



## **CS353 - Database Systems**

### **Project Final Report**

#### **Group #17**

#### **BetterBettor**

Social Betting Platform

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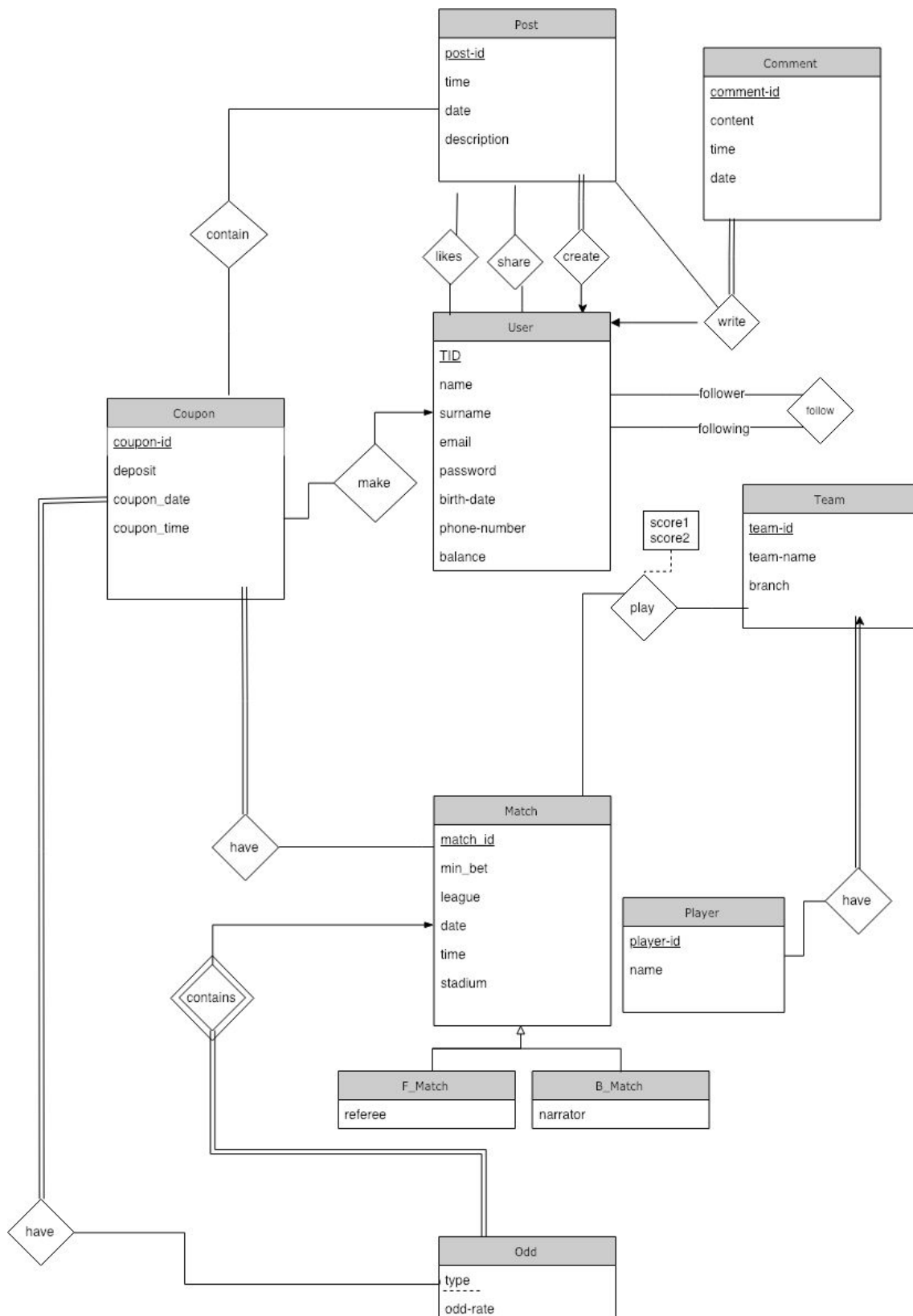
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# 1. Description of System

BetterBettor is a web-based application for betting football and basketball games in a platform. The platform is designed to be used by anyone who wants to bet football and basketball games and win some money. Users are able to register the platform after they fill out some information. These are name, surname, email address, password, Turkish ID number, date of birth and phone number. After the registration, they can login the platform using email address and password. On the other hand without registering the system, they are not able to enter to the system. Users will have 10 TL as a gift after the registration. Deposit and withdrawal of money can be done in profile section. Users can use the money to bet matches and win more. Users have also information about the balance, which is not visible to others. Moreover, the platform includes information about the upcoming matches. For example they can see the date, time, league, the odds for various possibility, and some statistics of the teams. Users are able to create a bet coupon containing matches and their odds the user chose, and the total odd. The bet coupon can be created only when some needs are met. There is a minimum number of matches users have to bet on a bet coupon and there is a minimum money to bet. Also the user cannot bet money more than he already has. Users can share the bet coupon and posts if they want. Other users can comment about themt, like them. Users can follow each other to learn what others bet for the upcoming matches. Shared posts contain date, time, number of likes and comment, contents of the comment itself. Comments have names above it. The user are able to search other user writing words. There will be results that contains the searched keyword. Users able to create some post in the newsfeed page. The users are able to the follower and followings of a specific user.

Other than regular users, we will have administrative part of the platform. The admin are able to see the reported post done the user. And he will decide whether the post is worthy of being reported or not. If this is the case, he will be able to ban the user from the system.

