University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 4

Date: 2023/04/03

Group Number: 46

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By typing our names and student numbers in the above table, we certify that the work in the attached assignment was performed solely by those whose names and student IDs are included above. (In the case of Project Milestone 0, the main purpose of this page is for you to let us know your e-mail address, and then let us assign you to a TA for your project supervisor.)

In addition, we indicate that we are fully aware of the rules and consequences of plagiarism, as set forth by the Department of Computer Science and the University of British Columbia

Milestone 4

Project Description: Our project Totally Not Ticketmaster is a tool that can be used to store and view data related to tickets, users, and purchases, as well as perform specific queries to gather information.

In order to develop our project, we used the following tools:

- Node.js - Hosts the server
- React.js - Front-end user interface
- Express - Manages the node server routes, request/response/error handling
- Postgres - Our database management system, this is where our data is stored

Queries are executed using postgres' connection pool query function, which is done after the proper API endpoint is called by the user interface

Schema Differences: Due to time limitations, we ended up going with a much simplified version of our original schema. Our plan of Users, Artists, Tickets, Venues, Coupons, etc. was reduced to just Tickets and Users, with a Purchases relation between them. Further tables would not be necessary to satisfy the project requirements.

Schema (Underline = PK, Bold = FK):

- tickets(ticketid: SERIAL, price: INTEGER, type: VARCHAR(30), artist: VARCHAR(50), date: DATE)
- users(userid: SERIAL, firstname: VARCHAR(30), lastname: VARCHAR(30), email: VARCHAR(50), birthday: DATE) (email must be unique)
- purchases(purchaseid: SERIAL, **userid**: INTEGER, **ticketid**: INTEGER)

```
ticketmanager=# SELECT * FROM purchases;
 purchaseid | userid | ticketid
------------+--------+----------
          1 |      1 |        1
          2 |      1 |        4
          3 |      1 |       11
          4 |      2 |        5
          5 |      3 |        6
          6 |      4 |        7
          7 |      5 |        8
          8 |      6 |        9
          9 |      7 |       10
         10 |      2 |       12
         11 |      1 |       23
         12 |      2 |       20
         13 |      2 |       24
(13 rows)
```

```
ticketmanager=# SELECT * FROM tickets;
 ticketid | price |   type   | artist  |    date
----------+-------+----------+---------+------------
        1 |     5 | Seated   | Drake   | 2000-01-01
        2 |     5 | Seated   | Drake   | 2000-01-01
        3 |    10 | Standing | Drake   | 2000-01-01
        4 |    20 | Standing | Adele   | 2020-03-03
        5 |    20 | Standing | Adele   | 2020-03-03
        6 |    20 | Standing | Adele   | 2020-03-03
        7 |    20 | Standing | Adele   | 2020-03-03
        8 |    20 | Standing | Adele   | 2020-03-03
        9 |    20 | Standing | Adele   | 2020-03-03
       10 |    20 | Standing | Adele   | 2020-03-03
       11 |    15 | Seated   | Rihanna | 2023-05-01
       12 |    20 | Seated   | Rihanna | 2023-05-01
       13 |    25 | Seated   | Rihanna | 2023-05-01
       14 |    30 | Seated   | Rihanna | 2023-05-01
       15 |    33 | Seated   | Rihanna | 2023-05-01
       16 |     3 | Seated   | Rihanna | 2023-05-01
       17 |    50 | Seated   | Adele   | 2023-05-01
       18 |    30 | Premium  | Adele   | 2023-05-01
       19 |    35 | Premium  | Adele   | 2023-05-01
       20 |    20 | VIP      | Drake   | 2002-02-01
       21 |    25 | VIP      | Drake   | 2002-02-01
       22 |    40 | VIP      | Drake   | 2002-02-01
       23 |    50 | VIP      | Beyonce | 2000-02-22
       24 |    50 | VIP      | Beyonce | 2000-02-22
       25 |    60 | VIP      | Beyonce | 2000-02-22
(25 rows)
```

```
ticketmanager=# SELECT * FROM users;
 userid | firstname | lastname |      email       |  birthday
--------+-----------+----------+------------------+------------
      1 | Joe       | Biden    | j@biden.com      | 0100-01-01
      2 | Joe       | Max      | j@max.com        | 2000-01-01
      3 | Joe       | Marr     | j@marr.com       | 2000-01-01
      4 | Joe       | Bryant   | j@br.com         | 2000-01-01
      5 | Joe       | Erickson | j@e.com          | 2002-01-01
      6 | Joe       | Patrick  | j@p.com          | 1990-01-01
      7 | Tiffany   | Patrick  | t@p.com          | 1991-01-01
      8 | Emily     | Summer   | emily@summer.com | 1980-02-01
      9 | Fabian    | Bentley  | fabian@b.com     | 1950-02-01
     10 | John      | Cena     | john@cena.com    | 1950-07-05
     11 | Alex      | Fray     | a@fray.com       | 1967-01-02
(11 rows)
```

