



An-Najah National University

Faculty of Engineering & Information Technology

Palestine Sports

by

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Disclaimer

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Abstract

Sports in Palestine confront a tremendous challenge due to a lack of community support and popularity among the majority of people, which limits teams from receiving adequate funding to advance and succeed.

our project is a way for sports in Palestine to overcome this challenge, By giving these national teams a space to establish themselves using the various features of our website and mobile application, such as the management and display of competitions between teams, the ability to book tickets to watch these competitions, the blog section for people to share posts and comments, the shop where fans can buy their Favorite teams sport uniforms, and a lot more features,

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1 Introduction

1.1 Problem

Knowing that Palestine will host Asia Cup Qualifiers in basketball in two years, we attempted to solve the problem of a lack of a website for reservations and event management through this project.

Also the need for a place like a fans club for fans of sports gave us the idea of creating a web site and an application for such needs.

1.2 Objectives

Our project objective is to build a website and mobile application for people who are fans of sports and want a way to keep up with sporting events.

Also for businesses that specialize in sports, whether it's by having fields or stadiums that host competitions and matches, or wanting to have a community website for sports fans to make it easier for fans to know match times, reserve seats for matches, watch those matches, and stay up to date on sport news timelines.

Based on that the website and application contains the following:

-Matches browsing:

where we present lists of upcoming, ongoing, and finished matches, where the users can watch videos of finished matches, and book tickets for the upcoming ones.

-Statistics:

where users can view statistics of teams such as team points, goals, standing, etc..

-Shop:

where users can order products related to their favorite teams, such as t-shirts, shoes, figures, etc.

-Predictions:

a cool feature where users can request an AI to predict the results of a match between two teams, where the AI uses previously stored matches as training data to predict the result of an upcoming match.

-Users Blogs:

a place where users can post pictures and comment about the matches, teams, and players, and argue by using the comment section for those posts.

1.3 Scope of the work

The scope of our project is sports fans, as well as establishments with fields or stadiums that host competitions and events for various sports teams.

1.4 Importance of the work

This project can help the teams stay updated with the upcoming events, attract new players and make it easy for them to contact the teams, or help fans stay in touch and get updated on the latest news.

Most importantly, it can help the sports team market themselves better by having an online presence.

Also can provide teams or establishments that organize events, sell tickets for the matches online, and sell other products through the shop that is included in the application.

1.5 Organization of the report

The following chapter (Constraints and prior work) will concentrate on the primary issues that we ran into while working on this project and will highlight earlier work that assisted in the development of this project.

The (Literature Review) chapter follows, introducing and Describes some of the related work and demonstrates how it varies from this work.

Then, in the fourth chapter (Methodology), we will go into more depth about how we built this project. The methods utilized to gather the required data, the technology we employed, and finally the layout and functionality of the application and website.

The chapter that follows is (Future work), which includes the ideas that we aspire to add to our project in future.

The next chapter is (Conclusion and Recommendations) which will summarise the ideas of projects and will also contain some recommendations related to our work.

The last chapter is (References)

2 Constraints and earlier work

2.1 Constraints

- Limited Time:
Under the strain of exams, course projects, and work, this project was finished. Additionally, we had to acquire new programming languages and techniques that we had not previously encountered, which took a lot of time.

items associated with this field, after which we had to put what we had learnt to use. It is time-consuming, labor-intensive, and occasionally stressful.
- Data collection:
The main issue that our project seeks to address is the absence of a website or application that allows us to locate the teams of various sports in Palestine. As a result, gathering data for our project was a challenge we encountered. We asked people who had information about sports, searched social media, and even asked players who participated in sport events that our website was intended to manage. However, even with these efforts, there was still insufficient data because sports in Palestine tend to be local.
- The constrains of occupation:
More mentioned in this regard in literature review later on

2.2 Standards/ Codes

- Receptivity
The user interface is made to adapt to various screen sizes.
- Convenient
The application and website both have nice designs and color schemes. -usability:
React allows us to reuse a lot of parts in order to support several ideas.
- The program is compatible with both Android and iOS mobile devices as well as web browsers.
- This project focused on basketball in Palestine although it can be direct for other sports, but Due to the difficulty in gathering the necessary data and the time constraints we only prepared data for basketball

2.3 Earlier Work

Our main source of support for this project came from the knowledge we gained in courses on software, java script, web programming, and algorithms. But we also went through a considerable amount of self-learning, picking up new languages and frameworks like nodejs and react that we needed. besides reading its documentation and learning how to utilize such technologies, as well as looking about other topics like video streaming, payments, mongo data base, MVC design, and express.

3 Literature review

3.1 Professional sports teams on the Web

Professional sports organizations around the world have become increasingly sophisticated in their use of the Internet and the Web over the past ten years to better connect their sports and businesses to fans and the general public with the aim of disseminating team-related information, fostering fandom and team reputation, and enhancing the fan base.

commercial aspect of the enterprise. Although professional sports teams' Web-based entry has grown to be a multi billion-dollar industry, there aren't many studies that seek to examine and assess the effectiveness of this crucial component of the professional sports business model from an information management standpoint.

This study[1] apply different frame works as a methodology to analyze, evaluate, and rank the websites of the best European football (soccer) teams. However, we find that there is a lot of opportunity for development on the side of the European team websites when we contrast them with a few reference sites from North American big leagues. The study also demonstrates how sports information artifacts can be methodically examined, rated, and contrasted. In a broader sense, we show how the information viewpoint may be an essential component of sport management and a fresh theoretical lens.