## 2. Final E/R Model



## 3. Final List of Tables

### 3.1 User

User(tid, name, surname, email, password, birth\_date, phone\_number, balance)

### 3.2 Post

Post(post\_id, tid, post\_date, post\_time, description)

- foreign key (tid) references User(tid)

### 3.3 Post\_Like

Post\_Like(post\_id, tid)

- foreign key (tid) references User(tid)
- foreign key (post\_id) references Post(post\_id)

### 3.4 Post\_Share

Post\_Share(post\_id, sharer\_tid, creator\_tid)

- foreign key (creator\_tid) references User (tid)
- foreign key (sharer\_tid) references User (tid)
- foreign key (post\_id) references Post(post\_id)

### 3.5 Coupon

Coupon(coupon\_id, creator\_tid, deposit, coupon\_time, coupon\_date)

- foreign key (creator\_tid) references User(tid)

### 3.6 Post\_Coupon

Post\_Coupon(post\_id, coupon-id)

- foreign key (post\_id) references Post(post\_id)
- foreign key (coupon\_id) references Coupon(coupon\_id)

### 3.7 gmatch

gmatch(match\_id, min\_bet, league, date, time, stadium)

### 3.8 Coupon\_Match

Coupon\_Match(match-id, coupon-id)

- foreign key (match\_id) references gmatch(match\_id)
- foreign key (coupon\_id) references Coupon(coupon\_id))

### 3.9 Team

Team(team\_id, team\_name, branch)

### 3.10 Player

Player\_Team(kit\_number, team\_id, name)

- foreign key (team\_id) references Team(team\_id)

### 3.11 Team\_Match

Team\_Match(match\_id, team-id1, team-id2, score1, score2)

- foreign key (match\_id) references gmatch(match\_id)
- foreign key (team\_id1) references Team (team\_id)
- foreign key (team\_id2) references Team (team\_id)

### 3.12 Football Match

F\_Match(match\_id, referee)

- foreign key (match\_id) references gmatch(match\_id)

### 3.13 Basketball Match

B\_Match(match\_id, narrator)

- foreign key (match\_id) references gmatch(match\_id)

### 3.14 Odd

Odd(match\_id, type, odd\_rate)

- foreign key (match\_id) references gmatch(match\_id)

### 3.15 Coupon\_Odd

Coupon\_Odd(coupon\_id, match\_id, type)

- foreign key (coupon\_id) references Coupon(match\_id)
- foreign key (match\_id) references gmatch(match\_id)

### 3.16 Comment\_Write

Comment\_Write(tid, comment\_id, post\_id, content)

- foreign key (tid) references User(tid)
- foreign key (post\_id) references Post(post\_id)

### 3.17 Follow

Follow(follower\_tid, followed\_tid)

- foreign key (follower\_tid) references User(tid),
- foreign key (followed\_tid) references User(tid)



## 4. Implementation Details

### 4.1 Technologies Used

We have implemented this project on three different layers: data layer, service layer and presentation layer. We have utilized different stacks of technologies to implement each layer and to achieve a successful communication between layers.

In the data layer, we have used standard MySQL, and MySQL Workbench for local testing. In order to create and populate the database we have used MariaDB database on dijkstra.

In the service layer we have used PHP. Utilizing PHP we have implemented all operations of the system. All the transitions between pages, error/confirmation messages, login/logout, signin and session information managements are done done with PHP. Most of PHP files contains HTML code since service layer is connected with presentation layer. Additionally, few Javascript functions embedded in HTML were utilized for transitional error or confirmation messages.

In the presentation layer have used HTML, CSS, JavaScript and Bootstrap for responsiveness.

### 4.2 Issues Faced

On the technical side we made good efforts to reduce any trouble we could face with the database, taking care carefully of the primary and foreign keys, and how the tables would communicate. Since the languages we used in our project is connected so well, when we try to add new things or change some features we may get some problems. Also it was a bit challenging to create the user interface. Sometimes when we add some new tables, whole page broke. Eventually we could work it out. Also, we try to create login page for admin but we could not manage to do it properly. It was a weird thing that some codes did their jobs after one second it did not work. Also, the technologies we used are indeed very detailed that requires very little arguments. This has been time consuming for us.

## 5. Advanced Database Features

### 5.1 Views

#### 5.1.1 showFootball

```
CREATE VIEW showFootball AS
```

```
SELECT DISTINCT league
```

```
FROM (gmatch NATURAL JOIN Team_Match, Team)
```

```
WHERE Team_Match.team_id1 = Team.team_id and Team_Match.branch = "Football";
```

#### 5.1.2 showBasketball

```
CREATE VIEW showBasketball AS
```

```
SELECT DISTINCT league
```

```
FROM (gmatch NATURAL JOIN Team_Match, Team)
```

```
WHERE Team_Match.team_id1 = Team.team_id and Team_Match.branch = "Basketball";
```

### 5.2 Reports

#### 5.2.1 Number of Followers of each User

```
SELECT name, surname, cnt
```

```
FROM User natural join (SELECT count(follower_tid) as cnt, followed_tid as tid FROM
```

```
Follow group by followed_tid) as T
```

```
ORDER BY cnt DESC, surname ASC, name ASC;
```

### 5.2.2 Number of Followers of each User

```
SELECT avg(odd_rate) as avg_odd, type
```

```
FROM Odd NATURAL JOIN Team_Match join gmatch using (match_id)
```