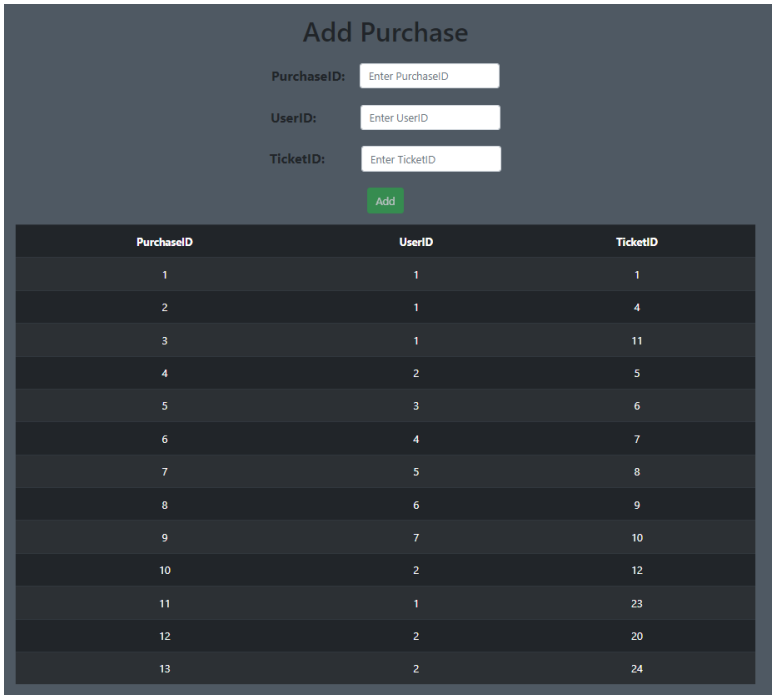
SQL Queries:

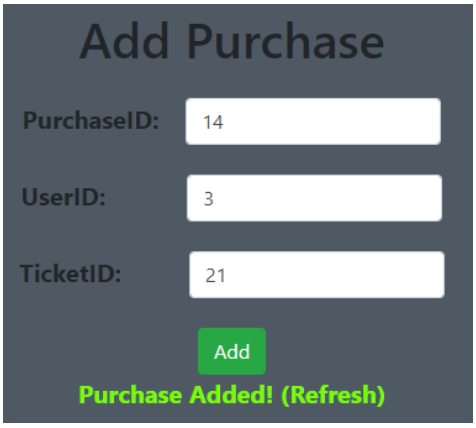
Query	Description	Query	Location (server/index.js)
INSERT	Add new purchases	"INSERT INTO purchases (purchaseid, userid, ticketid) VALUES($1, $2, $3) RETURNING *"	Line 16
DELETE	Delete tickets by specific values	`DELETE FROM tickets WHERE ${column} = $1`, [val]	Line 32
UPDATE	Edit multiple values of a ticket	"UPDATE tickets SET price = $1, type = $2, artist = $3, date = $4 WHERE ticketid = $5", [price, type, artist, date, id]	Line 48
SELECTION	Return users who share a given first name	"SELECT * FROM users WHERE firstname = $1", [firstname]	Line 60
PROJECTION	Dynamically view columns in a table	"SELECT " + input + " FROM " + table	Line 73
JOIN	Return all users who own a ticket for a given artist	"SELECT users.userid, tickets.ticketid, users.firstname, users.lastname FROM tickets INNER JOIN purchases ON tickets.ticketid = purchases.ticketid INNER JOIN users ON purchases.userid =	Line 85

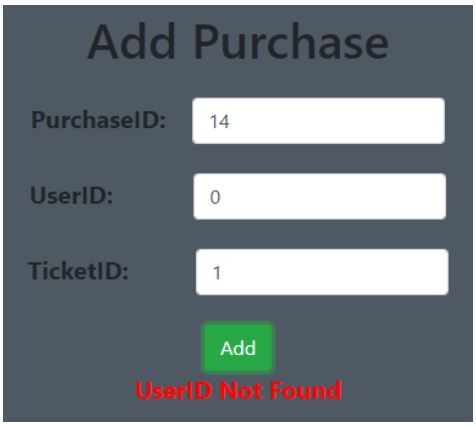
		users.userid WHERE artist = $1", [artist]	
GROUP BY	Return number of tickets sold for each artist	"SELECT tickets.artist, COUNT(*) FROM tickets INNER JOIN purchases ON tickets.ticketid = purchases.ticketid GROUP BY tickets.artist"	Line 95
HAVING	Return average price of tickets of each type with average of at least 20	"SELECT type, AVG(price) FROM tickets GROUP BY type HAVING 20 <= AVG(price)"	Line 106
NESTED	Return average number of tickets owned per user	"With userTickets AS (SELECT purchases.userid, COUNT(*) AS ticketsPurchased FROM purchases GROUP BY purchases.userid) SELECT AVG(ticketsPurchased) FROM userTickets"	Line 117
DIVISION	Return email of users who own a ticket for every artist	"SELECT U.email FROM users U WHERE NOT EXISTS ((SELECT DISTINCT T.artist FROM tickets T) EXCEPT (SELECT DISTINCT T1.artist FROM purchases P, Tickets T1 WHERE P.userid = U.userid AND P.ticketid = T1.ticketid))"	Line 128

