**BİLKENT UNIVERSITY - ENGINEERING FACULTY**

**DEPARTMENT OF COMPUTER ENGINEERING**

# CS 353 – Group 08

# SPRING 2020

# FINAL REPORT

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# 1. Description of The System

The purpose of this project is to provide a useful platform for football clubs, scouting agencies and agents. In this website, clubs can ask for footballer to transfer by creating tasks and assigning them to scouting agencies. Scouting agencies assign tasks to their scouts and scouts create reports. These reports are delivered to clubs for evaluation. Clubs can compare footballers, read comments of scouts, and if they wish, they can create a transfer request. This request is delivered both to club that holds the footballer, and to the footballer's agent. The club and the agent confirm this offer, or send a counter offer. If they accept, transfer occurs.

# 2. Final E/R Diagram
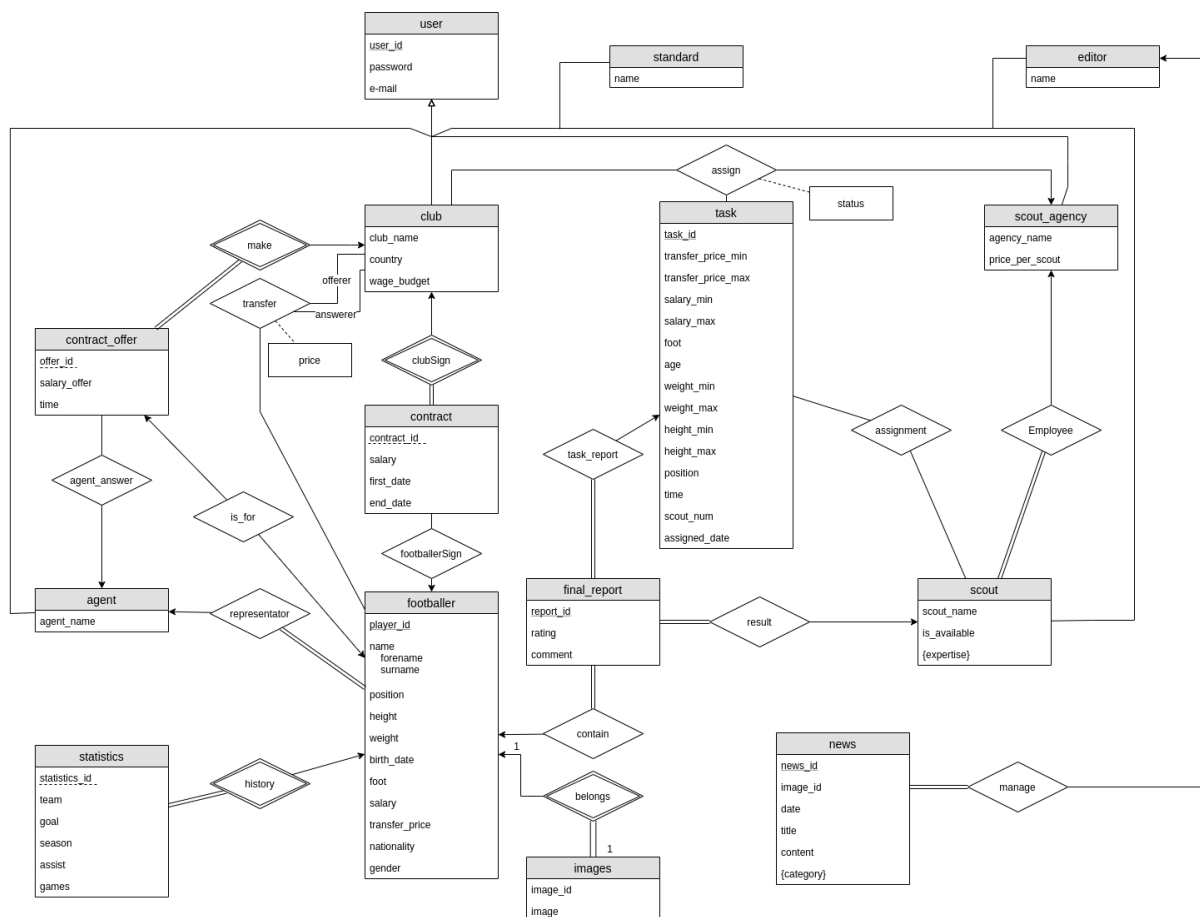
# 3.Final Table Schemas

- user (<u>user_id</u>, password, email)
  - ✓ **primary key:** user_id

- standard (<u>user_id</u>, name)

  - ✓ **primary_key:** user_id

  - ✓ **foreign_key:** user_id *(references user(user_id))*

- club (<u>user_id,</u> club_name, country, wage_budget)