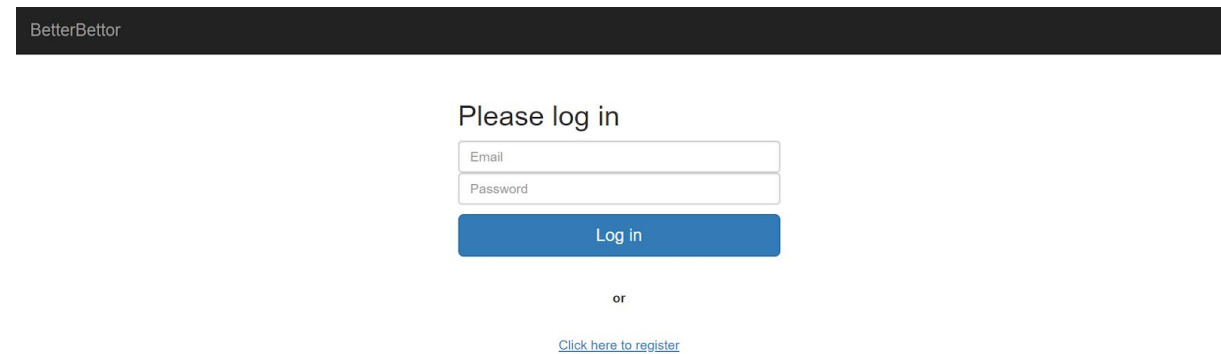
```
WHERE team_id2 = @team_id2 and league = "@league"
```

```
GROUP BY type;
```

## 6. User's Manual

### 6.1 Common Pages

#### 6.1.1 Login



The screenshot shows the login interface of the BetterBettor website. At the top, there is a dark header bar with the text "BetterBettor" in white. Below the header, the text "Please log in" is centered. Underneath, there are two input fields: "Email" and "Password". Below these fields is a blue button labeled "Log in". Below the button, the word "or" is centered. At the bottom, there is a blue link that says "Click here to register".

Figure 6.1.1: Login Page

When you enter the website you can login to the system by entering your username and password. If your variables are matched with the databases values, you are directed to the homepage screen which shows the football matches. If you do not have account by clicking "Click here to register" you will be directed to the register page.

## 6.1.2 How to Register

BetterBettor

### Register

Name
Surname
Email
Password
Turkish ID Number
Date of Birth (DD.MM.YYYY)
Phone Number (535 545 5555)

Register

Already have an account?  
[Click here to log in](#)

Figure 6.1.2: Register Page

If you do not have a BetterBettor account , you can register the system by entering your name, surname, email, password Turkish identification number, date of birth, phone number.

## 6.2 Main Features

### 6.2.1 Football Matches

BetterBettor Football Basketball

Profile Newsfeed Log Out

Welcome Nurefsan

#### Turkish Super League

ID	Time	Min Bet	Teams	FT1	FT2	FT0	A2.5	B2.5
101	19.45	2	Galatasaray - Fenerbahce	2.05	2.5	1.75	3.5	1.5

#### LaLiga

ID	Time	Min Bet	Teams	FT1	FT2	FT0	A2.5	B2.5
102	21.00	4	FC Barcelona - Real Madrid	2.05	2.5	1.75	3.5	1.5

#### Premier League

ID	Time	Min Bet	Teams	FT1	FT2	FT0	A2.5	B2.5
----	------	---------	-------	-----	-----	-----	------	------

#### Create Coupon

Clean Coupon

Match ID

Match ID

Odd Type

FT1

Add Match

Stake

TL Win:

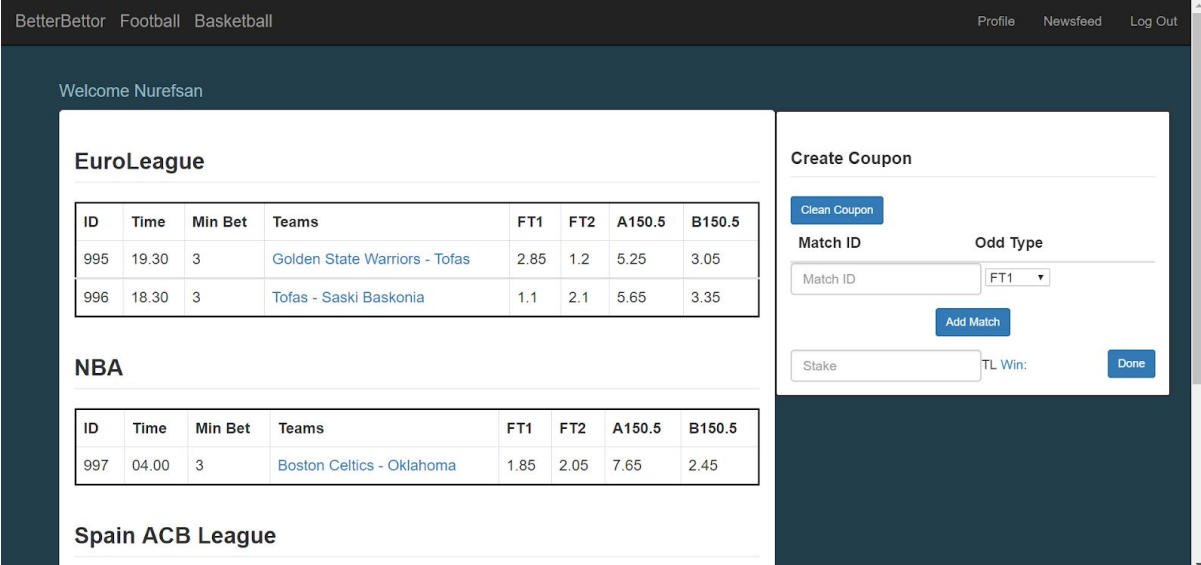
Done

Figure 6.2.1: Football Matches Page

This is our homepage screen. You can also access this page by clicking Football from the main bar of BetterBettor, you are able to see Football matches which can be bet on. Football matches are grouped by their league and are listed based on match-id, time, minimum bet

number, corresponding teams and odds respectively. You are able to add matches to your incomplete coupon by match-ids and selected odds. How to create coupon will be explained detailly in section 6.2.3.