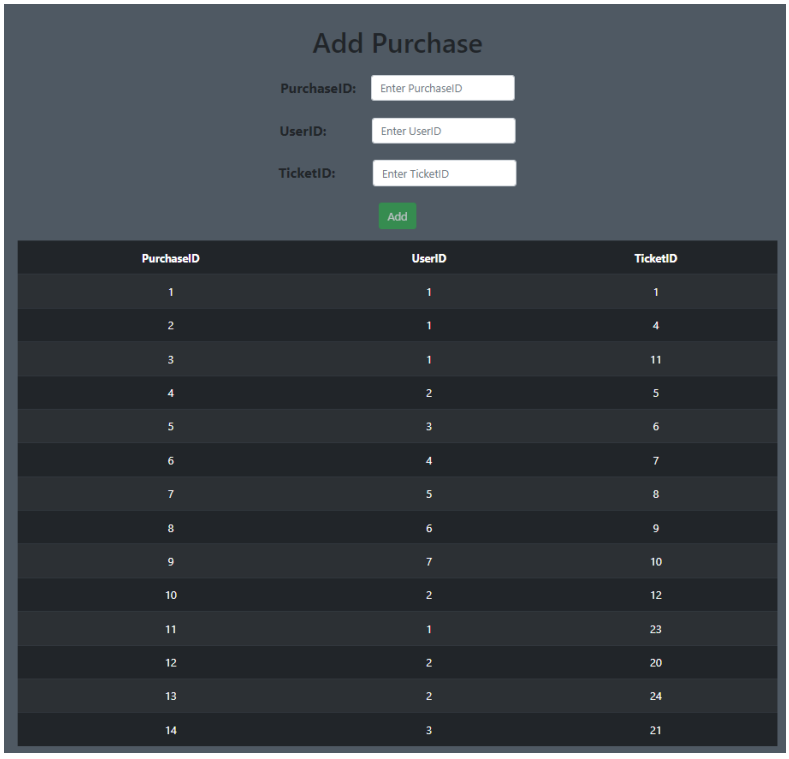
Query Results:

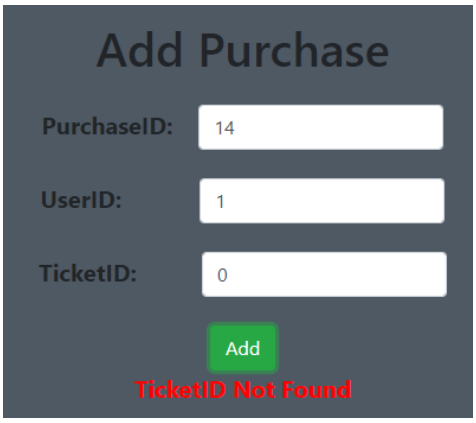
INSERT



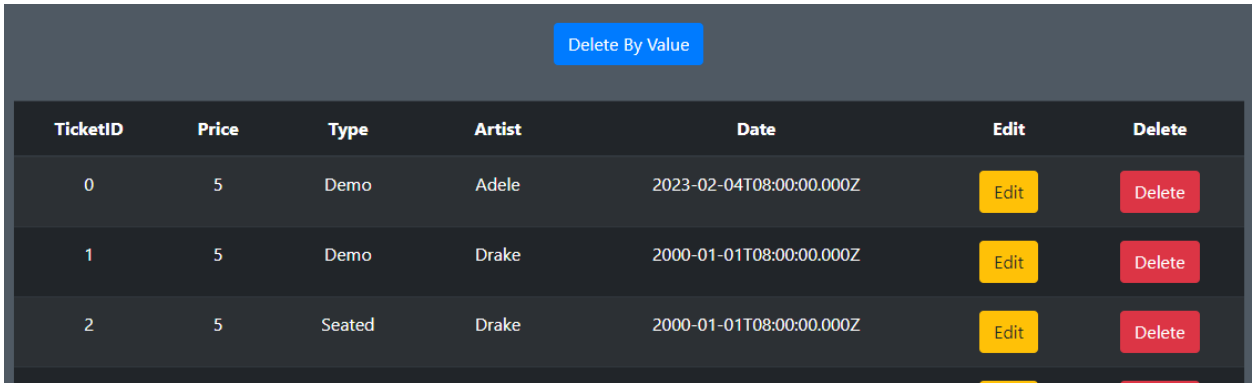


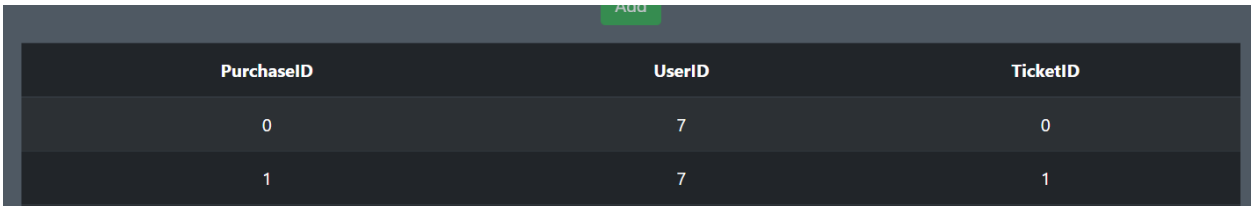


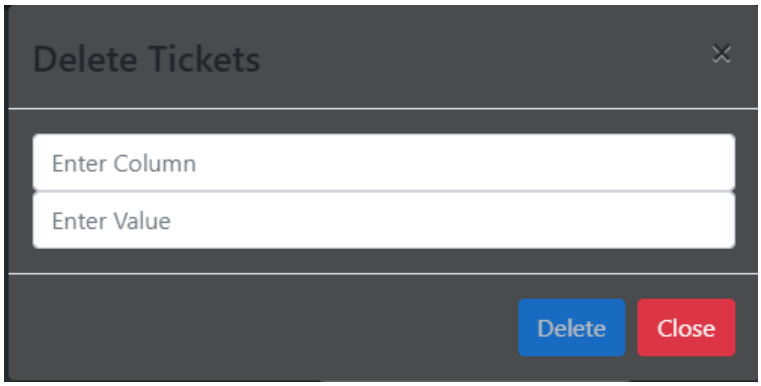


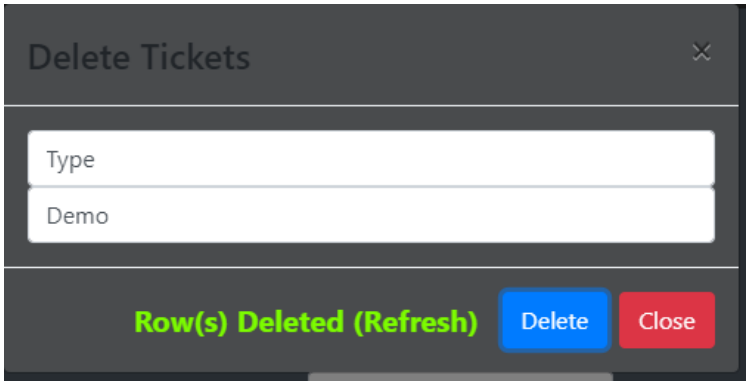


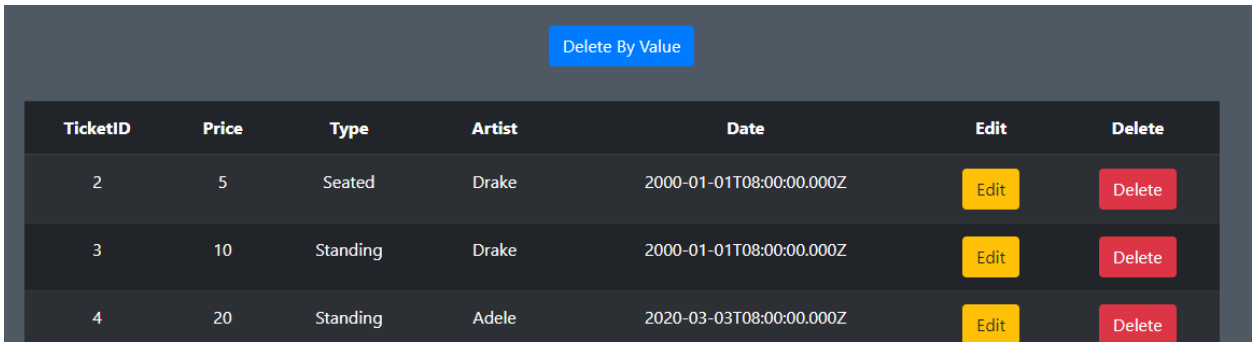
DELETE

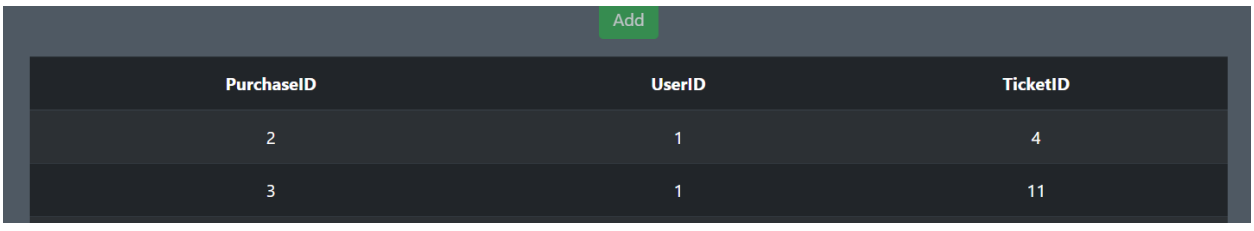

Delete By Value
TicketID Price Type Artist Date Edit Delete
0 5 Demo Adele 2023-02-04T08:00:00.000Z Edit Delete
1 5 Demo Drake 2000-01-01T08:00:00.000Z Edit Delete
2 5 Seated Drake 2000-01-01T08:00:00.000Z Edit Delete