3.2 The idea behind the shop

Sport groups are now able to effectively sell their products through Internet websites. The goal of this study was to investigate the theoretical links between significant factors influencing how people consume sports

content online, such as how satisfied and loyal users are to particular sports websites. Additionally, the role of e-satisfaction in mediating the relationship between e-loyalty and website quality was investigated. The results of data analyses utilizing structural equation model testing showed that when sports fans formed favorable perceptions and were satisfied with the website, loyalty to the website of a sport team was more likely to occur. The findings also indicated that e-loyalty is a key mediating factor between the quality of sport websites and consumer e-satisfaction.[2]

3.3 The constraints of occupation

Depending on a study[3] That examines how sport, the state, and resistance intersect in the context of military occupation and the fight for independence. It examines how sport may be used as an instrument of community resistance and state-building based on a year of fieldwork in the West Bank's local sports groups. Sport and youth centers played a significant role in social and political mobilization during the decades before the foundation of the Palestinian Authority in 1994 and actively contributed to the endeavor on a national level to create institutions free of Israeli occupation. State-building was institutionalized and delegated to the newly formed core institutions of the Palestinian Authority after the Oslo Accords.

The study examines this change from the viewpoint of neighborhood clubs, which changed from being active participants in state-building through sport to being targets of the Palestinian Authority's efforts to strengthen its state-like authority. It is important to distinguish between a bottom-up and a top-down approach to state-building through sport in order to comprehend how local sport activists interpreted these shifts. By examining an example of state-building through sport in the context of military occupation, the paper seeks to contribute to the continuing discussions on the use of sport in the service of nation states.

4 Methodology

4.1 Overview

we divide the project as several tasks, worked in parallel, completed the parts and then test and linked them together.

Our project is directed for:

-Sport organisations:

which our project enables them to organise matches between their teams and other teams.

Offer products like sport teams uniforms for fans to buy,

Have the ability to upload recorded matches to the application for users to watch and keep up with the events.

-Users (fans):

Who can browse matches.

Book tickets to watch matches organised by teams organisations.

Buy related items from the shop.

Watch matches.

communicate with other users and the organizations themselves in the blog section.

4.2 Technologies

4.2.1 Database

MongoDB is an open-source document database built on a horizontal scale-out architecture that uses a flexible schema for storing data. Founded in 2007, MongoDB has a worldwide following in the developer community.

Instead of storing data in tables of rows or columns like SQL databases, each record in a MongoDB database is a document described in BSON, a binary representation of the data. Applications can then retrieve this information in a JSON format.

Here's a simple JSON document describing a historical figure.

```
{
  "_id": 1,
  "name": {
    "first": "Ada",
    "last": "Lovelace"
  },
  "title": "The First Programmer",
  "interests": ["mathematics", "programming"]
}
```

Figure 1: JSON document

Why we used mongo database in our project:

- Document Model:
The document data model is a powerful way to store and retrieve data in any modern programming language, allowing developers to move quickly.
- Deployment Options:
MongoDB is available in any major public cloud (such as AWS, Azure, and Google Cloud) through MongoDB Atlas, in large data centers through the Enterprise Advanced edition, or free through the open-source Community edition.
- Get Started Quickly:
MongoDB has a great user experience for developers, who can install MongoDB and start writing code immediately.
- Fully Scalable:
MongoDB's horizontal, scale-out architecture can support huge volumes of both data and traffic.

- Find Community:
MongoDB has developed a large and mature platform ecosystem. It has a worldwide community of developers and consultants, making it easy to get help. It also has an enterprise-grade support offering.

4.2.2 User Interface Design

ReactJS:

React is considered a flexible free open-source front-end JavaScript library that is used to Develop fast and interactive web applications [4], The library was made by Meta (Facebook Formerly) and has a vast community and a very large collection of libraries and reusable Components. We decided to use React for many different reasons, including:

1. React offers a clean and easy to understand and utilize syntax that's called JSX Syntax. It is very similar to HTML but the main idea is that it allows the developer To inject JavaScript code inside the front-end design, which allows for more freedom over-controlling the component.
2. Reusable components are one of React's strongest features. You don't need to recreate A layout you have made earlier, instead, you only need to create it once and import It everywhere else where it is needed.
3. A vast collection of strictly free libraries This one other important feature of React that allows the developers to use the fruits of other experienced developers by utilizing their libraries. This doesn't necessarily mean it is a good thing, but it serves the purpose of completing projects as quickly as possible.

React-Bootstrap:

Bootstrap JavaScript is replaced by React-Bootstrap. Each component has been built from scratch as a true React component, without unneeded dependencies like jQuery. As one of the oldest React libraries, React-Bootstrap has evolved and evolved alongside React, making it an excellent choice as the basis for our user interface. Built with compatibility in mind, we embrace our bootstrap core and strive to be compatible with the world's largest UI ecosystem. By relying entirely on the Bootstrap stylesheet, React-Bootstrap just works with the thousands of Bootstrap themes you already love [5].

SASS:

Syntactically Awesome Stylesheet[6], or Sass, is a CSS extension. is a CSS pre-processor that is fully compatible with all versions of CSS, saves time by cutting down on CSS repetition, was created in 2006 by Natalie Weizenbaum and Hampton Catlin, and is available for free download and usage.

4.2.3 BackEnd

Node JS:

Node JS is a fast JavaScript run time environment that we use to build server-side applications[7], but it does not know how to perform serving files, handling requests, and handling HTTP methods, so this is where express js comes in.

Express JS is a Node.js framework designed to build API's web applications cross-platform mobile apps quickly and make Node.js easy.

Express:

Express is a Node.js web application framework that provides broad features for building web and mobile applications[8]. It is used to build single-page, multi-page, and hybrid web applications.

It's a layer built on top of Node.js that helps manage servers and routes.

4.3 The mobile application

for turning our website into a mobile application we use PWA which is a website with all the benefits of an app. PWAs give you a faster, more reliable, and more engaging version of your website or eCommerce store[9].

And here is why we used PWA:

1. **ON PERFORMANCE:**

First impressions matter! And the first experience your visitors get with your site is neither design nor content. It's the page-load time.

2. **ON ACCESSIBILITY:**

PWA fast load times support accessibility for companies that operate in emerging markets or need to provide users consistent site access at all times.

3. **USER EXPERIENCE:**

Historically, native apps have outperformed mobile websites in terms of user engagement. Progressive Web Apps can close that gap with features previously reserved for native apps, like no reload when switching between pages.

4.4 Application And Website Design

4.4.1 Sign up

Here, users can sign up for the site. There are two kinds of users: normal users and administrators. the admin privileges can be given by us the providers of this product.