## 6.2.2 Basketball Matches



BetterBettor Football Basketball Profile Newsfeed Log Out

Welcome Nurefsan

### EuroLeague

ID	Time	Min Bet	Teams	FT1	FT2	A150.5	B150.5
995	19.30	3	Golden State Warriors - Tofas	2.85	1.2	5.25	3.05
996	18.30	3	Tofas - Saski Baskonia	1.1	2.1	5.65	3.35

### NBA

ID	Time	Min Bet	Teams	FT1	FT2	A150.5	B150.5
997	04.00	3	Boston Celtics - Oklahoma	1.85	2.05	7.65	2.45

### Spain ACB League

### Create Coupon

Clean Coupon

Match ID Odd Type

Match ID FT1

Add Match

Stake TL Win: Done

Figure 6.2.2: Basketball Matches Page

When you click Basketball from the main bar of BetterBettor, you are able to see Basketball matches which can be bet on. Basketball matches are grouped by their league and are listed based on match-id, time, minimum bet number, corresponding teams and odds respectively. You are able to add matches to your incomplete coupon by match-ids and selected odds.

## 6.2.3 Football Match Details

BetterBettor

Football

Basketball

Profile

Newsfeed

Log Out

FC Barcelona

Kit	Name
1	Marc-Andre ter Stegen
3	Gerard Pique
5	Sergio Busquest
9	Luis Suarez
10	Lionel Messi

Some Statistics

Type	Average Odd
Draw	1.75
Win	2.05
Lose	2.5

\*These are the average odds of FC Barcelona at home matches in LaLiga

Referee

Raul Gonzales

Real Madrid

Kit	Name
4	Sergio Ramos
9	Karim Benzema
10	Luka Modric
12	Marcelo
25	Thibaut Courtois

Some Statistics

Type	Average Odd
Draw	1.75
Lose	2.05
Win	2.5

\*These are the average odds of Real Madrid at away matches in LaLiga

Figure 6.2.3: Football Match details Page

You can display detailed information about a football match by clicking on the match in the football matches pages which can be seen in Figure 6.2.1. Players of two teams playing match, referee and some statistics about each team can be seen in this page. These statistics are the average odds of a team at home/away matches in their league.

## 6.2.4 Basketball Match Details

BetterBettor

Football

Basketball

Profile

Newsfeed

Log Out

Boston Celtics

Kit	Name
7	Jaylen Brown
11	Kyrie Irving
13	Marcus Morris
26	Jabari Bird
46	Aron Baynes

Some Statistics

Type	Average Odd
Draw	1.85
Win	2.05
Lose	2.5

\*These are the average odds of Boston Celtics at home matches in NBA

Narrator

Kaan Kural

Oklahoma

Kit	Name
0	Russell Westbrook
3	Nerlens Noel
13	Paul George
17	Dennis Schroder
54	Patrick Patterson

Some Statistics

Type	Average Odd
Draw	1.85
Lose	2.05
Win	2.5

\*These are the average odds of Oklahoma at away matches in NBA

Figure 6.2.4: Basketball Match Details Page

You can display detailed information about a basketball match by clicking on the match in the basketball matches page which can be seen in Figure 6.2.2. Players of two teams playing match, narrator and some statistics about each team can be seen in this page. These statistics are the average odds of a team at home/away matches in their league.

### 6.2.5 How to Create Coupon

The screenshot shows a web interface titled "Create Coupon". At the top left is a blue button labeled "Clean Coupon". Below it is a table with two columns: "Match ID" and "Odd Type". The table contains three rows of data:

Match ID	Odd Type
101	FT0
104	FT2
106	FT1

Below the table is a form with a text input field labeled "Match ID" and a dropdown menu currently showing "FT1". To the right of the dropdown is a blue button labeled "Add Match". Below the "Add Match" button is another text input field containing the number "10". To the right of this field, the text "TL Win: 111.56 TL" is displayed. At the bottom right is a blue button labeled "Done".

Figure 6.2.5: Create Coupon

In the football or basketball pages you can create a coupon by entering the match ids which is available among the match information. You are able to add matches according to their minimum bet values. After you added the matches, you stake money and winning value will be calculated according to value you enter. When you press Done button the coupon you prepared will be added to your coupons and you are able to see your coupons in your profile as can be seen in Figure 6.3.6.

