University of British Columbia, Vancouver
Department of Computer Science

CPSC 304 Project Cover Page

Milestone #: 4

Date: 5/4/2023

Group Number: 19

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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

---

```
var mysql = require('mysql');
const fs = require("fs");
const { get } = require('express/lib/response');


var con = mysql.createConnection({
  host: "34.123.170.73",
  user: "root",
  //password: "qwertyuiop",
  database: "betwise"
});


function sql304Script(){
  con.connect((error) => {
    if(error){
      console.log('Error connecting to the MySQL Database');
      throw error;
    }
    console.log('Connection established sucessfully');
  });
}

sql304Script.prototype.dropBettor = function() {
var sql = "DROP TABLE IF EXISTS Bettor";
con.query(sql, function (err, result) {
        if (err) throw err;
});
}
sql304Script.prototype.dropBets = function() {
var sql = "DROP TABLE IF EXISTS Bets";
con.query(sql, function (err, result) {
        if (err) throw err;
});
}

sql304Script.prototype.dropTeam = function() {
var sql = "DROP TABLE IF EXISTS Team";
con.query(sql, function (err, result) {
        if (err) throw err;
});
}
```

```
sql304Script.prototype.createBettor = function() {
var sql = "CREATE TABLE IF NOT EXISTS Bettor (Account_ID INT NOT NULL AUTO_INCREMENT,
Bettor_Name VARCHAR(255), Bettor_Address VARCHAR(200), Email VARCHAR(50) UNIQUE,
Bettor_Status INT, PRIMARY KEY (Account_ID))";
con.query(sql, function (err,result) {
        if (err) throw err;
});
}

sql304Script.prototype.createBets = function() {
var sql = "CREATE TABLE IF NOT EXISTS Bets (Account_ID INT NOT NULL, Bet_ID INT NOT NULL
AUTO_INCREMENT, Payment_Type VARCHAR(20), Bet_Amount DOUBLE, Which_Team INT NOT
NULL, Bet_Date DATE, PRIMARY KEY (Bet_ID, Account_ID), FOREIGN KEY (Account_ID)
REFERENCES Bettor(Account_ID) ON DELETE CASCADE, FOREIGN KEY (Which_Team)
REFERENCES Team(Team_ID) ON DELETE CASCADE)";
con.query(sql, function (err,result) {
        if (err) throw err;
});
}

sql304Script.prototype.createTeam = function() {
var sql = "CREATE TABLE IF NOT EXISTS Team (Team_ID INT NOT NULL AUTO_INCREMENT,
Team_Name VARCHAR(50) NOT NULL, Country VARCHAR(20), City VARCHAR(20), Player_Roster
VARCHAR(700) NOT NULL UNIQUE, Number_Of_Players INT, PRIMARY KEY (Team_ID), UNIQUE
(Team_Name, Player_Roster))";
con.query(sql, function (err,result) {
        if (err) throw err;
});
}

sql304Script.prototype.addBettor = function(name, address, email, status) {
  name.replace(/\W/g, '');
  address.replace(/\W/g, '');
  email.replace(/\W/g, '');
  var sql = "INSERT INTO Bettor (Bettor_Name, Bettor_Address, Email, Bettor_Status) VALUES
('"+name+"', '"+address+"', '"+email+"', "+status+")";
  con.query(sql, function (err, result) {
    if (err) throw err;
  });
}
```

```
sql304Script.prototype.addBet = function(name, paymentType, betAmount, teamName,
betDate) {
  name.replace(/\W/g, '');
  paymentType.replace(/\W/g, '');
  teamName.replace(/\W/g, '');
  var sql = "INSERT INTO Bets (Account_ID, Payment_Type, Bet_Amount, Which_Team,
Bet_Date) VALUES ((SELECT Account_ID FROM Bettor WHERE Bettor_Name='"+name+"'),
'"+paymentType+"', "+betAmount+", (SELECT Team_ID FROM Team WHERE
Team_Name='"+teamName+"'), '"+betDate+"')";
  con.query(sql, function (err, result) {
    return {name: name, paymentType: paymentType, betAmount: betAmount, teamName:
teamName, betDate: betDate}
  });
}
sql304Script.prototype.addTeam = function(teamName, country, city, playerRoster,
numberOfPlayers) {
  teamName.replace(/\W/g, '');
  country.replace(/\W/g, '');
  city.replace(/\W/g, '');
  playerRoster.replace(/\W/g, '');
  var sql = "INSERT INTO Team (Team_Name, Country, City, Player_Roster, Number_Of_Players)
VALUES ('"+teamName+"', '"+country+"', '"+city+"', '"+playerRoster+"', "+numberOfPlayers+")";
  con.query(sql, function (err, result) {
    if (err) throw err;
  });
}

var db = new sql304Script();
db.dropBets();
db.dropBettor();
db.dropTeam();
db.createBettor();
db.createTeam();
db.createBets();
db.addBettor("John", "123 Main St", "John@gmail.com", 1);
db.addBettor("Jane", "124 Main St", "Jane@gmail.com", 1);
db.addBettor("Joe", "125 Main St", "Joe@gmail.com", 1);
db.addBettor("Bob", "126 Main St", "Bob@gmail.com", 0);
db.addBettor("Christine", "127 Main St", "Christine@gmail.com", 1);
db.addTeam("Owls", "USA", "Miami", "Players", 11);
db.addTeam("Bears", "USA", "Chicago", "BearsPlayers", 11);
db.addTeam("Bulls", "USA", "Chicago", "BullsPlayers", 11);
db.addTeam("Cubs", "USA", "Chicago", "CubsPlayers", 11);
```

```
db.addTeam("White Sox", "USA", "Chicago", "WhiteSoxPlayers", 11);
db.addTeam("Black Hawks", "USA", "Chicago", "BlackHawksPlayers", 11);
db.addBet("John","Credit Card", 102, "Owls", "2021-04-01");
db.addBet("Jane","Credit Card", 340, "Bears", "2021-04-01");
db.addBet("Christine","Credit Card", 1, "Bulls", "2021-04-01");
db.addBet("Bob","Credit Card", 95340, "Cubs", "2021-04-01");
db.addBet("Jane","Credit Card", 5601, "White Sox", "2021-04-01");
db.addBet("Joe","Credit Card", 86, "Black Hawks", "2021-04-01");
db.addBet("Christine","Credit Card", 684, "White Sox", "2021-04-01");
db.addBet("John","Credit Card", 311, "Black Hawks", "2021-04-01");
db.addBet("John","Credit Card", 102, "Owls", "2021-04-01");
db.addBet("John","Credit Card", 900, "Bears", "2021-04-01");
db.addBet("John","Credit Card", 7700, "Bulls", "2021-04-01");
db.addBet("John","Credit Card", 800, "Cubs", "2021-04-01");
db.addBet("John","Credit Card", 400, "White Sox", "2021-04-01");
db.addBet("John","Credit Card", 600, "Black Hawks", "2021-04-01");
db.addBet("Christine","Credit Card", 102, "Owls", "2021-04-01");
db.addBet("Christine","Credit Card", 900, "Bears", "2021-04-01");
db.addBet("Christine","Credit Card", 7700, "Bulls", "2021-04-01");
db.addBet("Christine","Credit Card", 800, "Cubs", "2021-04-01");
db.addBet("Christine","Credit Card", 400, "White Sox", "2021-04-01");
db.addBet("Christine","Credit Card", 600, "Black Hawks", "2021-04-01");

module.exports=sql304Script;
```

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Short Description of Project:

- The domain of our application is gambling/team sports betting. The application's purpose is to provide the users with an interface that allows them to place bets on team sports matches with ease. The database will model that of a sportsbook. It will provide information on sports teams and betting odds. Our project will use the statistics of teams and players to provide betting odds for people to put money on. We will also model the aspect of account management so that each bettor can be uniquely identified and the database will link their bets to their account.

