| **CS102** | **Fall 2022/23** | Project Group | 1I |
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| Instructor: | **Uğur Güdükbay** |
| Assistant: | **Osama Zafar** |

| **Criteria** | **TA/Grader** | **Instructor** |
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| Presentation |  |  |
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| Overall |  |  |

**~**Bilkent Halısaha **~**

The GOATS

**Kaan AYDENİZ**

**Erdem AYDIN**

**Oğuzhan GENÇ**

**Furkan Emre KOLUKIRIK**

**Hasan Kutluhan ŞIPKA**

| **Requirements Report**  **17 October 2022** |
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# **Introduction**

Bilkent Halısaha is a mobile application that facilitates Bilkent University students to organize football matches and find players for these matches easier. Creating football matches with specific locations and dates; finding existing matches is possible with Bilkent Halısaha. The person who creates the match can accept the join requests which he selects. It also enables participants to grade their former teammates so that people who did not attend the organized match will be penalized and those who have the greatest rating point will receive a man of the match award. In addition, there will be user profiles that show its former matches, ratings, awards, penalties and positions like goalkeeper, midfielder, defender, etc. Finally, every user has to sign up with their Bilkent emails and there will be a verification process to prevent fake accounts and non-Bilkent university students’ accounts.

# **Details**

## Problems & Solutions

We realize some hardships during finding and organizing football matches at Bilkent. Problems are listed below:

1. People set up WhatsApp groups to organize and attend football matches which leads to too many groups that are not connected to each other. We want to solve this problem by offering only one platform that meets all the needs.
2. After a match has been arranged, some do not attend the matches; therefore, one team has to play one person less. Our solution is to penalize the person who did not attend the match which prevents him from attending the next matches. The penalization system will work according to the other players' report. The number of the missed match of a player will be displayed on the profile page and the rating of the player who missed the match will be 0. Moreover, players can cancel their attendance to match before 2 hours to the match time.
3. In WhatsApp groups, the levels of players are not known by others. Because of that, some matches may become unbalanced. We will provide a player rating that lets people see the level of other players. The rating of a player is calculated according to the other players voting. The average rating will be shown on the profile page.

## Technologies

1. Android Studio: Since our project is a mobile application, we will build our app with Android Studio which is the most used platform for android development.
2. Java Socket Programming: “The term socket programming refers to writing programs that execute across multiple computers in which the devices are all connected to each other using a network” (Baeldung). Since our project will have a server, we will use java socket programming to communicate between the server and app.
3. Java Simple Mail: “Simple Java Mail is a mailing library with a super clean API. It's the easiest to use (Java) mailing library in the world for sending emails using SMTP” (“Simple Java Mail: Simple API, Complex Emails”). In our application, we will send emails to validate user Bilkent's emails.
4. Firebase: In Firebase, there are many useful features. In our project, we will use:
5. Realtime Database to store football match information.
6. Cloud Storage to store images such as profile pictures.
7. Authentication to make user logins and verify user emails.
8. App Check to secure our app.

## Existing projects & What’s new in our project

The existing project are listed below:

1. Adam Eksik - Halı Saha Oyuncusu (3)
2. Halısahavar (4)
3. TopTop (5)

These applications were built to solve the problem like our project. However, our project will have a more simple and efficient interface and it will be specific to Bilkent University students thanks to our email verification system. Thus, the users will be from only Bilkent.

## 2.4 Target Audience

We offer our application to those who suffer from finding football matches and finding people for football matches. Also, people who want to organize practice matches for the tournaments can also benefit from Bilkent Halısaha app.

# **Summary & Conclusions**

To sum up, our project originated to solve the problems related to organizing and attending football matches. There have already been some applications for this problem; but, our app differs from them in email verification and simple user interface. We will use various technologies such as Android Studio and Firebase to develop our app. Plainly, our target audience is Bilkent students.

References

1) Baeldung. “A Guide to Java Sockets.” *Baeldung*, 19 Oct. 2022, https://www.baeldung.com/a-guide-to-java-sockets.

2) “Simple Java Mail: Simple API, Complex Emails.” *Simple Java Mail - About*, https://www.simplejavamail.org/.

3) <https://play.google.com/store/apps/details?id=adam.eksik>

4) <https://play.google.com/store/apps/details?id=com.halisahavarapp.halisahavar>

5) <https://play.google.com/store/apps/details?id=com.loodyscores.toptop>