## 6.3 User's Profile



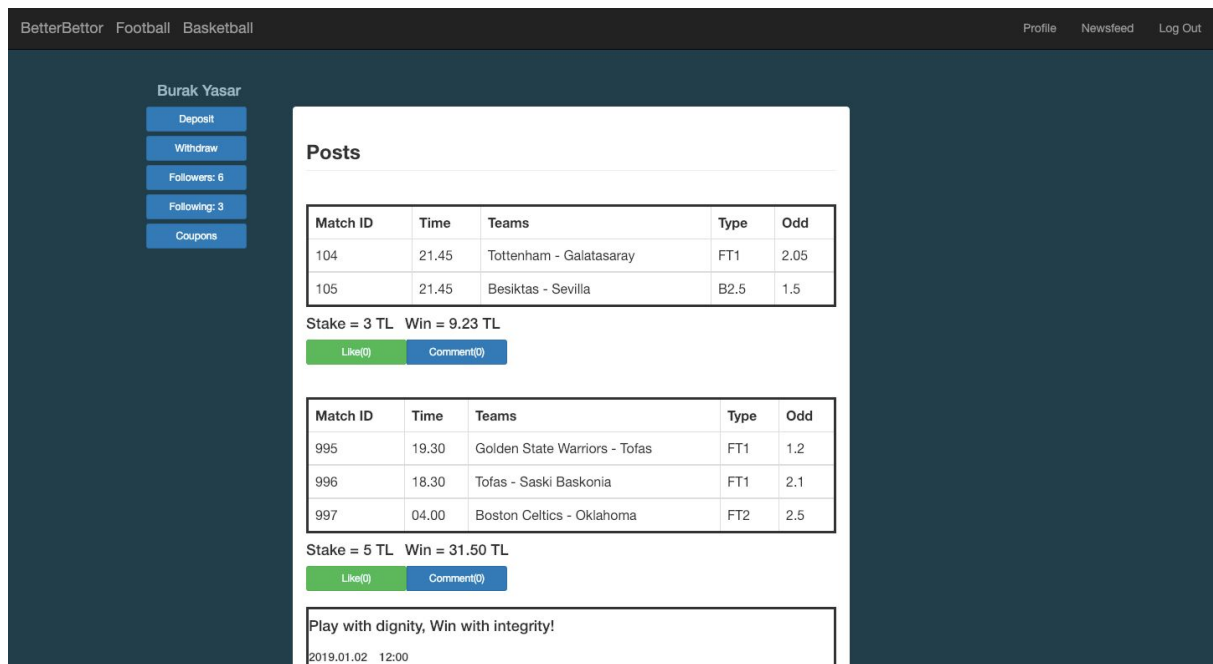


Figure 6.3: User's Profile Page

This is your profile. You can see your coupons and your posts in this page.

### 6.3.1 Deposit & Withdraw Money

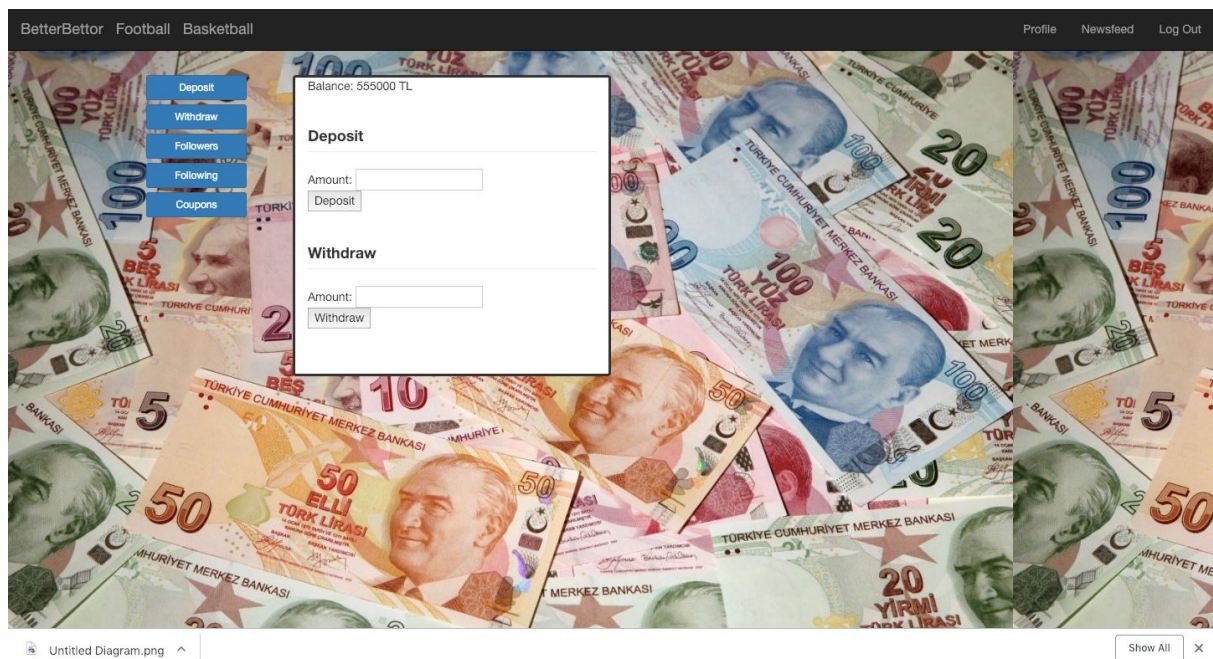


Figure 6.3.1: Deposit & Withdraw Money Page

When you click “Deposit” or “Withdraw” buttons in your profile, you will be directed to this page. You can manage the money in your balance in this page. When you enter an input amount and click Deposit or Withdraw buttons, your balance will change accordingly.