How the final schema differed from the schema we turned in:

- Our final schema only includes three tables, Bettor, Bets, and Teams. This is a lot less compared to our original schema including many more. We made this change because we realised that by using Better, Bets, and Teams, we can fulfil all the query requirements and more.

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Screenshot of schema's data after sql304Script runs:

- Bettor

Account_ID	Bettor_Name	Bettor_Address	Email	Bettor_Status
1	John	123 Main St	John@gmail.com	1
2	Jane	124 Main St	Jane@gmail.com	1
3	Joe	125 Main St	Joe@gmail.com	1
4	Bob	126 Main St	Bob@gmail.com	0
5	Christine	127 Main St	Christine @gmail.com	1
NULL	NULL	NULL	NULL	NULL

-

Team_ID	Team_Name	Country	City	Player_Roster	Number_Of_Players
1	Owls	USA	Miami	Players	11
2	Bears	USA	Chicago	BearsPlayers	11
3	Bulls	USA	Chicago	BullsPlayers	11
4	Cubs	USA	Chicago	CubsPlayers	11
5	White Sox	USA	Chicago	WhiteSoxPlayers	11
6	Black Hawks	USA	Chicago	BlackHawksPlayers	11
NULL	NULL	NULL	NULL	NULL	NULL

-

- Bets

Account_ID	Bet_ID	Payment_Type	Bet_Amount	Which_Team	Bet_Date
1	1	Credit Card	102	1	2021-04-01
2	2	Credit Card	340	2	2021-04-01
5	3	Credit Card	1	3	2021-04-01
4	4	Credit Card	95340	4	2021-04-01
2	5	Credit Card	5601	5	2021-04-01
3	6	Credit Card	86	6	2021-04-01
5	7	Credit Card	684	5	2021-04-01
1	8	Credit Card	311	6	2021-04-01
1	9	Credit Card	102	1	2021-04-01
1	10	Credit Card	900	2	2021-04-01
1	11	Credit Card	7700	3	2021-04-01
1	12	Credit Card	800	4	2021-04-01
1	13	Credit Card	400	5	2021-04-01
1	14	Credit Card	600	6	2021-04-01
5	15	Credit Card	102	1	2021-04-01
5	16	Credit Card	900	2	2021-04-01
5	17	Credit Card	7700	3	2021-04-01
5	18	Credit Card	800	4	2021-04-01
5	19	Credit Card	400	5	2021-04-01
5	20	Credit Card	600	6	2021-04-01
NULL	NULL	NULL	NULL	NULL	NULL

-

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SQL Queries and where to find them:

- INSERT to Bettors
    - Can be found at File: sql304.js, Line: 48
- DELETE from Bettors
    - Can be found at File: sql304.js, Line: 135
- UPDATE Bettors
    - Can be found at File: sql304.js, Line: 152
- SELECT from Bettors
    - Can be found at File: sql304.js, Line: 114
- PROJECTION of a table specified by user
    - Can be found at File: sql304.js, Line: 173
- JOIN Bettors and Bets on Account_ID based on a user criterion
    - Can be found at File: sql304.js, Line: 196
- GROUP BY Bettor Name and show maximum bet of each bettor (Group By with aggregation)
    - Can be found at File: sql304.js, Line: 217
- Bettors HAVING a max bet greater than 100 dollars (Having with Aggregation)
    - Can be found at File: sql304.js, Line: 229
- GROUP BY Bettor Name with more bets than the average number of bets per person (Group By with nested aggregation)
    - Can be found at File: sql304.js, Line: 242
- Find all Bettors that have bet on all teams (Division)
    - Can be found at File: sql304.js, Line: 255

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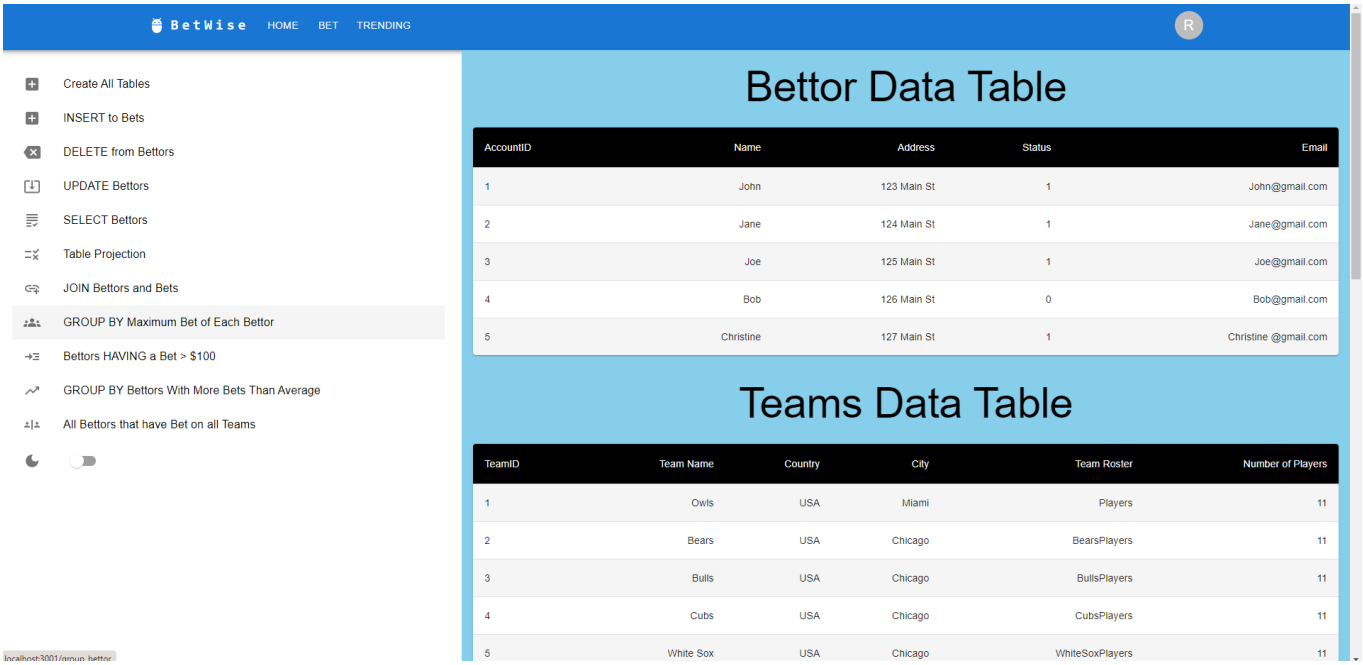
SQL Queries Screenshots

This is the before screen for each query



For the following queries, each photo for each query will represent the “during” then “after” respectively.