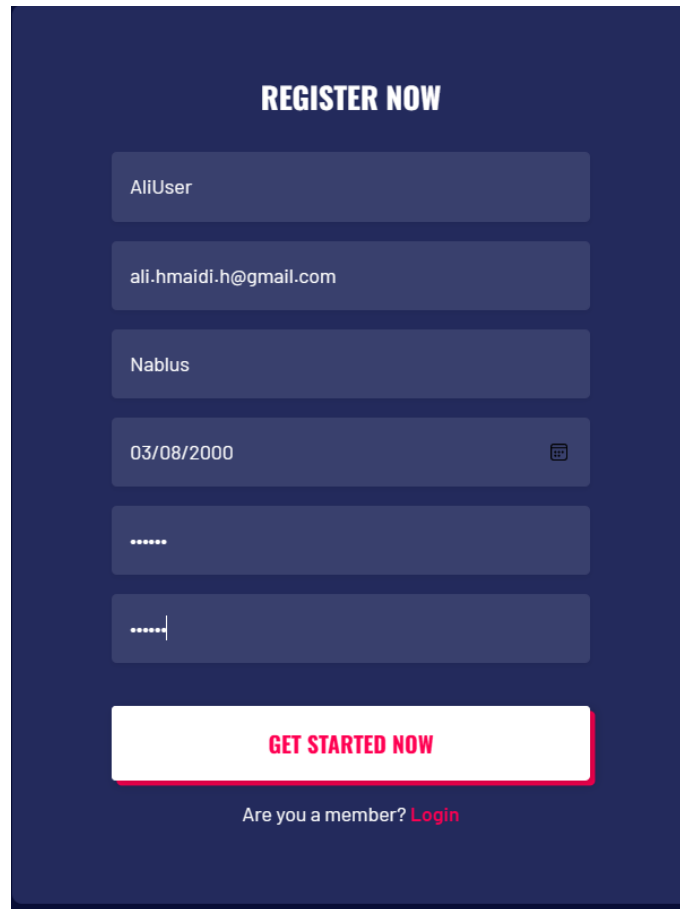


Figure 2: sign up form

after filling the information and pressing the button a confirmation email will be sent to the email address containing a link if pressed the email will be confirmed as following:

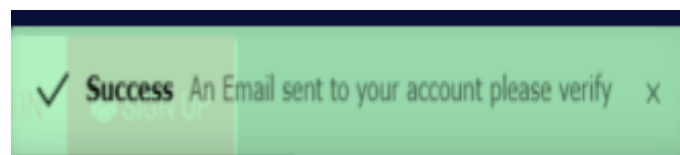


Figure 3: email sent message

And here the the email :

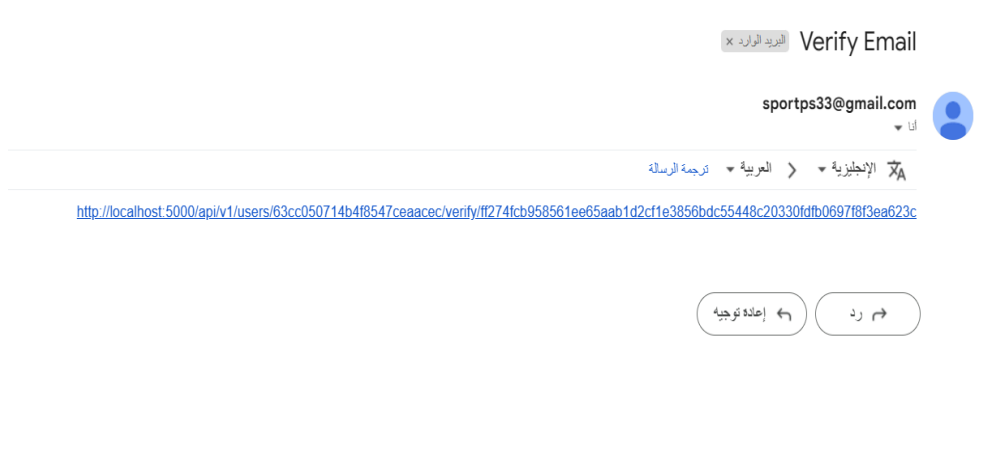


Figure 4: confirmation email with link

After clicking the link will be directed to this page:

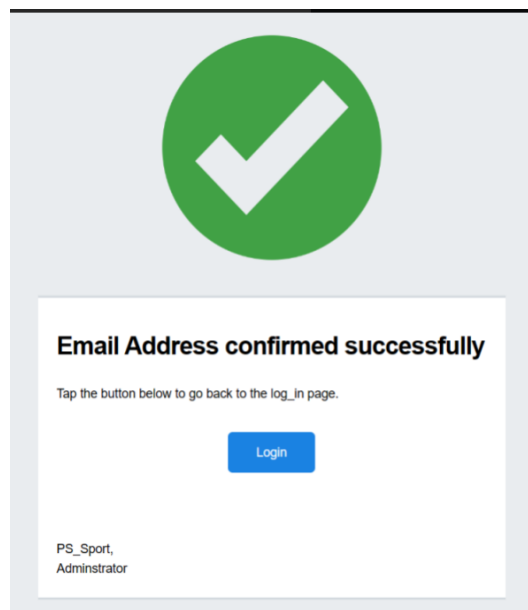
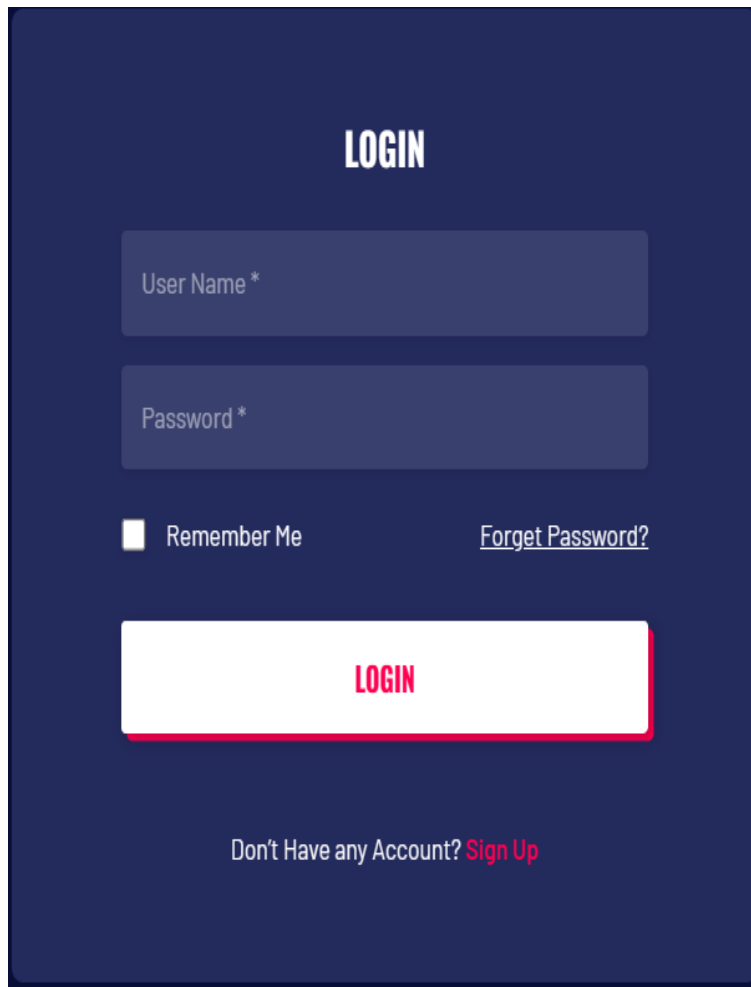