PurchaseID UserID TicketID
0 7 0
1 7 1


Delete Tickets
Enter Column
Enter Value
Delete
Close

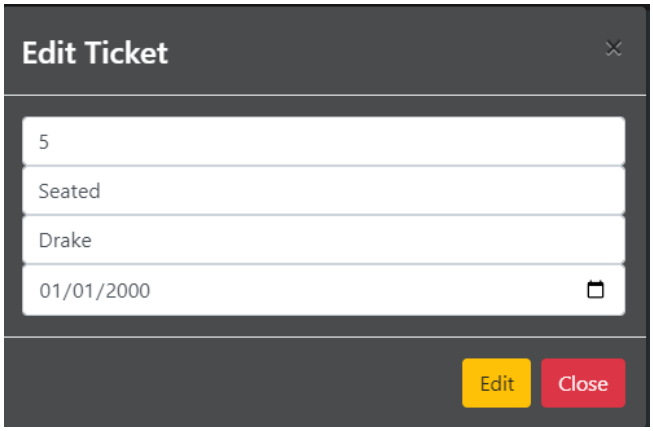

Delete Tickets
Type
Demo
Row(s) Deleted (Refresh)
Delete
Close

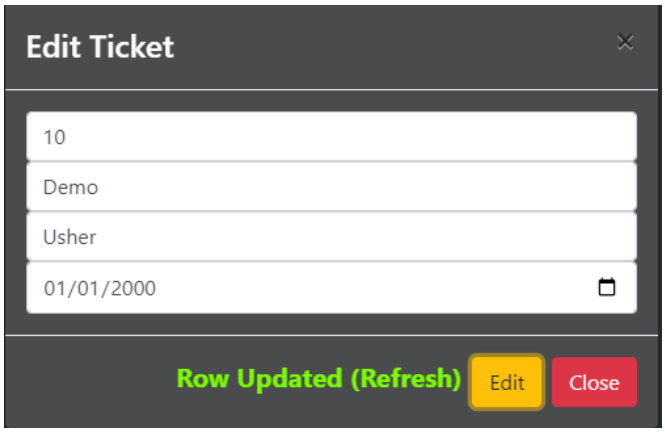

Delete By Value
TicketID Price Type Artist Date Edit Delete
2 5 Seated Drake 2000-01-01T08:00:00.000Z Edit Delete
3 10 Standing Drake 2000-01-01T08:00:00.000Z Edit Delete
4 20 Standing Adele 2020-03-03T08:00:00.000Z Edit Delete


Add
PurchaseID UserID TicketID
2 1 4
3 1 11

UPDATE

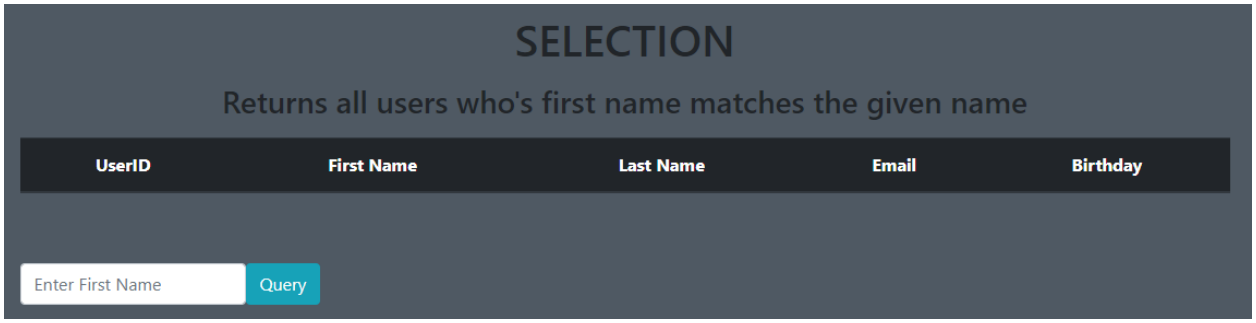
TicketID	Price	Type	Artist	Date	Edit	Delete
1	5	Seated	Drake	2000-01-01T08:00:00.000Z	Edit	Delete
2	5	Seated	Drake	2000-01-01T08:00:00.000Z	Edit	Delete
3	10	Standing	Drake	2000-01-01T08:00:00.000Z	Edit	Delete