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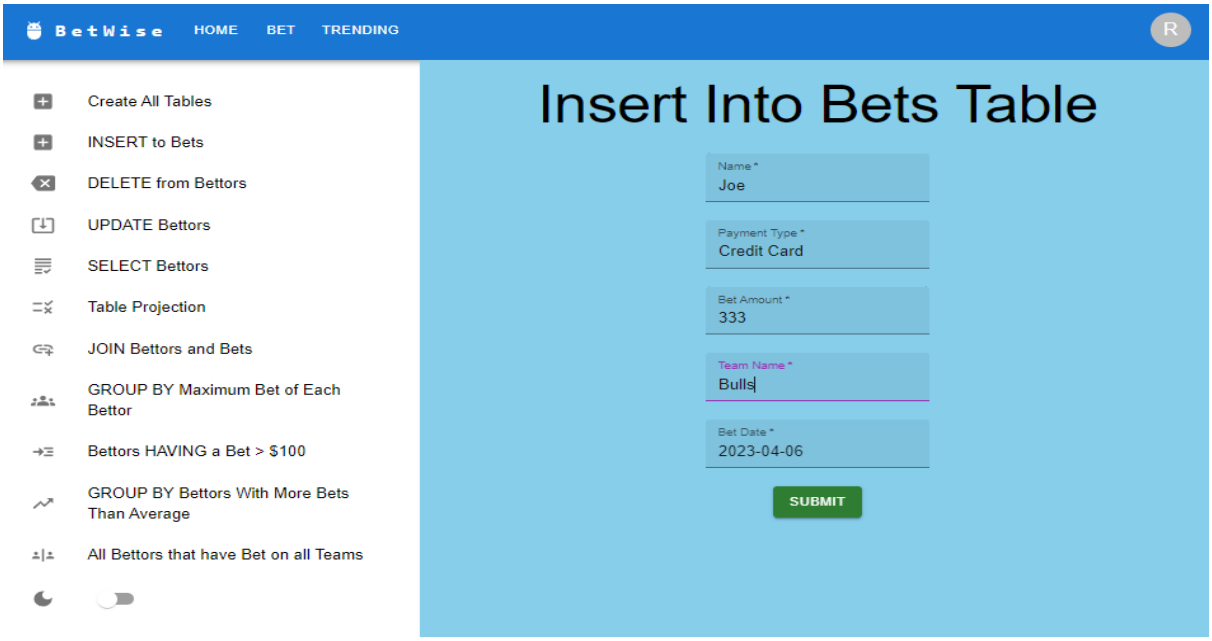
- INSERT to Bettors



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BetID	AccountID	PaymentType	Amount	Team Name	Transaction Date
1	1	Credit Card	$102	1	2021-04-01
2	2	Credit Card	$340	2	2021-04-01
3	5	Credit Card	$1	3	2021-04-01
4	4	Credit Card	$95340	4	2021-04-01
5	2	Credit Card	$5601	5	2021-04-01
6	3	Credit Card	$86	6	2021-04-01
7	5	Credit Card	$684	5	2021-04-01
8	1	Credit Card	$311	6	2021-04-01
9	1	Credit Card	$102	1	2021-04-01
10	1	Credit Card	$900	2	2021-04-01
11	1	Credit Card	$7700	3	2021-04-01
12	1	Credit Card	$800	4	2021-04-01
13	1	Credit Card	$400	5	2021-04-01
14	1	Credit Card	$600	6	2021-04-01
15	5	Credit Card	$102	1	2021-04-01
16	5	Credit Card	$900	2	2021-04-01
17	5	Credit Card	$7700	3	2021-04-01
18	5	Credit Card	$800	4	2021-04-01
19	5	Credit Card	$400	5	2021-04-01
20	5	Credit Card	$600	6	2021-04-01
21	3	Credit Card	$2	3	2021-04-01
22	3	Credit Card	$333	3	2023-04-06

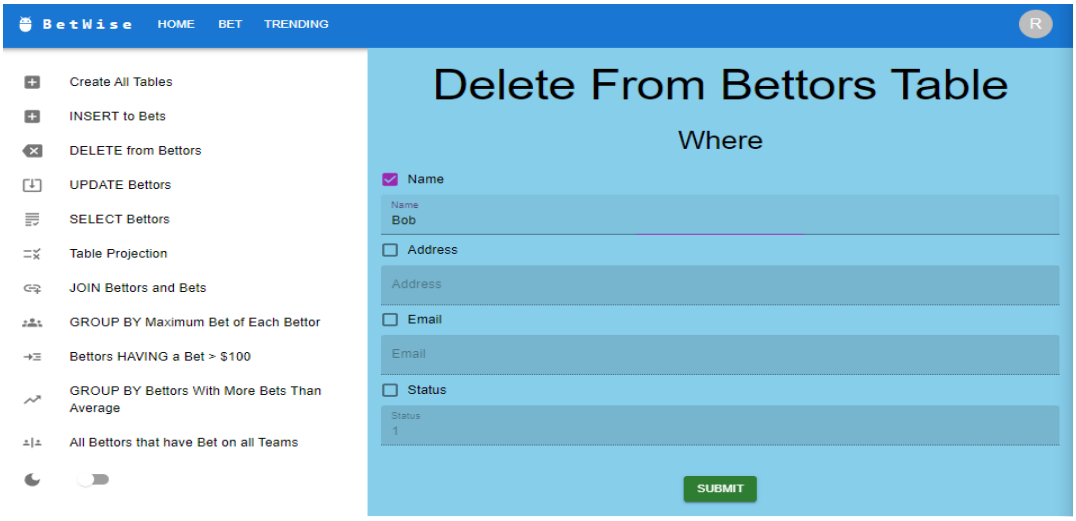
-

- DELETE from Bettors

Bettor Data Table

AccountID	Name	Address	Status	Email
1	John	123 Main St	1	John@gmail.com
2	Jane	124 Main St	1	Jane@gmail.com
3	Joe	125 Main St	1	Joe@gmail.com
4	Bob	126 Main St	0	Bob@gmail.com
5	Christine	127 Main St	1	Christine@gmail.com