  - ✓ **primary key:** user_id

  - ✓ **foreign key:** user_id *(references user(user_id))*

- scout_agency (<u>user_id,</u> agency_name, price_per_scout)

  - ✓ **primary key:** user_id

  - ✓ **foreign key:** user_id *(references user(user_id))*

- agent (<u>user_id</u>, agent_name)

  - ✓ **primary_key:** user_id

  - ✓ **foreign key:** user_id *(to user table)*

- editor (<u>user_id,</u> name)

  - ✓ **primary key:** user_id

  - ✓ **foreign key:** user_id *(references user(user_id))*

- task (<u>task_id,</u> transfer_price_min, transfer_price_max, salary_min, salary_max, foot, age, weight_min, weight_max, height_min, height_max, position, time, scout_num, assigned_date, gender)

  - ✓ **primary key:** task_id

- assign(task_id, club_id, agency_id, status)

  ✓ **primary key: (**task_id, club_id)

  ✓ **foreign key:** task_id *(references task(task_id))*, club_id *(references club(user_id))*,

- contract_offer (offer_id, club_id, agent_id, salary_offer, time, player_id)

  ✓ **primary_key:** (offer_id, club_id)

  ✓ **foreign key:** club_id *(references club(user_id))*, agent_id *(references agent(user_id))*

- contract (contract_id, club_id, player_id, salary, first_date, end_date)

  ✓ **primary_key:** (contract_id, club_id)

  ✓ **foreign_key:** club_id *(references club(user_id))*, player_id *(references football(player_id))*

- footballer (player_id, agent_id, forename, surname, position, height, weight, birth_date, foot, salary, transfer_price, nationality, image_link, club_name)

  ✓ **primary_key:** player_id

  ✓ **foreign_key:** agent_id *(references football(player_id))*

- statistics (statistics_id, player_id, team, goal, season, assist, games)

  ✓ **primary_key:** (statistics_id, player_id)

  ✓ **foreign key:** player_id *(references football(player_id))*

- final_report (report_id, player_id, task_id, scout_id, rating, comment)

  ✓ **primary_key:** report_id

  ✓ **candidate keys:** report_id

  ✓ **foreign_key:** player_id *(references football(player_id))*, task_id *(references task(task_id))*, scout_id *(references scout(user_id))*

- news (<u>news_id</u>, editor_id, date, title, content, image_id)

  - ✓ **primary_key:** news_id

  - ✓ **foreign_key:** editor_id *(to editor table)*


- scout (<u>user_id</u>, agency_id, scout_name, scout_surname, is_available)

  - ✓ **primary_key:** user_id

  - ✓ **foreign_key:** agency_id *(references scout_agency(user_id)),* task_id *(references task(task_id))*, user_id *(references user(user_id))*

- assignment (<u>scout_id, task_id</u>)

  - ✓ **primary_key:** (scout_id, task_id)

  - ✓ **foreign_key:** scout_id *(references scout(user_id)),* task_id *(references task(task_id))*

- scout_expertise (<u>scout_id, expertise</u>)

  - ✓ **primary_key:** (scout_id, expertise)

  - ✓ **foreign_key:** scout_id *(references scout(user_id))*

- transfer (<u>offerer_club_id,</u> <u>answerer_club_id</u>, <u>player_id</u>, price)

  - ✓ **primary_key:** (offerer_club_id, answerer_club_id, player_id)

  - ✓ **foreign_key:** offerer_club_id *(references club(user_id))*, answerer_club_id *(references club(user_id))*, player_id *(references footballer(player_id))*

# 4.Implementation Details

## 4.1. Technologies

For the front end development of the project we have used HTML with Javascript code. To modify the formatting of the components we have used CSS files.We have also used 'EJS' as templating language which has the same syntax with HTML, but also let us send data from server side to client side, to front-end.  For the server side development of the project, we have used Node.js with Express. Express is a web application framework which helped us organizing routes, views, and HTTP requests.  We have used relational database MYSQL as our database.

## 4.2. Problems

At the beginning of the project, it was very hard to decide which language to use, or which environment to prefer. We had had no experience on web development and we did not know even how to start. We tried to ask some experienced people, which are students who develop web application previously, did some research and followed the way we think the best. Along the way, we have learnt what Express is, what 'EJS' template language is and how to use them. This was also our first experience with Javascript language.

## 4.3. Task Sharing

- Tolga was responsible for login, sign up functionalities and additional functional requirement which is 'news' for our application.
- Enes was responsible for dealing with scouting requests from clubs, which was our first topic specific functionality.
- Aybüke was responsible for assigning scouts for tasks and reporting back to clubs, which was our second topic specific functionality.