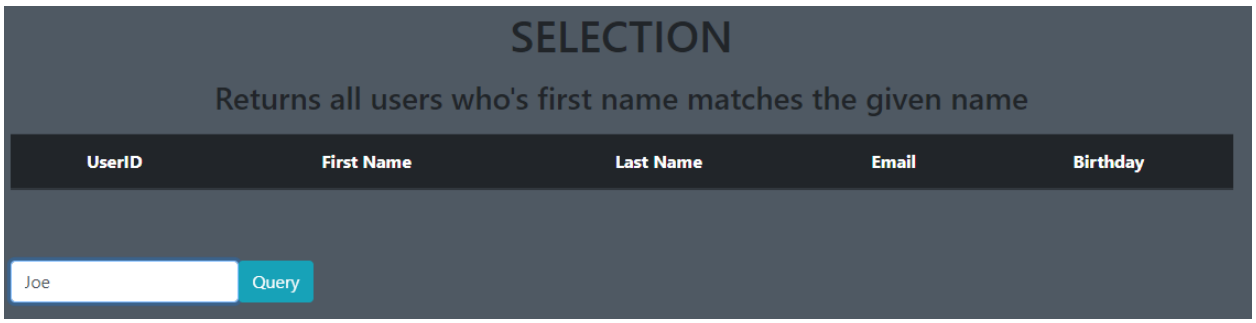


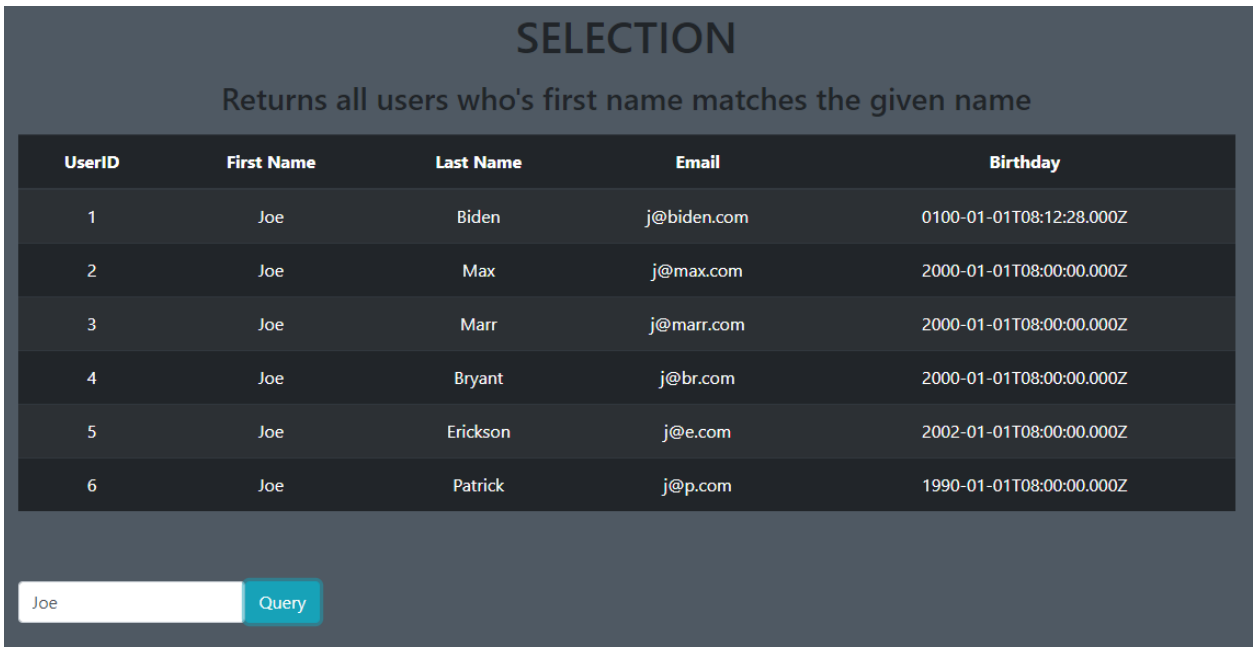


TicketID	Price	Type	Artist	Date	Edit	Delete
1	10	Demo	Usher	2000-01-01T08:00:00.000Z	Edit	Delete
2	5	Seated	Drake	2000-01-01T08:00:00.000Z	Edit	Delete
3	10	Standing	Drake	2000-01-01T08:00:00.000Z	Edit	Delete

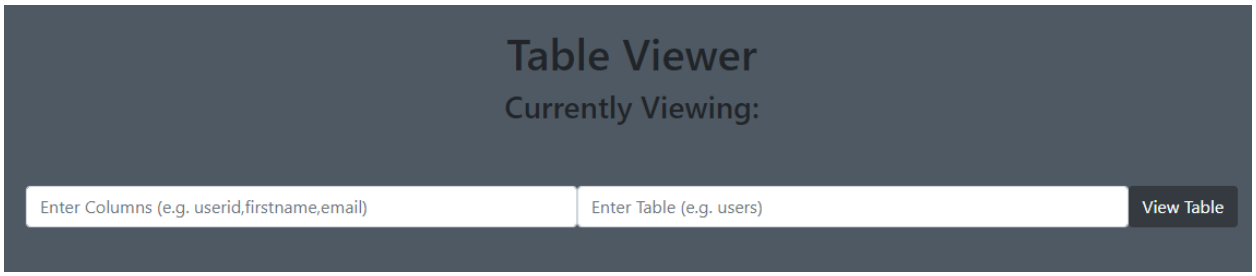
SELECTION







PROJECTION



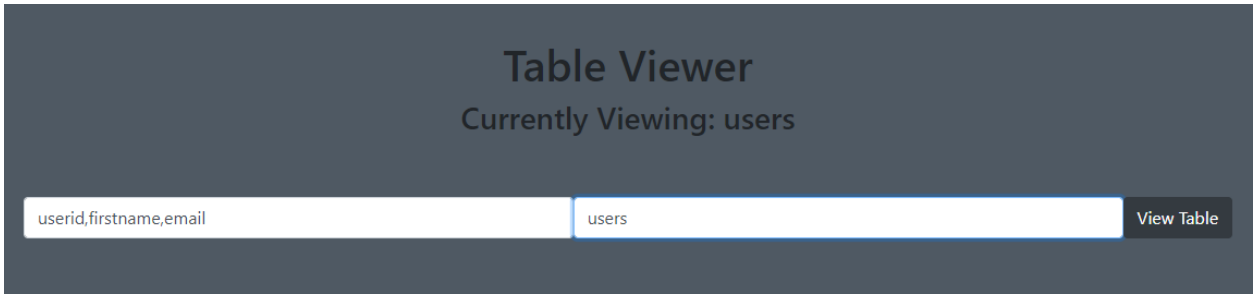
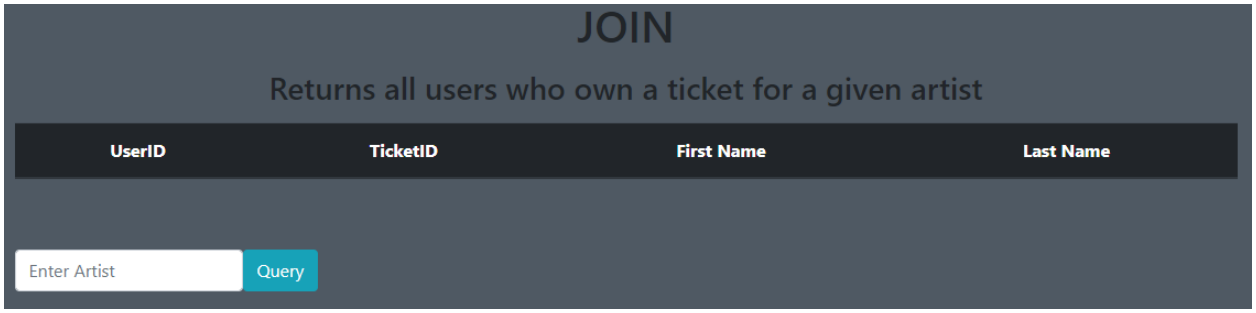