### 6.3.2 Display Followers

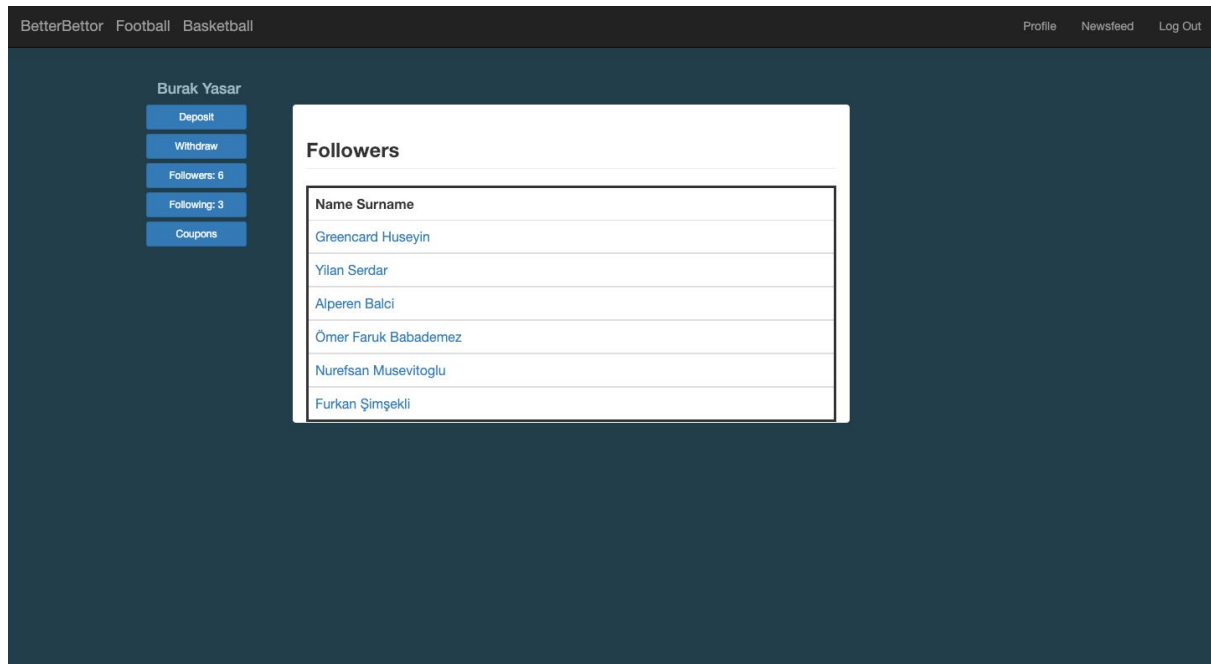


Figure 6.3.2: Followers Page

You can display your followers by clicking on the followers button on your profile.

### 6.3.3 Display Followings

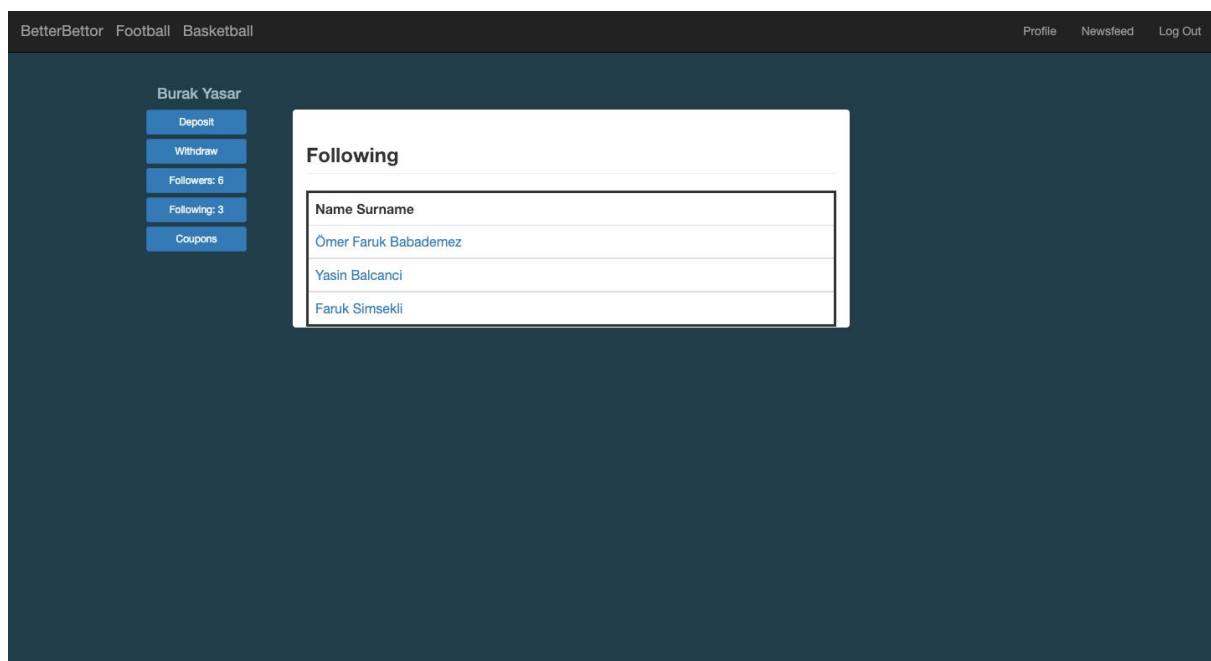


Figure 6.3.3: Following Page

You can display who you follow by clicking on the following button on your profile.

## 6.3.4 Display Coupons

The screenshot shows the 'Coupons' page for user Burak Yasar. The page has a dark blue sidebar with navigation buttons: Deposit, Withdraw, Followers: 6, Following: 3, and Coupons (highlighted). The main content area is titled 'Coupons' and includes a 'Share' link. It displays three sections of betting coupons, each with a table of match details and a summary of stake and win.

**Coupons** [Share](#)

Match ID	Time	Teams	Type	Odd
101	19.45	Galatasaray - Fenerbahce	B2.5	1.5
103	20.45	Manchester City - Chelsea	FT1	2.05
105	21.45	Besiktas - Sevilla	FT0	1.75

Stake = 11 TL Win = 59.19 TL

Match ID	Time	Teams	Type	Odd
104	21.45	Tottenham - Galatasaray	FT1	2.05
105	21.45	Besiktas - Sevilla	B2.5	1.5

Stake = 3 TL Win = 9.23 TL

Match ID	Time	Teams	Type	Odd
995	19.30	Golden State Warriors - Tofas	FT1	1.2
996	18.30	Tofas - Saski Baskonia	FT1	2.1
997	04.00	Boston Celtics - Oklahoma	FT2	2.5

Figure 6.3.6: Display Coupons Page

When you click Coupons button on your profile you are able to see all the coupons you have created.