Figure 5: log in page

4.4.2 Login

The user can then log in after signing in and confirming their email address:



The image shows a login page with a dark blue background. At the top center, the word "LOGIN" is written in white, bold, uppercase letters. Below this, there are two input fields: "User Name *" and "Password *", both with a light blue background and rounded corners. Under the "User Name" field, there is a checkbox labeled "Remember Me" and a link labeled "Forgot Password?". Below these fields is a large, white, rounded rectangular button with the word "LOGIN" in red, bold, uppercase letters. At the bottom of the form, there is a link that says "Don't Have any Account? Sign Up", where "Sign Up" is in red.

Figure 6: log in page

4.4.3 Forgot password

If the user forgets his password, he can retrieve it by email, as shown: The user can then log in after signing in and confirming their email address:

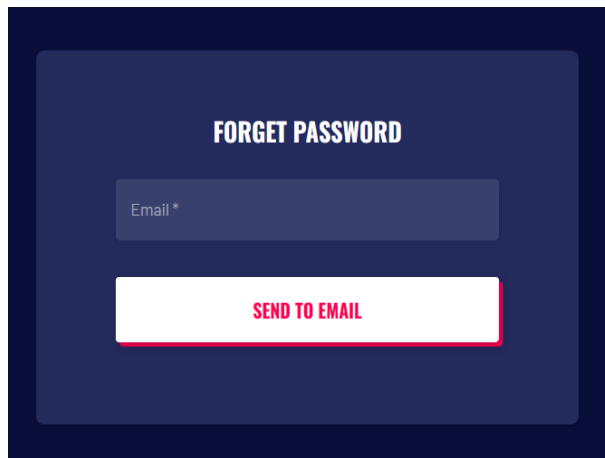


Figure 7: forgot password

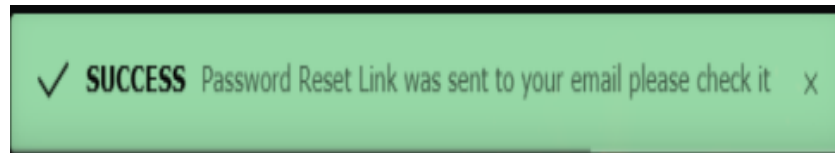


Figure 8: password reset message

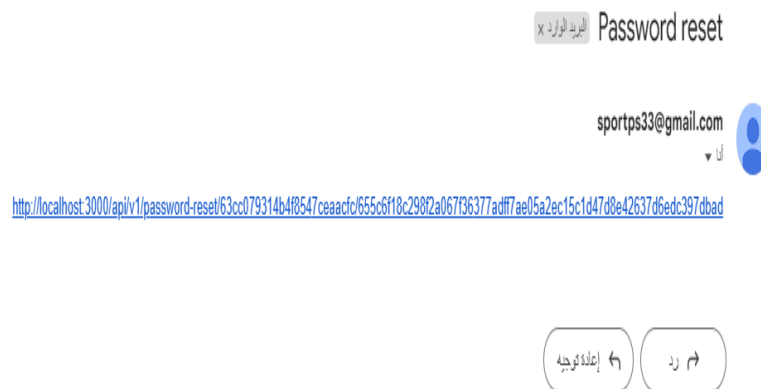


Figure 9: password reset email

After clicking the link:

