium_id	price	seat_type
(seat_id, stadium_id) → seat_type, price			
stadium_id references to stadium_id of stadium			

Merch			
merch_id	merch_name	merch_price	merch_img
merch_id → merch_name, merch_price,merch_img			

Food Item		
food_id	food_name	food_price
food_id → food_name, food_price		

Admin	
username	password
username → password	

Match						
match_id	match_format	match_type	date_time	stadium_id	team1_id	team2_id
match_id→match_format, match_type, date_time, stadium_id, team1_id, team2_id						
stadium_id references to stadium_id of stadium						
team1_id and team2_id reference to team_id of teams						

Booking		
booking_id	user_id	match_id
booking_id→user_id, match_id		
user_id references to user_id of user		
match_id references to match_id of match		

booking_food		
booking_id	food_id	quantity
(booking_id, food_id) → quantity		
food_id references to food_id of food item Booking_id references to booking_id of Booking		

booking_merch		
booking_id	merch_id	quantity
(booking_id, merch_id) → quantity		
merch_id references to merch_id of merch Booking_id references to booking_id of Booking		

BookSeats		
booking_id	seat_id	
seat_id references to seat_id of seats Booking_id references to booking_id of Booking		

The whole database is in BCNF Form.

Retrieval and Insertion of data into database from Front-End
   1. **Registration and Login of User**

Register

Email Address

user10@gmail.com

Password

•••••••••

First Name

User

Last Name

10

Register

Already Have an Account ? Login Here

Login

Email Address

yash@gmail.com

Password

•••••••••

Login

Don't Have an Account ? Register Here

Database Table -

user_id	email	password	first_name	last_name	balance
1	yash@gmail.com	$2b$10$l61ta3V1Cc6ZFBXs8s94YOcX/YPauhAz...	Yash	Ratnani	0
2	ashwin@gmail.com	$2b$10$TLznL5Kpxo8RioLFGAzxvO2SsmNc7AjZ...	Ashwin	Pugalia	0
3	sriram@gmail.com	$2b$10$0.wooZNqdzSjdjhubjvms.Fy3j48Jaqeq...	Sriram	B	0
4	shubh@gmail.com	$2b$10$RZqhN90uKo6VlpD3viymPemalGuxKdH...	Shubh	Badjate	0
5	user5@gmail.com	$2b$10$dhEeLgMKm1ek./aPvB03WeBo6KPULinj...	User	5	0
6	user6@gmail.com	$2b$10$m9d0N6Jjy352mnHHNQtj2.kC7RDvgnU...	User	6	0
7	user7@gmail.com	$2b$10$a7vK3vTcKDn7m8Q/IO5NZevV1r7Wuqj...	User	7	0
8	user8@gmail.com	$2b$10$pDpqIVU6sI8QC93X/6.ie.o.q/FOfmEflV...	User	8	0
9	user9@gmail.com	$2b$10$ZEPbMgi7CY1YcTP6xW/rleSfL2VbBaVrx...	User	9	0
10	user10@gmail.com	$2b$10$ZFiLGFguz0T/WB5lSgolNe0R3OZGAtNR...	User	10	0
NULL	NULL	NULL	NULL	NULL	NULL

SELECT * FROM new_schema.user;

Limit to 1000 rows

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content:

2. Retrieving Upcoming Matches

Matches Table -

match_id	match_format	match_type	date_time	stadium_id	team1_id	team2_id
1	ODI	League Match	2022-05-01 15:51:00	1	1	4
2	Test	League Match	2022-04-30 16:04:00	1	3	5
3	Test	League Match	2022-04-30 16:06:00	1	7	2
4	Test	League Match	2022-04-30 16:06:00	1	6	8
5	Test	League Match	2022-04-30 16:06:00	1	9	2
NULL	NULL	NULL	NULL	NULL	NULL	NULL

Stadium Table -

stadium_id	stadium_name	capacity	country	city
1	Wankhede	1500	India	Mumbai
NULL	NULL	NULL	NULL	NULL