-



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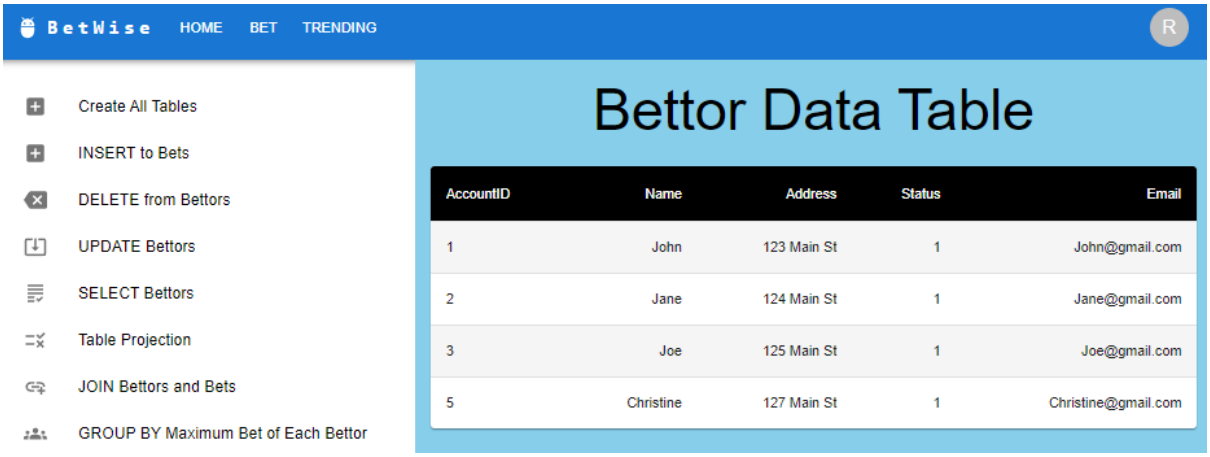

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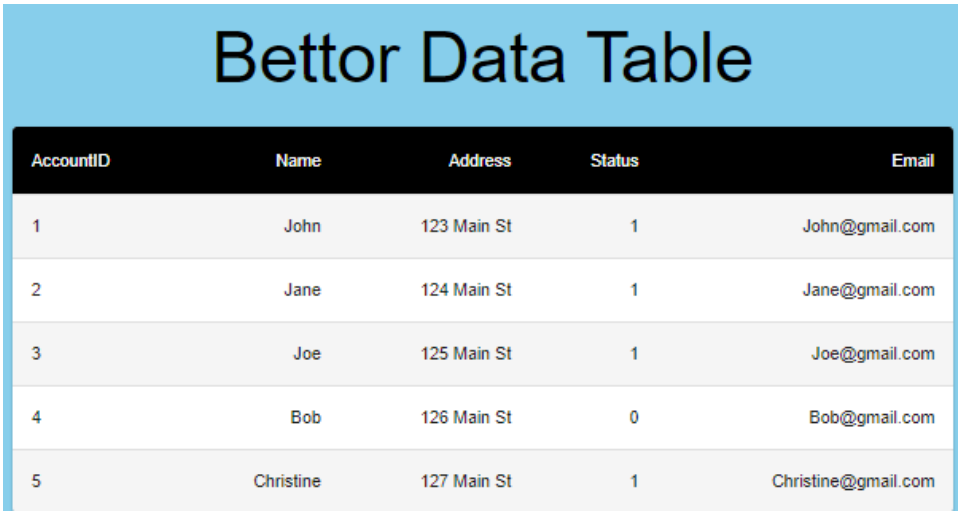
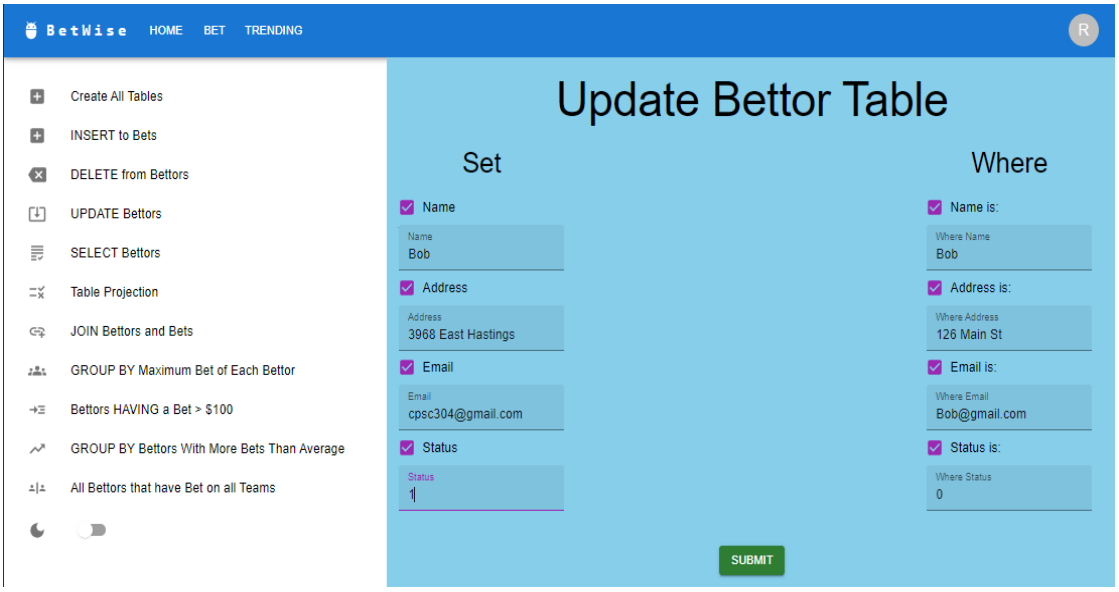
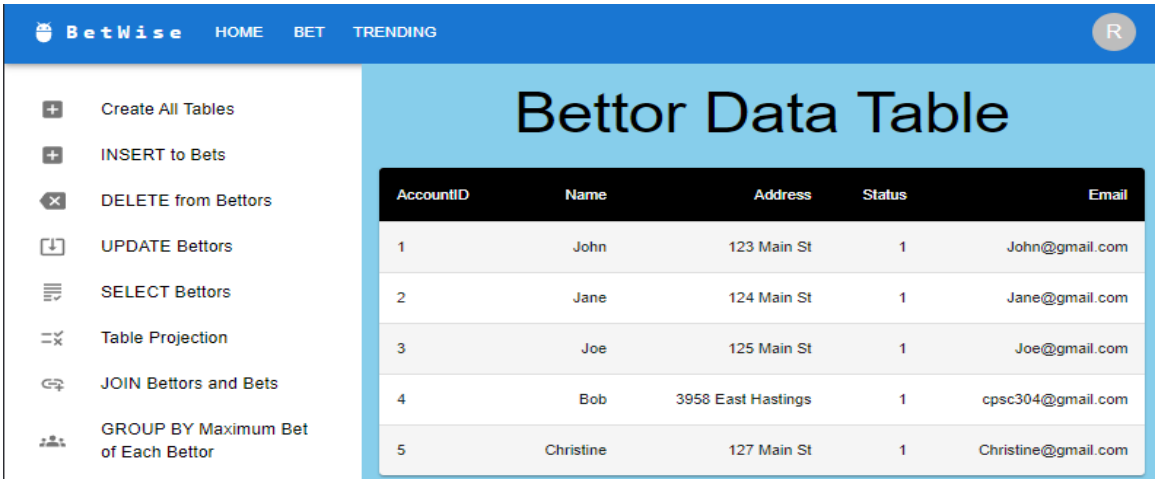
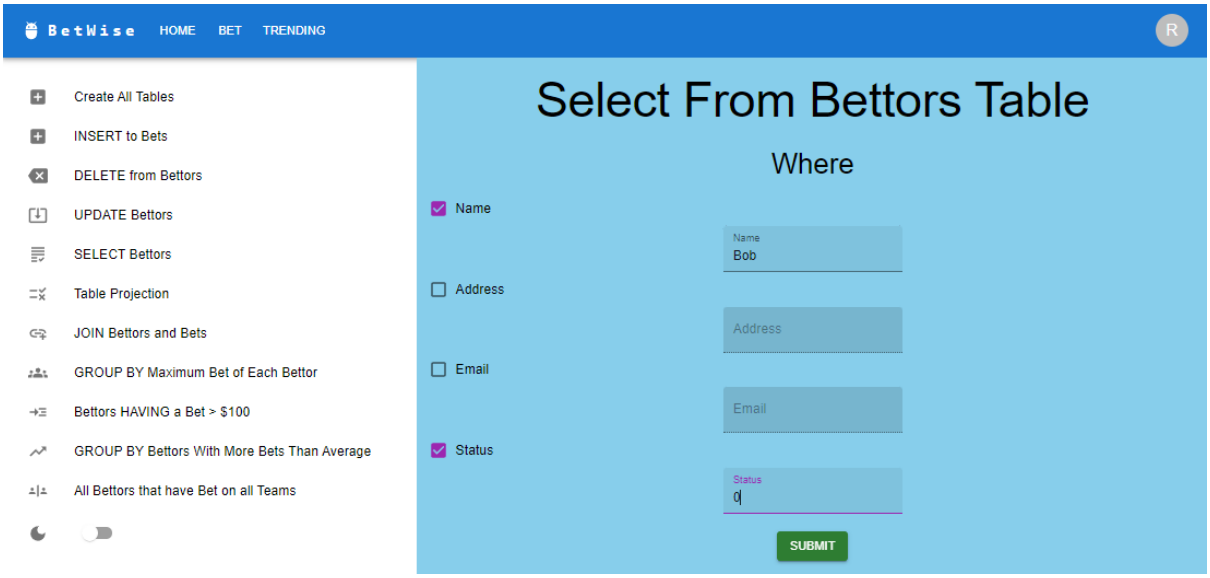
- UPDATE Bettors