## 6.4 Other User's Profile

### 6.4.1 View of Followed Person's Profile

Faruk Simsekli

Unfollow

Followers: 3

Following: 2

#### Posts

Match ID	Time	Teams	Type	Odd
101	19.45	Galatasaray - Fenerbahce	FT1	2.05
102	21.00	FC Barcelona - Real Madrid	A2.5	3.5

Stake = 10 TL Win = 71.75 TL

Like(0) Comment(0)

Gencler selamlar, bu kupon fixxxxxeed, kaçırmayın!

2019.01.02 12:09

Like(0) Comment(0)

Figure 6.4.1: View of Followed Person's Profile Page

When you click on a user that you follow you can see his/her profile as shown in the above figure.

### 6.4.2 View of Unfollowed Person's Profile

Furkan Şimşekli

Follow

Followers: 2

Following: 3

#### Posts

Barcelona will win UCL this year. I trust them..

2019.01.02 09:04

Like(0) Comment(0)

Figure 6.4.2: View of Unfollowed Person's Profile Page

When you click on a user that you unfollow you can see his/her profile as shown in the above figure.

### 6.4.3 View of Other Person's Followers

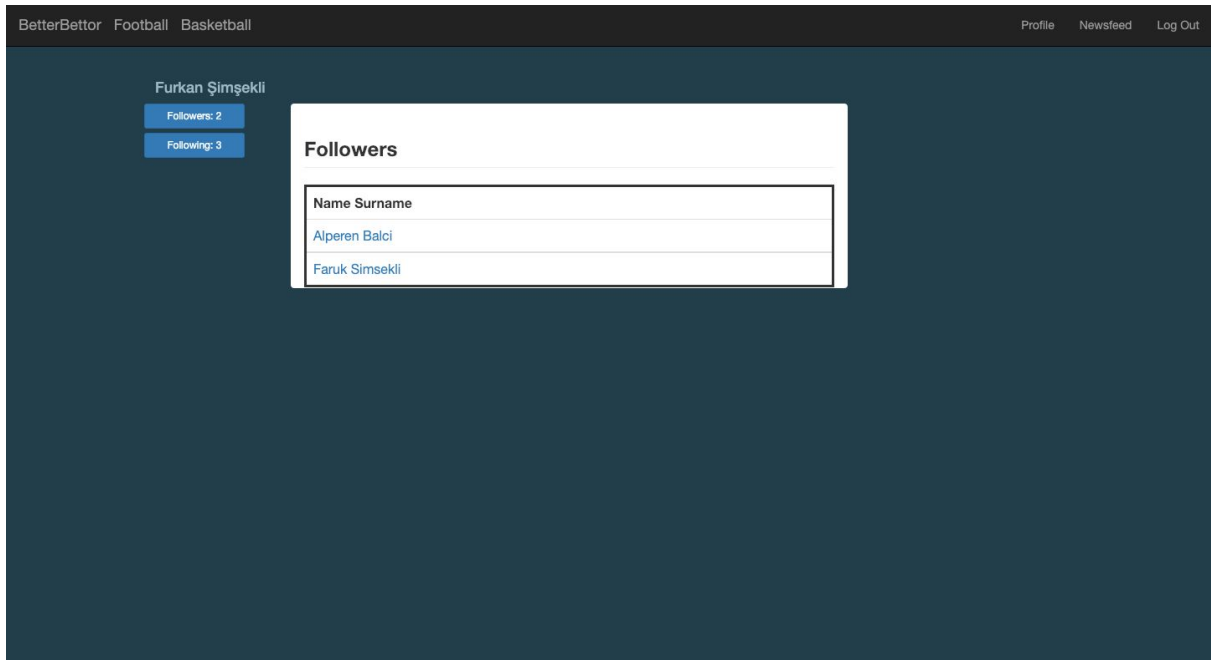


Figure 6.4.3: View of Other Person's Followers Page

When you are in another user's profile and click on Followers button you can see users that is following him/her as shown in the above figure.