Teams Table -

team_id	team_name	team_flag
1	India	IN
2	Australia	AU
3	South Africa	ZA
4	England	GB
5	New Zealand	NZ
6	Bangladesh	BD
7	Sri Lanka	LK
8	Afghanistan	AF
9	Pakistan	PK

3. Retrieving Available Seats for a match (Booking Seats)
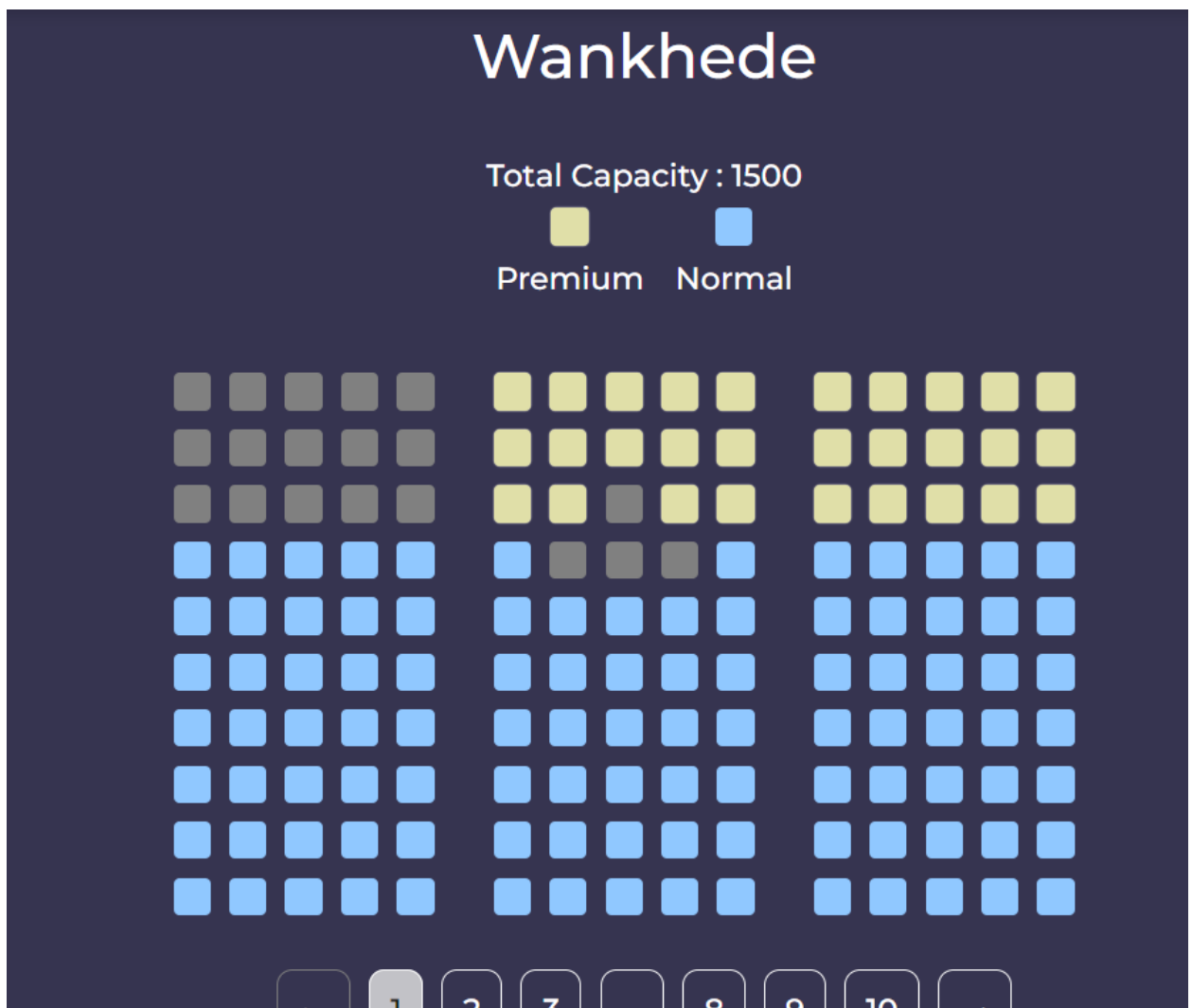
(Grey cells - booked Seats , Not Available)