Table Viewer
Currently Viewing: users
userid,firstname,email
users
View Table


Table Viewer
Currently Viewing: users
userid,firstname,email
users
View Table
userid
firstname
email
1 Joe j@biden.com
2 Joe j@max.com
3 Joe j@marr.com
4 Joe j@br.com
5 Joe j@e.com
6 Joe j@p.com
7 Tiffany t@p.com
8 Emily emily@summer.com
9 Fabian fabian@b.com
10 John john@cena.com
11 Alex a@fray.com

JOIN


JOIN
Returns all users who own a ticket for a given artist
UserID
TicketID
First Name
Last Name
Enter Artist
Query

JOIN

Returns all users who own a ticket for a given artist

UserID	TicketID	First Name	Last Name

Drake Query

JOIN

Returns all users who own a ticket for a given artist

UserID	TicketID	First Name	Last Name
2	20	Joe	Max
3	21	Joe	Marr

Drake Query

GROUP

GROUP

Returns the number of tickets sold for each artist

Artist	# Tickets Sold

Query

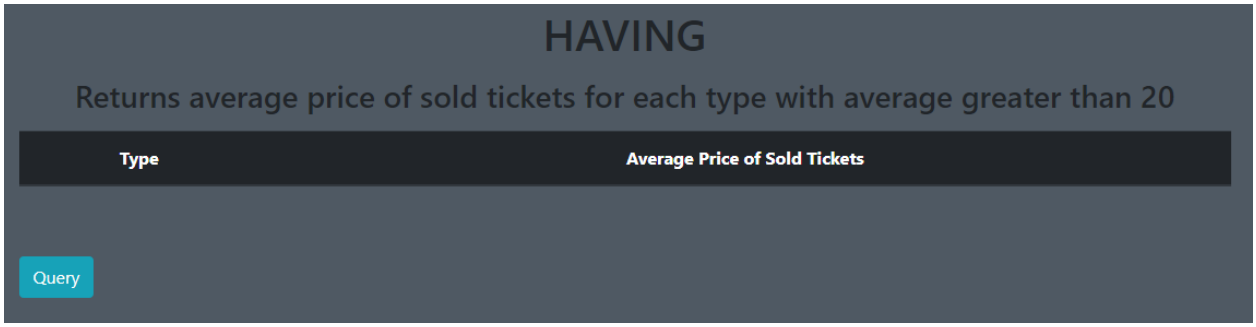
GROUP

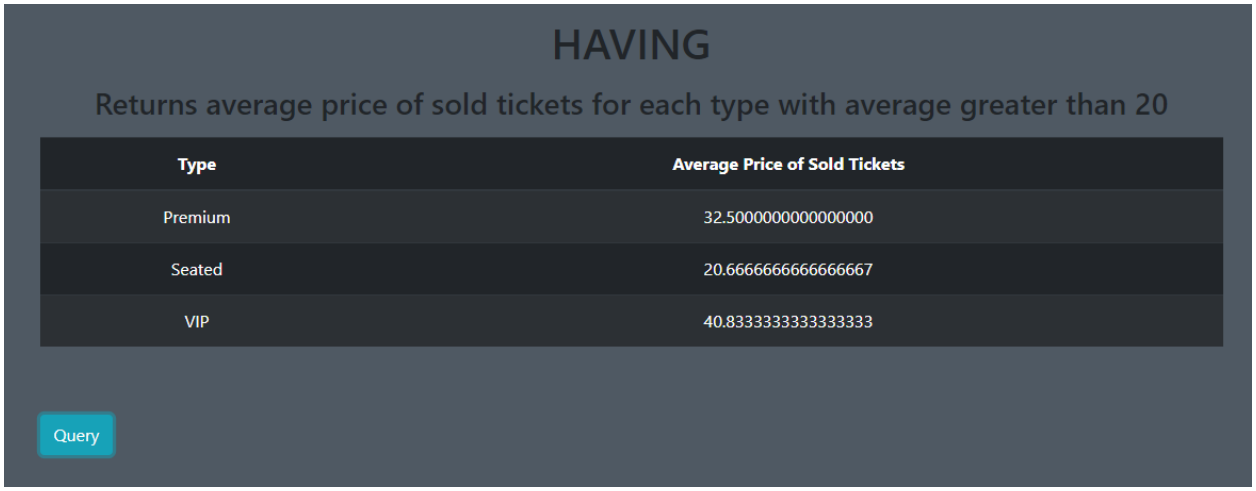
Returns the number of tickets sold for each artist