# 5. Advanced Database Features Used

## 5.1. View

CREATE VIEW IF NOT EXISTS uncompleted_reports AS

SELECT image, footballer.forename, assignment.scout_id,

       final_report.rating, final_report.comment, report_id, footballer.image_link

       footballer.position, footballer.nationality, footballer.club_name

FROM footballer, final_report, assignment WHERE

 final_report.report_id IN  (SELECT report_id FROM assignment, final_report

                   WHERE   assignment.status='incomplete' AND

                       final_report.task_id=assignment.task_id) AND

                       final_report.scout_id=assignment.scout_id AND

                       footballer.image_id=images.id AND footballer.player_id

                       = final_report.player_id

GROUP BY final_report.report_id

**Explanation:** In the report page, a scout can see his/her uncompleted reports and edit them. This page contains information from footballer table and report table. By creating a view, we do not have to reach unnecessary information from footballer table which we do not use and we can bring attributes from final_report and footballer tables together and reach them easily later.

## 5.2. Reports

**Report 1:**

SELECT * FROM news INNER JOIN editor on news.editor_id = editor.user_id ORDER BY date DESC;

**Explanation:** In this report, we used join operation to retrieve news that an editor has added. An editor can see and edit news that s/he has previously posted in the order of which they are posted.

**Report 2:**

SELECT club_name, task.id, height_max, weight_max, age_max, position, time, scout_num,

     foot, salary_max, transfer_price_min, assignment.status

FROM task, assignment, assign, club

WHERE task.id=assignment.task_id AND

     assign.club_id=club.user_id AND

     assign.task_id=task.id AND assignment.scout_id= @user_id

ORDER BY assigned_date;

**Explanation:** With this report, we can reach tasks of a club and order them by date.

**Report 3:**

SELECT * FROM task, assign, club WHERE

     task.id=assign.task_id AND

     agency_id=@user_id AND club.user_id=assign.club_id

ORDER BY assigned_date;

**Explanation:** With this report, we can reach all tasks of a scout and order them by date.

## 5.2. Secondary Indices

Secondary indices increase the speed of table lookup operation. Once we define an index, then we can easily retrieve rows with same attribute even if we recognize it while coding. In our project, we thought that we can use this speciality to fast retrieve tasks with the same agency. It was a wrong approach, because foreign keys are already indexed. There was no effect of our secondary index on our database.

# 6. User's Manual
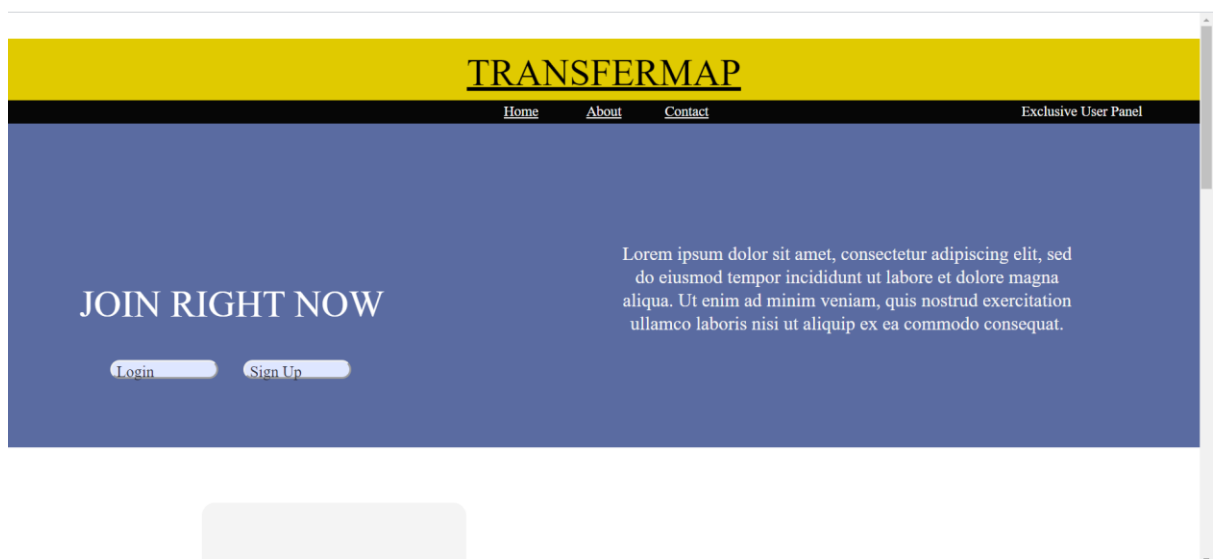


This is the top of the main page. Here, users can go to SignUp page using SignUp button and LoginPage using login button. The three links at the top are to navigate through the main pages which are the Home page (we are in that page), About page which consists of the information about the website, and Contact page which goes to the ContactUs page. At right, there is Exclusive User Panel, which is a drop down menu having exclusive links for each user type.