Seat Table -

seat_id	stadium_id	seat_type	seat_price
1	1	Premium	5000
2	1	Premium	5000
3	1	Premium	5000
4	1	Premium	5000
5	1	Premium	5000
6	1	Premium	5000
7	1	Premium	5000
8	1	Premium	5000
9	1	Premium	5000
10	1	Premium	5000
11	1	Premium	5000

Booked Seats - (book_seats Table)

booking_id	seat_id
2	1
2	2
2	3
2	4
2	5
3	16
3	17
3	18
3	19
3	20
4	31

Available Seats are those which are not booked.

4. **Retrieving Available Food and Merchandise Items after selecting seats for booking**

Extras

FOOD   MERCH   CART

Samosa
Rs. 60

Quantity *
0

Soft Drinks
Rs. 50

Quantity *
0

Cheese Popcorn
Rs. 50

Quantity *
0

Salted Popcorn
Rs. 45

Quantity *
0

Caramel Popcorn
Rs. 50

Quantity *
0

ADD TO CART

Nachos
Rs. 80

Quantity *
0

ADD TO CART

Coffee
Rs. 45

Quantity *
0

ADD TO CART

Tea
Rs. 45

Quantity *
0

ADD TO CART

India
Rs. 1999

Quantity *
0

Australia
Rs. 1999

Quantity *
0

Sri Lanka
Rs. 1899

Quantity *
0

Pakistan
Rs. 1999

Quantity *
0
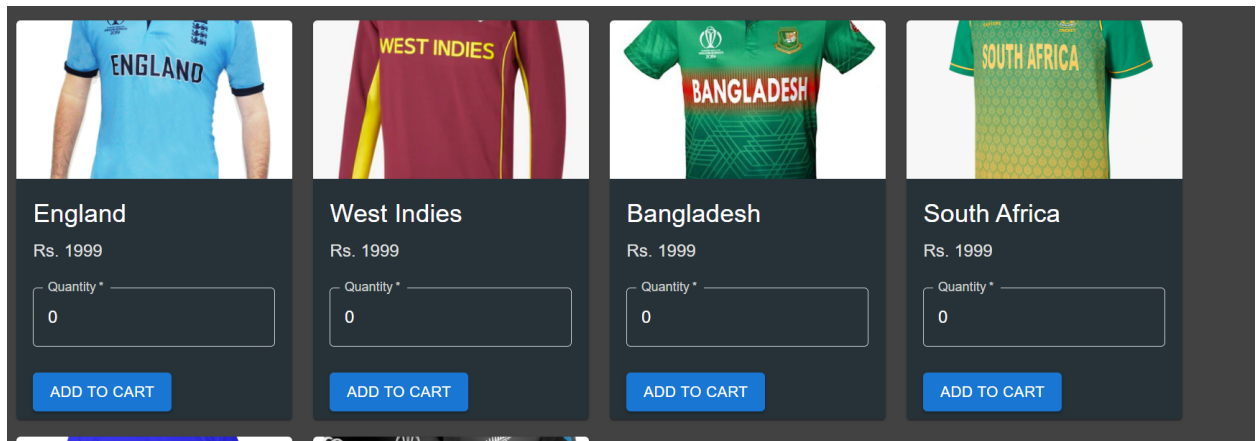
Food_item Table -

food_id	food_name	food_price	food_image
1	Samosa	60	https://static.toiimg.com/thumb/61050397.cms...
2	Soft Drinks	50	https://www.foodnavigator-asia.com/var/wrbm...
3	Cheese Popcorn	50	https://www.foodlovinfamily.com/wp-content/u...
4	Salted Popcorn	45	https://wholefully.com/wp-content/uploads/201...
7	Caramel Popcorn	50	https://www.countryhillcottage.com/wp-conten...
8	Nachos	80	https://www.kannammacooks.com/wp-content/...
9	Coffee	45	https://media-cldnry.s-nbcnews.com/image/upl...
10	Tea	45	https://static.toiimg.com/photo/83173328.cms
11	Chips	20	https://upload.wikimedia.org/wikipedia/common...
12	Vada Pav	35	https://d2np4vr8r37sds.cloudfront.net/img/arti...