Artist	# Tickets Sold
Drake	2
Rihanna	2
Adele	7
Beyonce	2

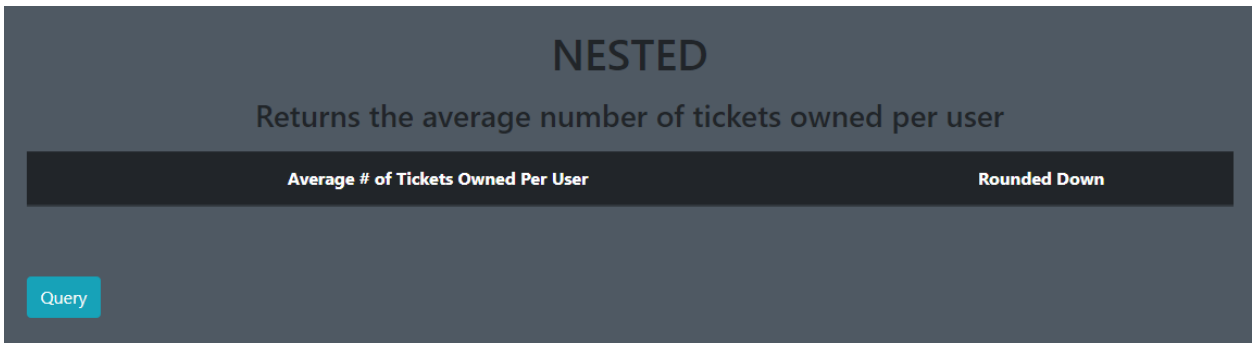
Query

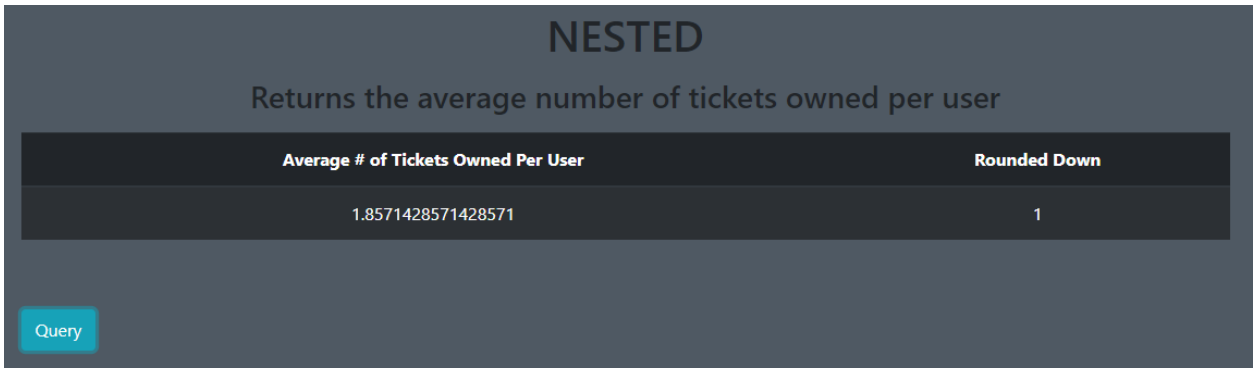
HAVING



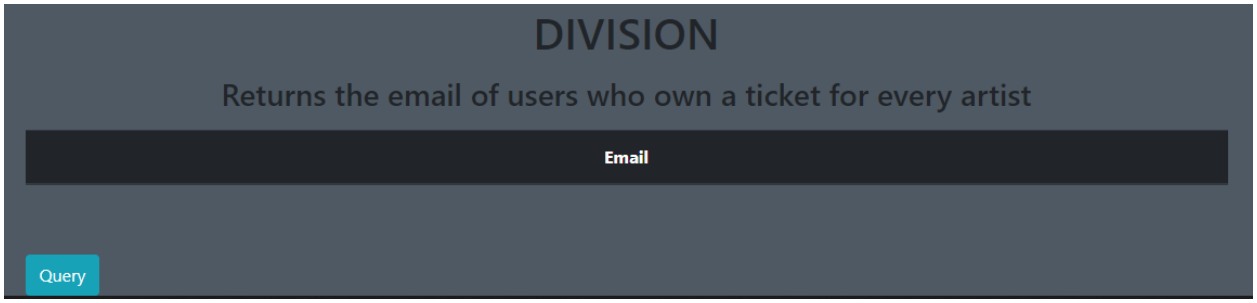


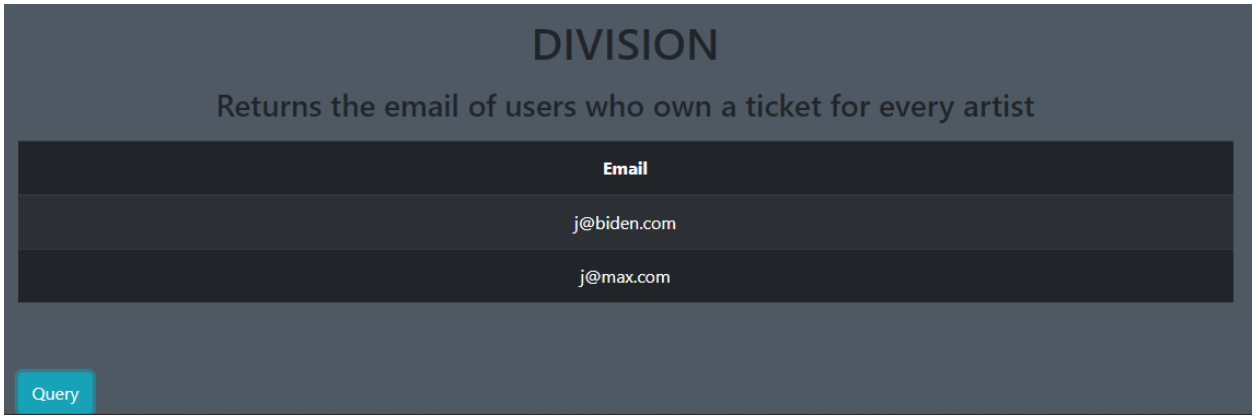
NESTED




NESTED
Returns the average number of tickets owned per user
Average # of Tickets Owned Per User
Rounded Down
1.8571428571428571
1
Query

DIVISION


DIVISION
Returns the email of users who own a ticket for every artist
Email
Query


DIVISION
Returns the email of users who own a ticket for every artist
Email
j@biden.com
j@max.com
Query