- 

- 

- 

- SELECT from Bettors



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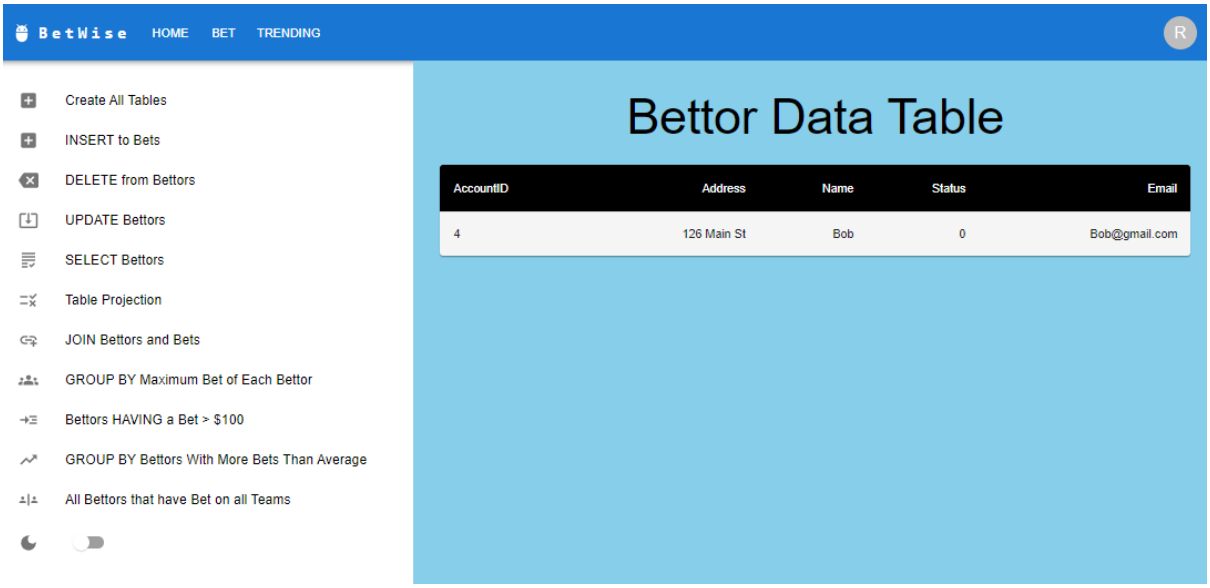

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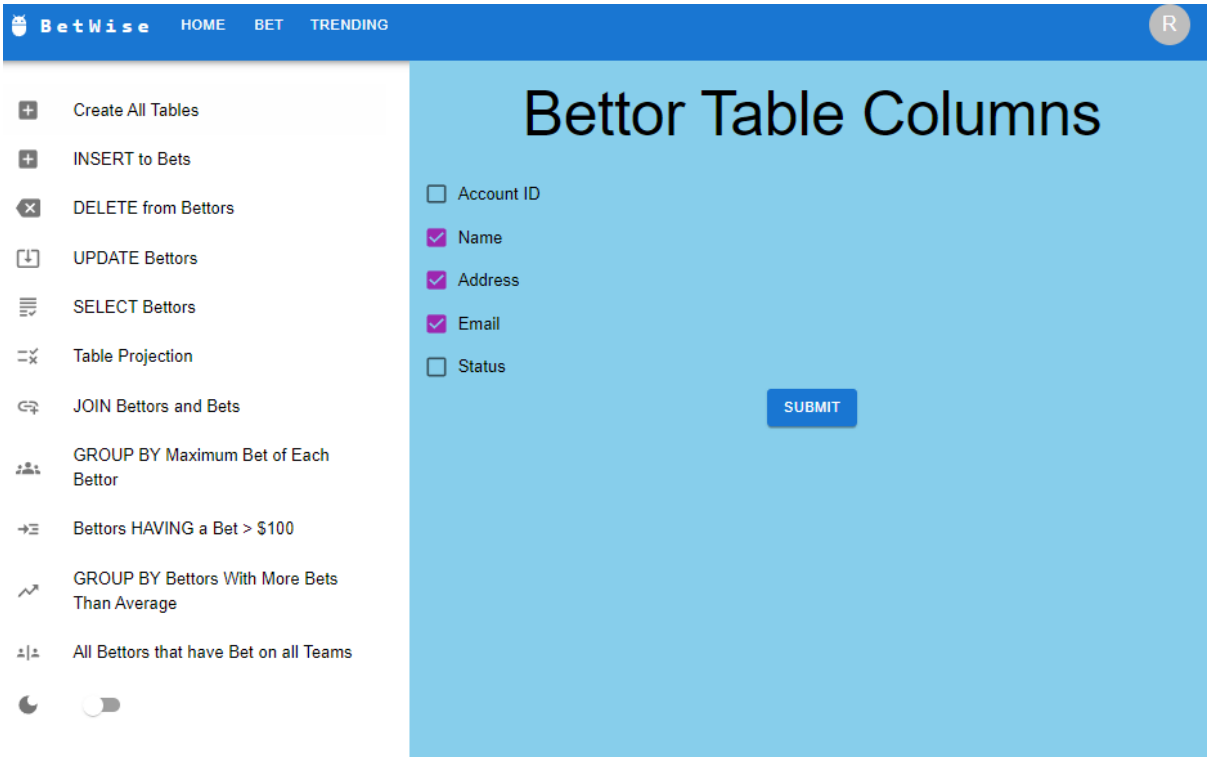
- PROJECTION of a table specified by user