Merchandise Table -

merch_id	merch_name	merch_image	merch_price
1	India	https://rukminim1.flixcart.com/image/332/398/k...	1999
2	Australia	https://m.media-amazon.com/images/I/816V6Z...	1999
3	Sri Lanka	https://i.pinimg.com/736x/59/b2/a4/59b2a4b3b...	1899
4	Pakistan	https://i.ebayimg.com/images/g/NpIAAOSwiKVc...	1999
5	England	https://m.media-amazon.com/images/I/71k3TB...	1999
6	West Indies	https://cdn.shopify.com/s/files/1/0317/0359/71...	1999
7	Bangladesh	https://bestcricketstore.com/wp-content/uploa...	1999
8	South Africa	https://cdn.shopify.com/s/files/1/0317/0359/71...	1999
9	Afghanistan	http://cdn.shopify.com/s/files/1/0565/8034/19...	1599
10	New Zealand	https://m.media-amazon.com/images/I/51NuVl5...	1999

5. Fetching Profile details of User

user_id	email	password	first_name	last_name	balance
1	yash@gmail.com	$2b$10$l61ta3V1Cc6ZFBXs8s94YOcX/YPauhAz...	Yash	Ratnani	898549
2	ashwin@gmail.com	$2b$10$TLznL5Kpxo8RioLFGAzxvO2SsmNc7AjZ...	Ashwin	Pugalia	0
3	sriram@gmail.com	$2b$10$0.wooZNqdzSjdjhubjvms.Fy3j48Jaqeq...	Sriram	B	0
4	shubh@gmail.com	$2b$10$RZqhN90uKo6VlpD3viymPemalGuxKdH...	Shubh	Badjate	0
5	user5@gmail.com	$2b$10$dhEeLgMKm1ek./aPvB03WeBo6KPULinj...	User	5	0
6	user6@gmail.com	$2b$10$m9d0N6Jjy352mnHHNQtj2.kC7RDvgnU...	User	6	0
7	user7@gmail.com	$2b$10$a7vK3vTcKDn7m8Q/IO5NZevV1r7Wuqj...	User	7	0
8	user8@gmail.com	$2b$10$pDpqIVU6sI8QC93X/6.ie.o.q/FOfmEflV...	User	8	0
9	user9@gmail.com	$2b$10$ZEPbMgi7CY1YcTP6xW/rleSfL2VbBaVrx...	User	9	0
10	user10@gmail.com	$2b$10$ZFiLGFguz0T/WB5lSgolNe0R3OZGAtNR...	User	10	0
NULL	NULL	NULL	NULL	NULL	NULL

6. Get User Bookings

Booking Table -

booking_id	user_id	match_id	seat_total	merch_total	food_total
1	1	1	8000	1999	280
2	1	1	25000	7796	160
3	1	1	25000	3998	110
4	1	1	25000	3998	110
NULL	NULL	NULL	NULL	NULL	NULL

Booking_food and booking_merch Table -

booking_id	food_id	quantity
1	1	3
1	2	2
2	1	1
2	2	2
3	1	1
3	2	1
4	1	1
4	2	1

booking_id	merch_id	quantity
1	1	1
2	1	2
2	3	2
3	1	1
3	2	1
4	1	1
4	2	1

Book_seats Table -

booking_id	seat_id
2	1
2	2
2	3
2	4
2	5
3	16
3	17
3	18
3	19
3	20

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