Are you,
A Club Official?
A Footballer Agent?
A Scouting Agency?

Learn about us and create an account right
now to benefit from exclusive features.

About Us     Join Now

## Latest Transfer News

See all news

Default Image

### CURRENT NEWS

CLUBS START TO USE SCOUTING AGENCIES.

Default Image

### TRANSFER NEWS

FENERBAHCE HAS TRANSFERRED FOOTBALLERS!!

Below the Login and SignUp buttons in Home page, there is the latest news about transfer market. Using the See all news button, users can go to the News page which display all the news.

- user id: 24
- name:
- email: editor@gmail.com

Edit Info

logout

This is the AccountPage, which is for users to log out the current account or to edit their account details.

All news will be seen here

Add New Post

# CURRENT NEWS

**Tolga Ayan**

scouting

CLUBS START TO USE SCOUTING AGENCIES.

Read All

# TRANSFER NEWS

**Tolga Ayan**

transfer

FENERBAHCE HAS TRANSFERRED FOOTBALLERS!!

Read All

This is the News page, which shows all the news. Here, users can go to the details of the news by clicking Read All button of the corresponding news.

# Add Post

Title

Category

Add Post

# CURRENT NEWS

## Tolga Ayan

scouting

CLUBS START TO USE SCOUTING AGENCIES.

Modify

This is the modifyNews page, which is exclusive for editor users. Here, the user can add new post, see all their previous news and modify them.

password:

editor

email:

editor@gmail.com

name:

Tolga Ayan

Save

Delete Account

This page is to change account details.

# Club

Club Name

password

password again

email

county

signup

# Agency

agency name

password

password again

email

signup

# Agent

agent name

password

password again

email

signup

# Standard

user name

password

password again

email

signup

This is the SignUp page. Different type of users can sign up the website using this page.

This is the footballers page which is for scout to see the full list of footballers and filter them so that the scout can add footballers to his/her report.

# Tasks Assigned

Club: Real Madrid                                                                Status: incomplete

Height: 180
Weight: 85
Age: 30
Position: goalkeeper
Time: 14

Preferred foot: left
Salary: 900000
Transfer Price: 1

**Show Report**

Club: Real Madrid                                                                Status: complete

Height: 195
Weight: 90
Age: 26
Position: goalkeeper
Time: 60

Preferred foot: left
Salary: 200000
Transfer Price: 4

**Show Report**

This is the tasks page. Here the clubs can see their previous tasks assigned to the scouting agencies. They can also show the reports of these tasks. There is a little text at the right corner of the each task, which shows the status of the task. The status can be approved, pending or declined depending on the response of the scouting agency.

# Task Reports

Name: Harry

Rating: 0

Position: leftwinger

Nationality: England

Club: Tottenham Hotspur

Comment:

wfwqwglqhgewgewogwe

Save Comment    Remove

Name: Cristiano

Rating: 0

Position: leftwinger

Nationality: Portugal

This is the tasks pages for scouts to see and modify the footballers in their report.

# Task Reports

Name: Sergio

Position: stoper

Nationality: Brazil

Club: Real Madrid

Comment:

Rating: 6

Good enough!

Name: Abdulkadir

Position: rightwinge

Nationality: Turkey

Club: Trabzonspor

Comment:

Rating: 4

I cannot advise this footballer.

This is the report page for clubs. Clubs can see the report details of their tasks.

# Tasks Assigned



**Club: FC Barcelona**                                              Status: noagency

Height: 190
Weight: 95
Age: 30
Position: leftwinger
Time: 30

Preferred foot: right
Salary: 1000000
Transfer Price: 5

[ Accept ]        [ Decline ]

**Club: Real Madrid**                                              Status: accepted

Height: 180
Weight: 85
Age: 30
Position: goalkeeper
Time: 14

Preferred foot: left
Salary: 900000
Transfer Price: 1

[ Manage ]

This is the tasks page for scout agencies. Here, the scouts can see their tasks. They can accept, decline or manage the accepted tasks.



# TRANSFERMAP

Home    About    Contact                                    Exclusive User Panel

## Scouting Agency List

Gender:

Height:

Weight:

Age:

Position:

Time for task:

Name:
Price Per Scout(per month):
Available Scout Number:
[ Assign Task ]

Name:
Price Per Scout(per month):

This is the create task page. Using that page, clubs can create tasks and assign them to scout agencies.

Here you can see that some details of the tasks are filled. After filling all of the fields, the user can submit the task and then choose a scout agency from the left panel.

# 6. Website

Our proposal, design, and final reports can be accessed from

https://aybukeertekin.github.io/Bilkent_CS353_Database_Project/