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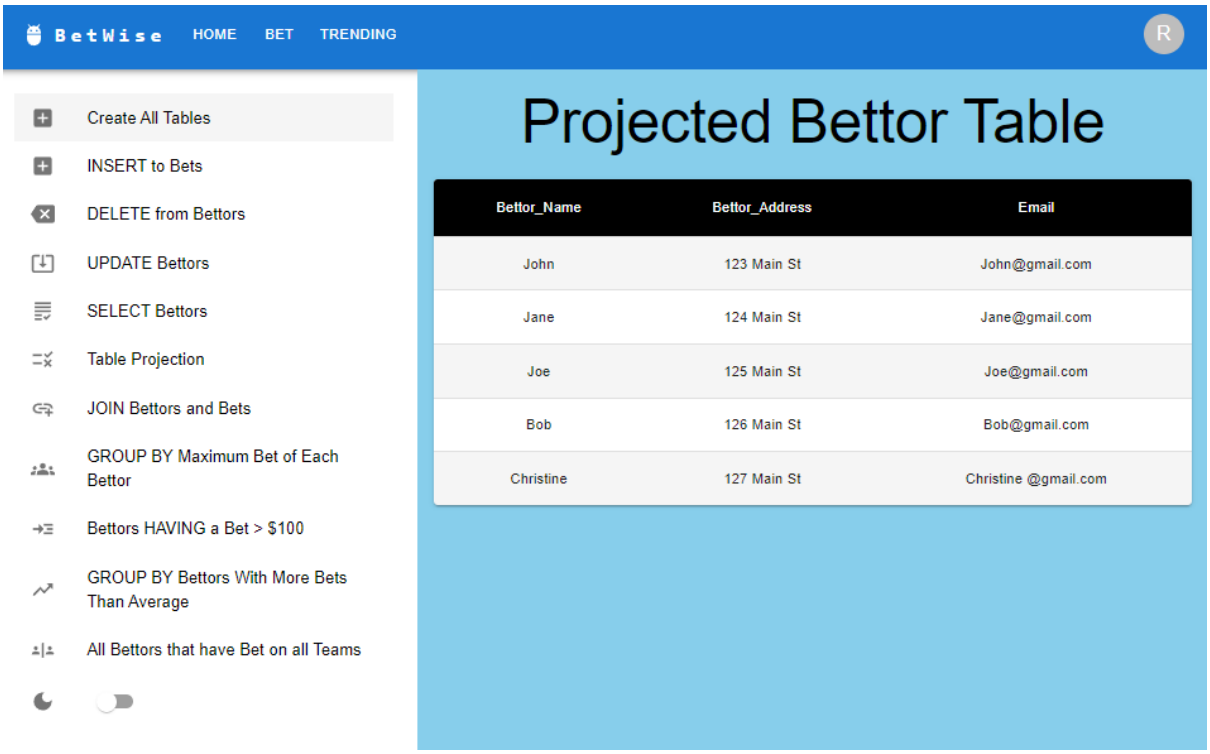

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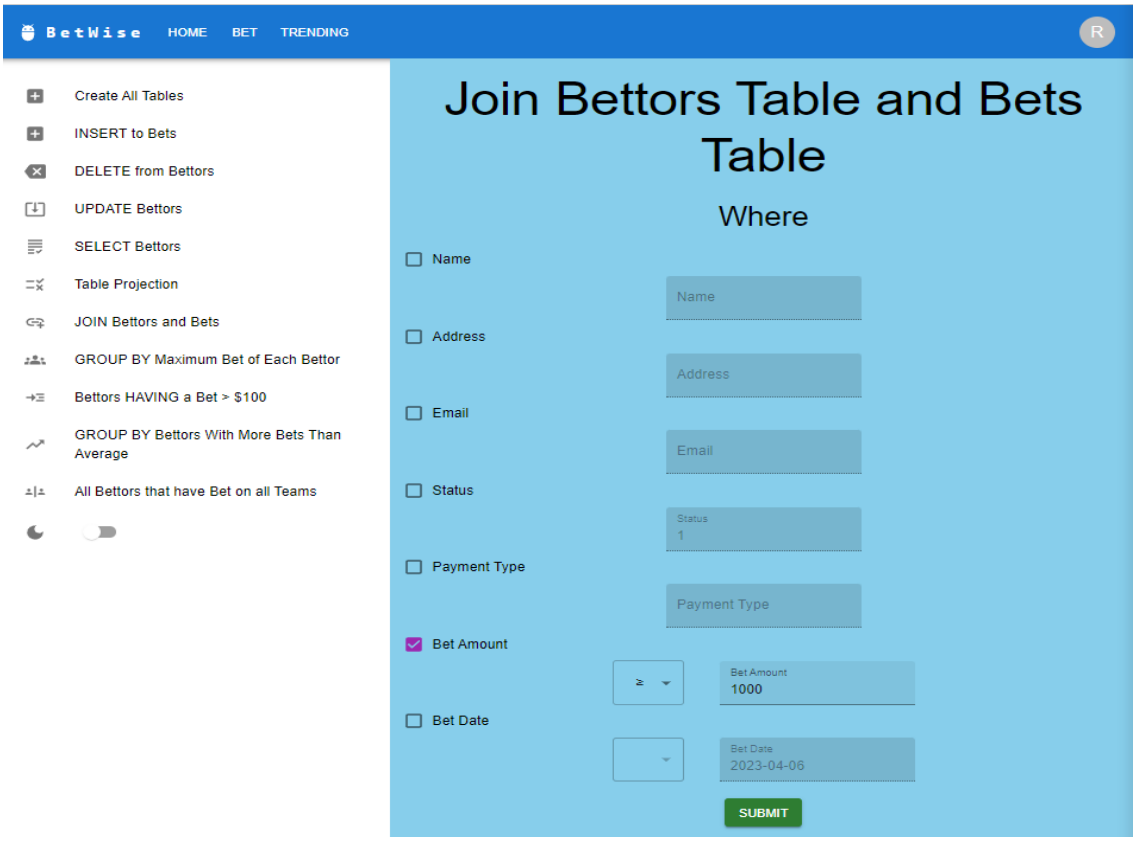
- JOIN Bettors and Bets on Account_ID based on a user criterion