### 6.4.3 View of Other Person's Following

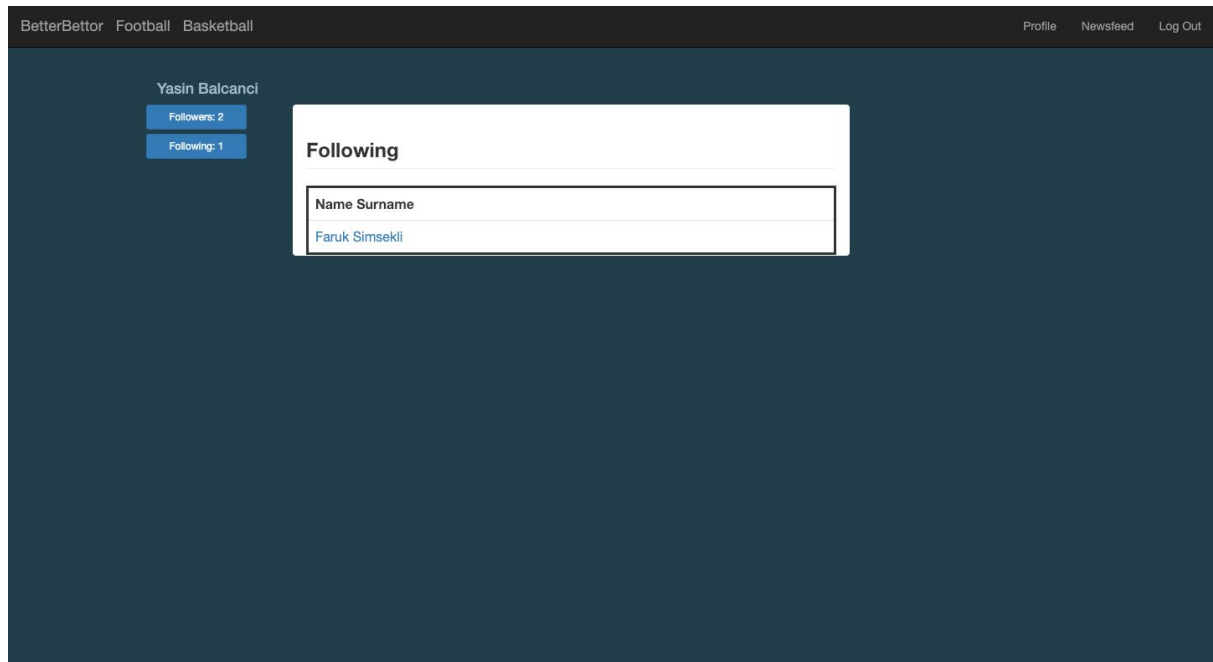


Figure 6.4.3: View of Other Person's Following Page

When you are in another user's profile and click on Following button you can see users that he/she is following as shown in the above figure.

## 6.5 Newsfeed

You are able to see posts of people that you follow in the newsfeed. You are able to like, comment on and share any post you want. You are also able to search people in the search bar by writing the name of the user and you will see the result as shown in Figure 6.5.2.

## 6.5.1 Posts of Followings

BetterBettor Football Basketball Profile Newsfeed Log Out

Burak Yasar

Deposit

Withdraw

Followers: 6

Following: 3

Coupons

Populars

Posts

What's your opinion?

Send

Faruk Simsekli

Match ID	Time	Teams	Type	Odd
995	19.30	Golden State Warriors - Tofas	FT1	1.2
996	18.30	Tofas - Saski Baskonia	FT1	2.1
997	04.00	Boston Celtics - Oklahoma	FT2	2.5

Stake = 5 TL Win = 31.50 TL

Like(0) Comment(0) Report

Burak Yasar

Match ID	Time	Teams	Type	Odd
995	19.30	Golden State Warriors - Tofas	FT1	1.2
996	18.30	Tofas - Saski Baskonia	FT1	2.1
997	04.00	Boston Celtics - Oklahoma	FT2	2.5

Stake = 5 TL Win = 31.50 TL

Like(0) Comment(0) Report

Figure 6.5.1: Posts of Followings Page

In the newsfeed page you can see the posts of users that you are following.

## 6.5.2 Search Result

BetterBettor Football Basketball Profile Newsfeed Log Out

Burak Yasar

Deposit

Withdraw

Followers: 6

Following: 3

Coupons

Populars

Results Found

Name Surname
Ömer Faruk Babademez
Faruk Yasin
Faruk Simsekli

Figure 6.5.2: Result of a Search Page

Result, when you search “faruk”. You are able to search for other users by typing their name or surname in the newsfeed page which can be seen in Figure 6.5.

### 6.5.3 Like / Unlike / Comment

The screenshot shows the 'BetterBettor' website with a dark blue header. The header contains 'Football' and 'Basketball' tabs, and a navigation bar with 'Profile', 'Newsfeed', and 'Log Out'. The main content area displays a table of matches with columns: Match ID, Time, Teams, Type, and Odd. The table lists three matches: 995 (Golden State Warriors - Tofas, FT1, 1.2), 996 (Tofas - Saski Baskonia, FT1, 2.1), and 997 (Boston Celtics - Oklahoma, FT2, 2.5). Below the table, there is a section for user interaction. It shows 'Stake = 5 TL' and 'Win = 31.50 TL'. There are three buttons: 'Like(0)' (green), 'Comment(0)' (blue), and 'Report' (orange). Below these buttons, the name 'Burak Yasar' is displayed. Another table of matches is shown, identical to the one above. Below this table, there is another section for user interaction, showing 'Stake = 5 TL' and 'Win = 31.50 TL'. There are three buttons: 'Unlike(1)' (red), 'Comment(1)' (blue), and 'Report' (orange). Below these buttons, the name 'Burak Yasar' is displayed. A text input field is shown with the placeholder text 'What's your opinion?'. Below the input field, there is a 'Send' button. At the bottom of the page, the name 'Yasin Balcanci' is displayed.

Match ID	Time	Teams	Type	Odd
995	19.30	Golden State Warriors - Tofas	FT1	1.2
996	18.30	Tofas - Saski Baskonia	FT1	2.1
997	04.00	Boston Celtics - Oklahoma	FT2	2.5

Stake = 5 TL Win = 31.50 TL

Like(0) Comment(0) Report

Burak Yasar

Match ID	Time	Teams	Type	Odd
995	19.30	Golden State Warriors - Tofas	FT1	1.2
996	18.30	Tofas - Saski Baskonia	FT1	2.1
997	04.00	Boston Celtics - Oklahoma	FT2	2.5

Stake = 5 TL Win = 31.50 TL

Unlike(1) Comment(1) Report

Burak Yasar

am not sure about Boston - Oklahoma

What's your opinion?

Send

Yasin Balcanci

Figure 6.5.3: Like Comment and Unlike

## 7. Website

<http://dijkstra.cs.bilkent.edu.tr/~n.musevitoglu/index.php>