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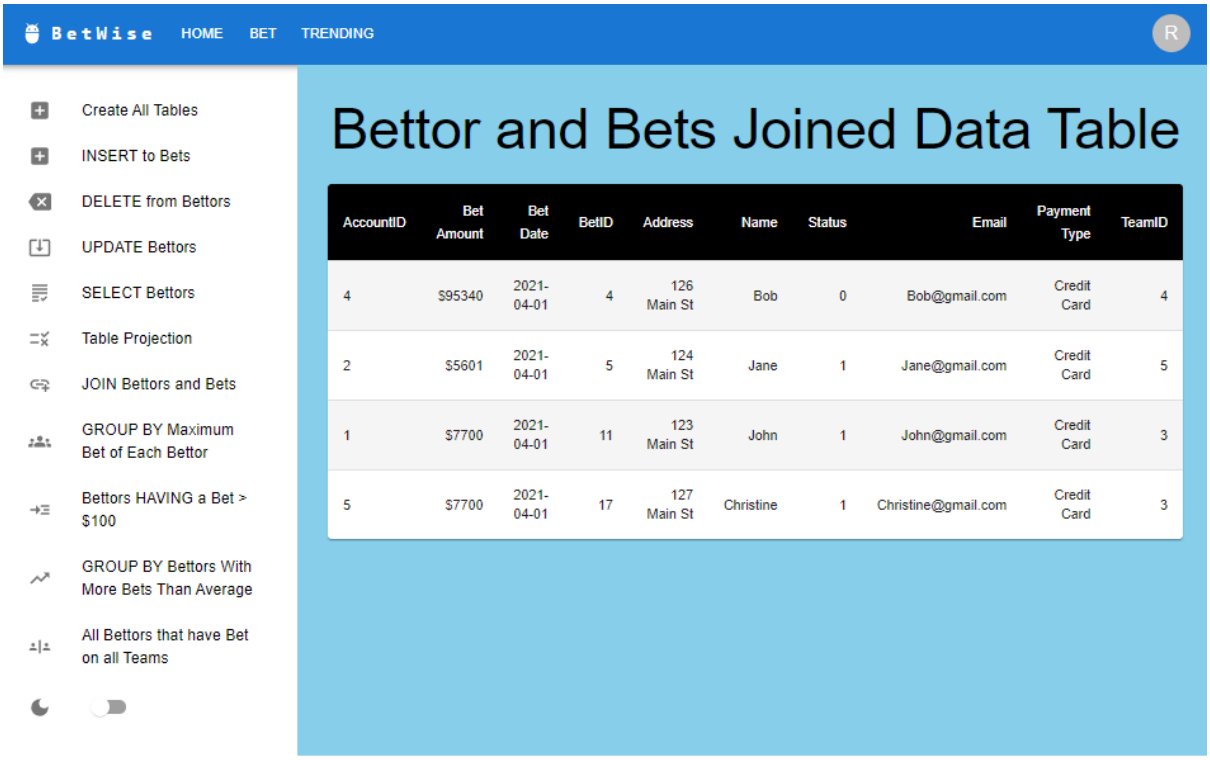

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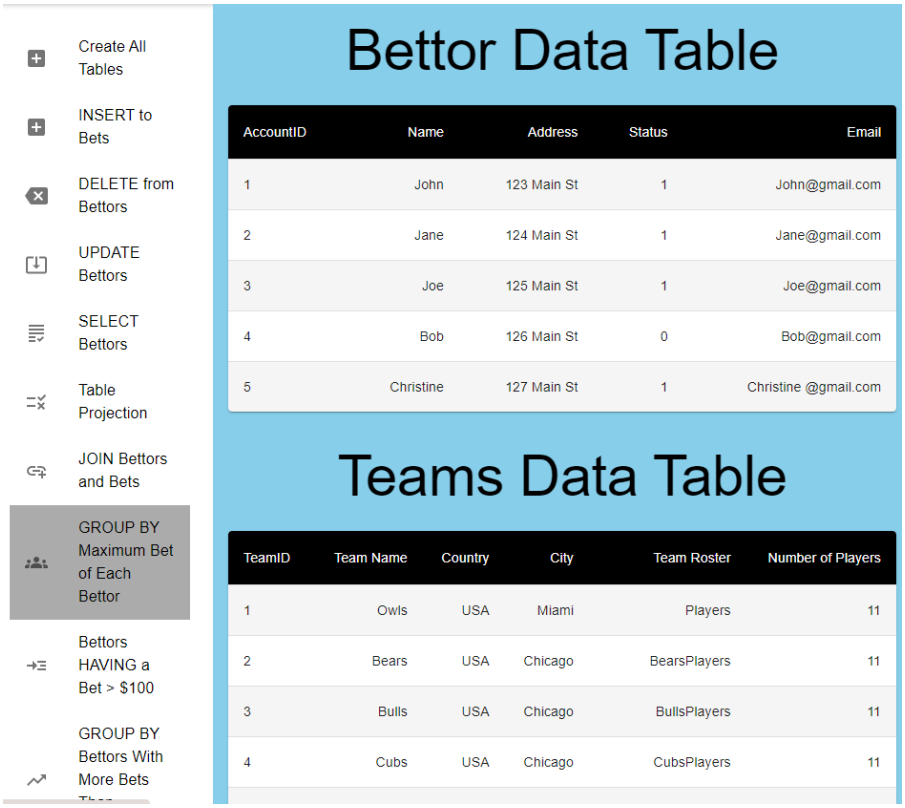
- GROUP BY Bettor Name and show maximum bet of each bettor (Group By with aggregation)



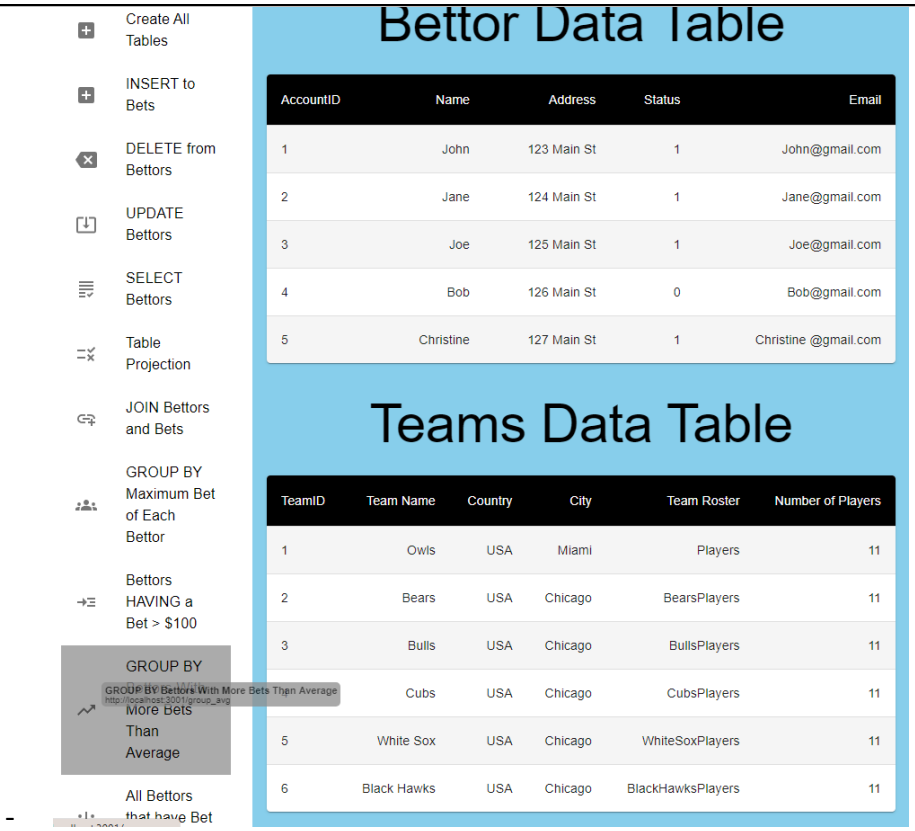

BetWise
HOME
BET
TRENDING
R
Create All Tables
INSERT to Bets
DELETE from Bettors
UPDATE Bettors
SELECT Bettors
Table Projection
JOIN Bettors and Bets
GROUP BY Maximum Bet of Each Bettor
Bettors HAVING a Bet > $100
GROUP BY Bettors With More Bets
Maximum Bet Per Bettor Table
Name
Email
Address
Maximum Bet
John
John@gmail.com
123 Main St
$7700
Jane
Jane@gmail.com
124 Main St
$5601
Joe
Joe@gmail.com
125 Main St
$86
Bob
Bob@gmail.com
126 Main St
$95340
Christine
Christine @gmail.com
127 Main St
$7700

- Bettors HAVING a max bet greater than 100 dollars (Having with Aggregation)


BetWise
HOME
BET
TRENDING
R
Create All Tables
INSERT to Bets
DELETE from Bettors
UPDATE Bettors
SELECT Bettors
Table Projection
JOIN Bettors and Bets
GROUP BY Maximum Bet of Each Bettor
Bettors HAVING a Bet > $100
GROUP BY Bettors With More Bets Than
Bettors With A Maximum Bet Greater Than $100 Table
Name
Email
Address
Maximum Bet
John
John@gmail.com
123 Main St
$7700
Jane
Jane@gmail.com
124 Main St
$5601
Bob
Bob@gmail.com
126 Main St
$95340
Christine
Christine @gmail.com
127 Main St
$7700

-

- GROUP BY Bettor Name with more bets than the average number of bets per person (Group By with nested aggregation)


Create All Tables
INSERT to Bets
DELETE from Bettors
UPDATE Bettors
SELECT Bettors
Table Projection
JOIN Bettors and Bets
GROUP BY Maximum Bet of Each Bettor
Bettors HAVING a Bet > $100
GROUP BY More Bets Than Average
All Bettors
GROUP BY Bettors With More Bets Than Average
http://localhost:3001/group_avg
Bettor Data Table
AccountID Name Address Status Email
1 John 123 Main St 1 John@gmail.com
2 Jane 124 Main St 1 Jane@gmail.com
3 Joe 125 Main St 1 Joe@gmail.com
4 Bob 126 Main St 0 Bob@gmail.com
5 Christine 127 Main St 1 Christine @gmail.com
Teams Data Table
TeamID Team Name Country City Team Roster Number of Players
1 Owls USA Miami Players 11
2 Bears USA Chicago BearsPlayers 11
3 Bulls USA Chicago BullsPlayers 11
Cubs USA Chicago CubsPlayers 11
5 White Sox USA Chicago WhiteSoxPlayers 11
6 Black Hawks USA Chicago BlackHawksPlayers 11

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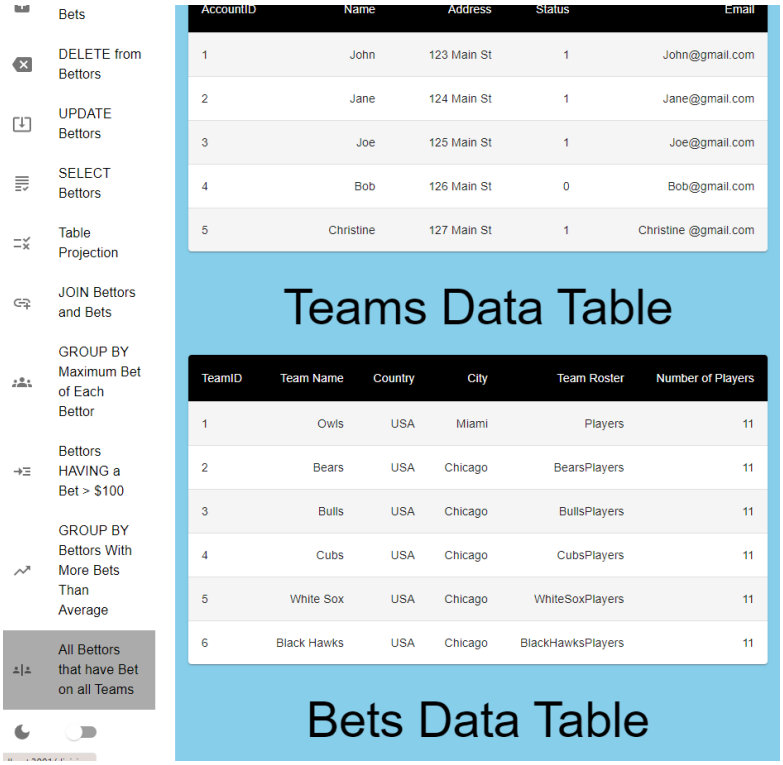
- Find all Bettors that have bet on all teams (Division)



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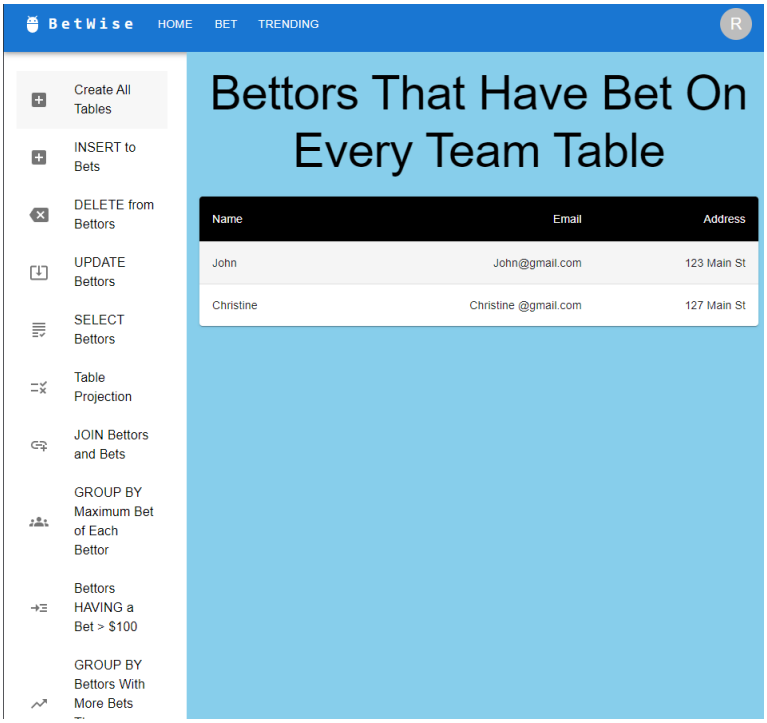

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