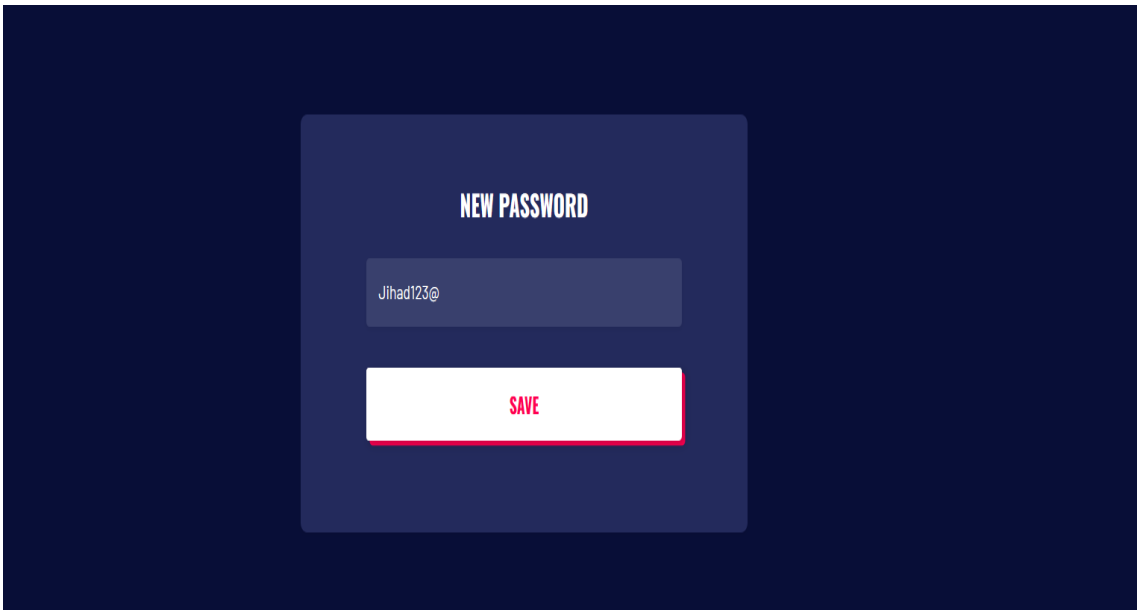


Figure 10: reset password

4.4.4 Home Page

The user can access this page whether they are logged in or not.

On this page, you can find the following: The featured match of the day (The big match) if there is:

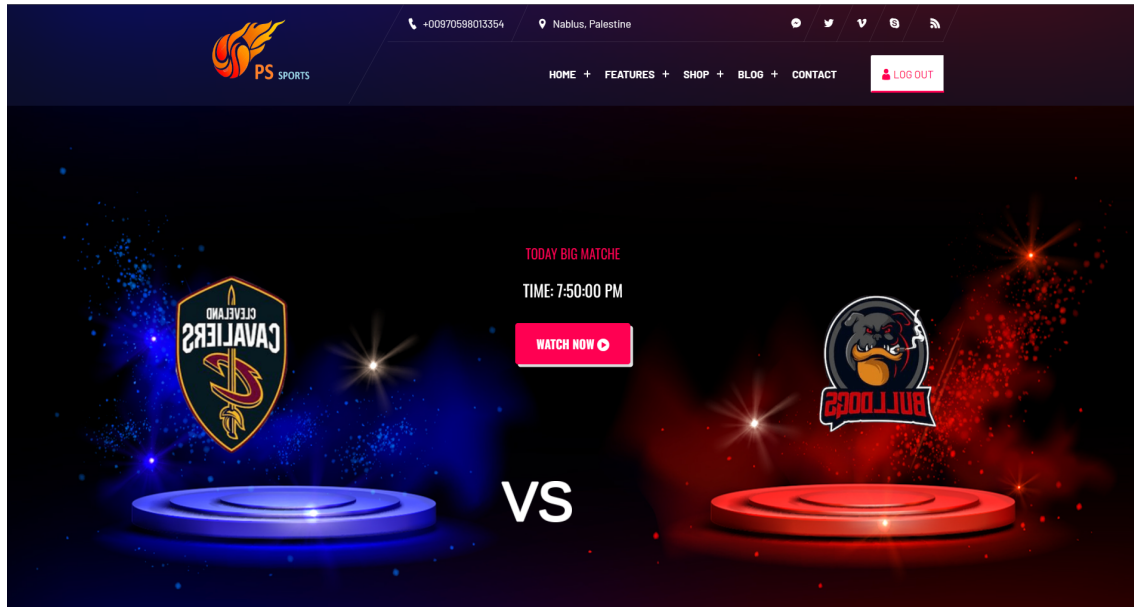


Figure 11: home page - big match

A schedule of the matches:

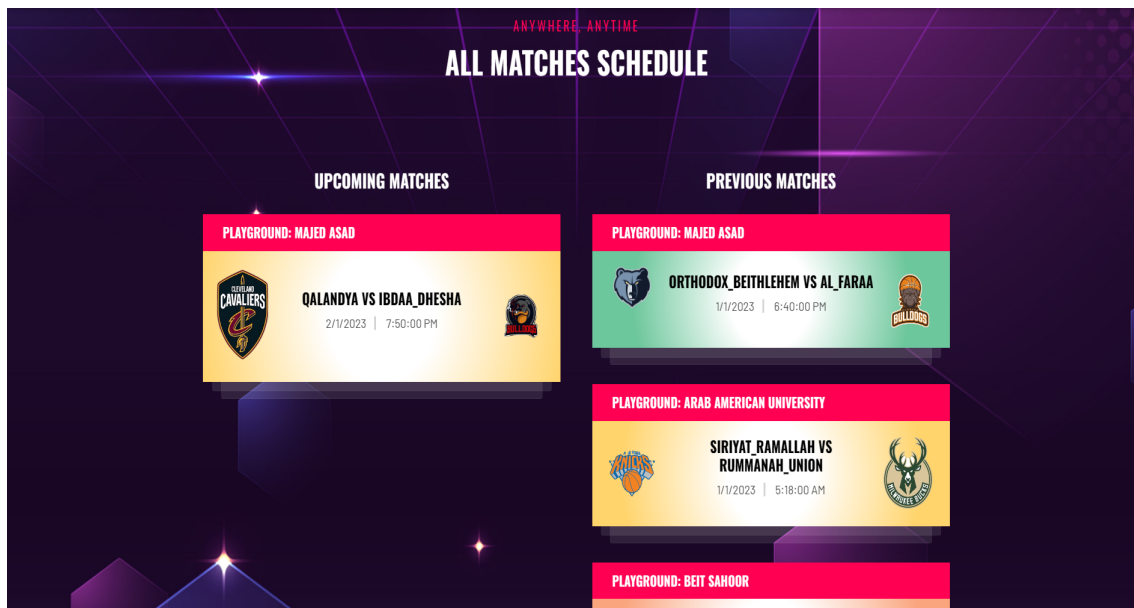


Figure 12: home page - matches schedule

The two teams that are going to compete that day if there is:

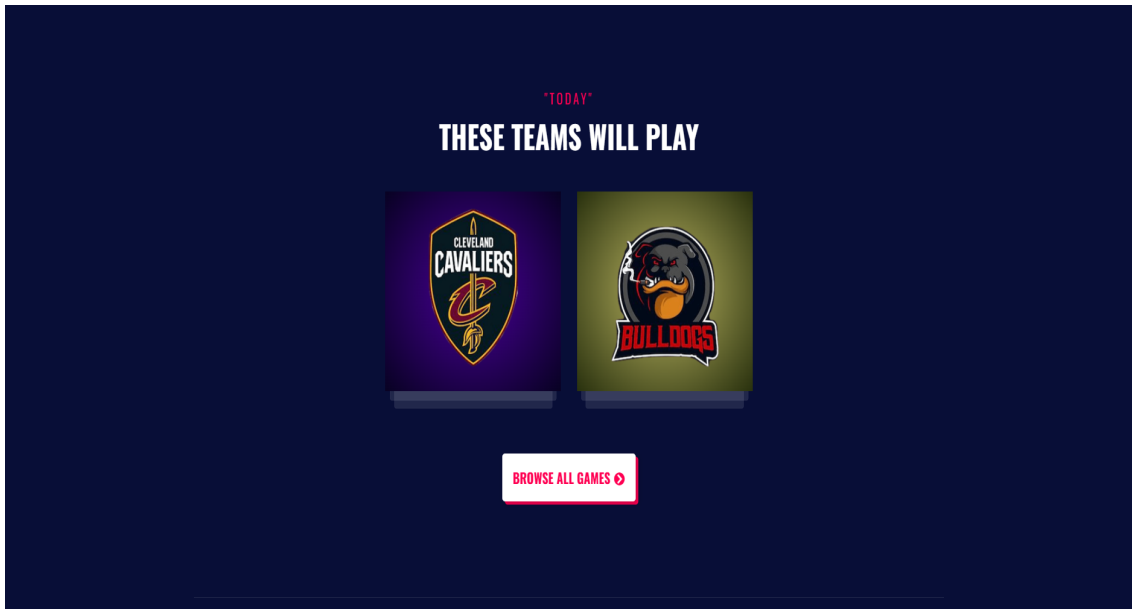


Figure 13: home page - today's match

Information about the host:



Figure 14: home page - information image

A sample of the teams participating in the competition:

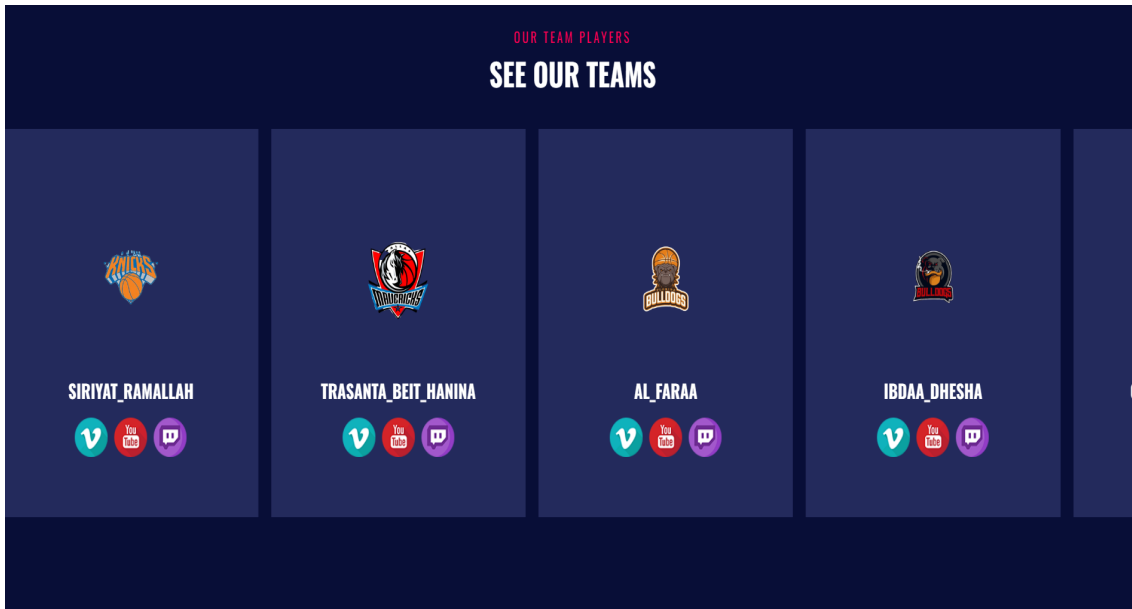


Figure 15: home page - Teams

The top (featured) products that the host selling:

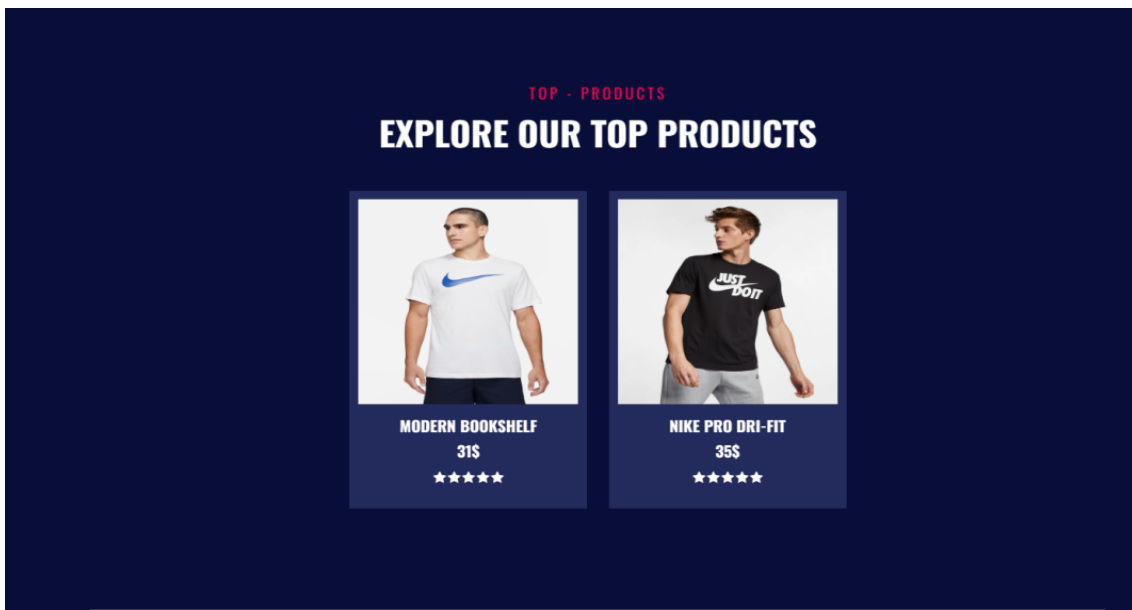


Figure 16: home page - top products

The most liked posts on our blogs

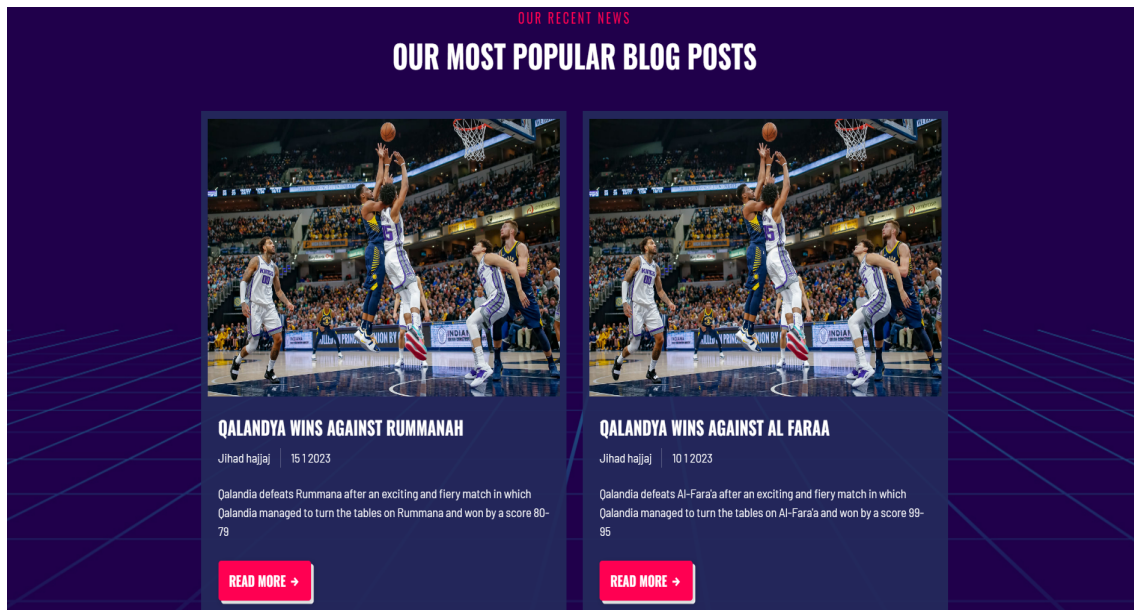


Figure 17: home page - Blogs

4.4.5 All Matches

In this page we have a list of all matches with options to see ongoing and upcoming ones

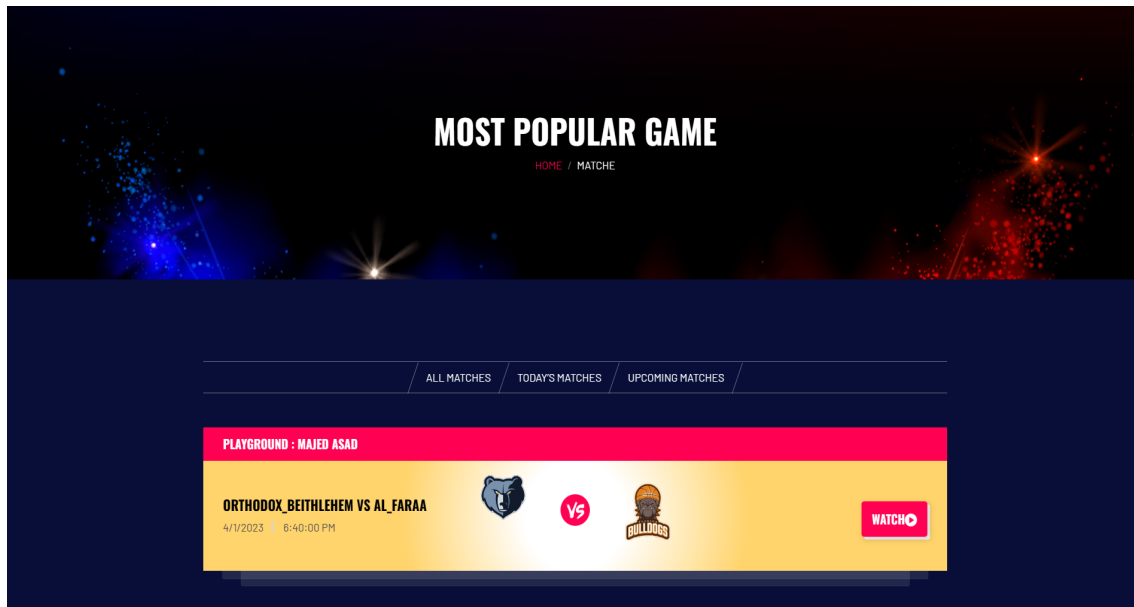


Figure 18: All Matches

On the upcoming matches users can activate notification check mark where they receive notification email 24 hours before the match starts

Also, they have a button in front of each match for predictions that directs them to the prediction page, which is shown later on.

provided a button for booking a match as shown in figure 19:

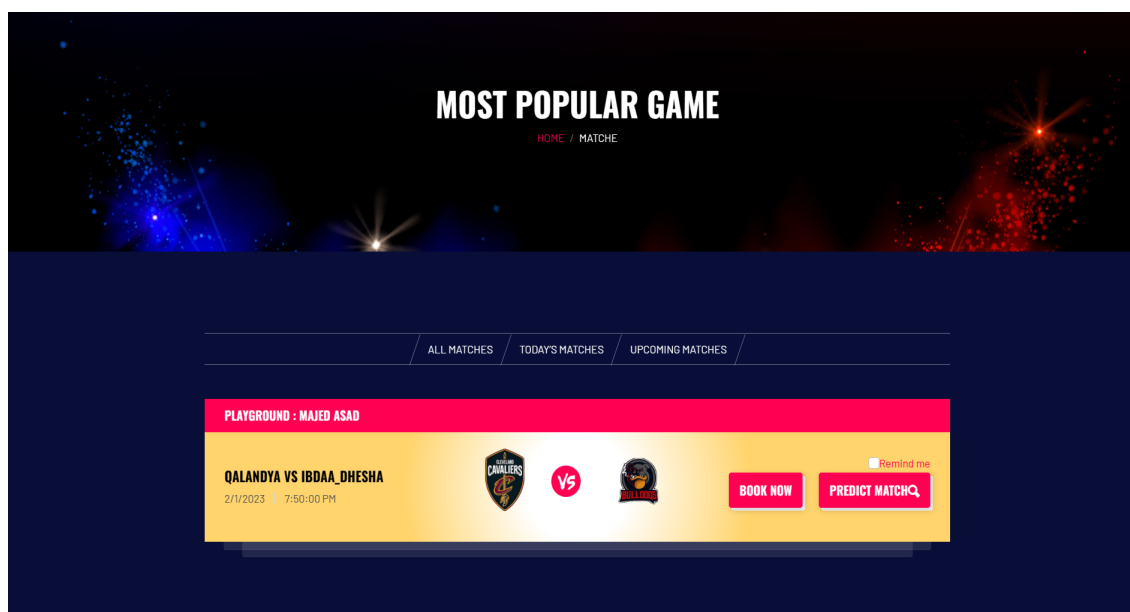


Figure 19: upcoming matches

4.4.6 All Teams

In this page we present all the teams added to the site , where if you clicked on one of them, you will be directed to another page where information about this team and its players are shown:

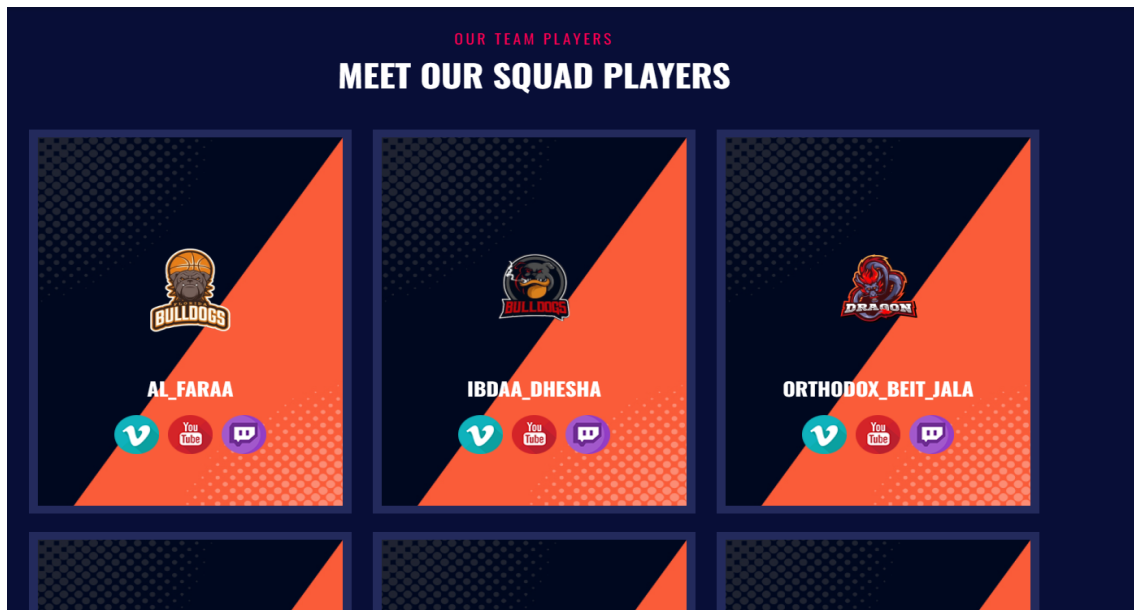


Figure 20: All teams

If you click on one of the teams :

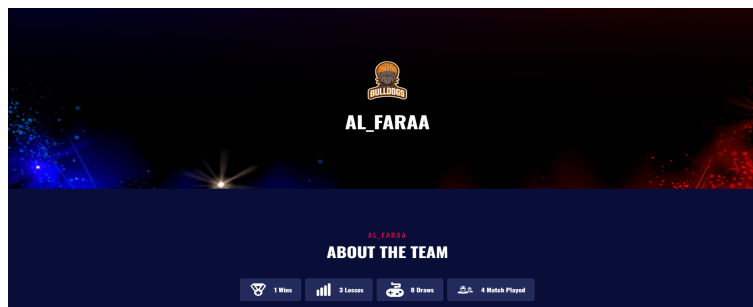


Figure 21: on of the teams

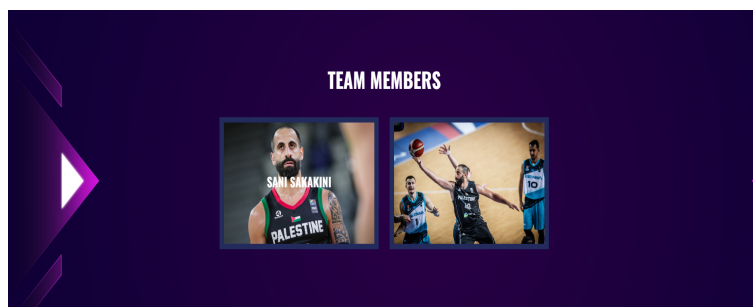
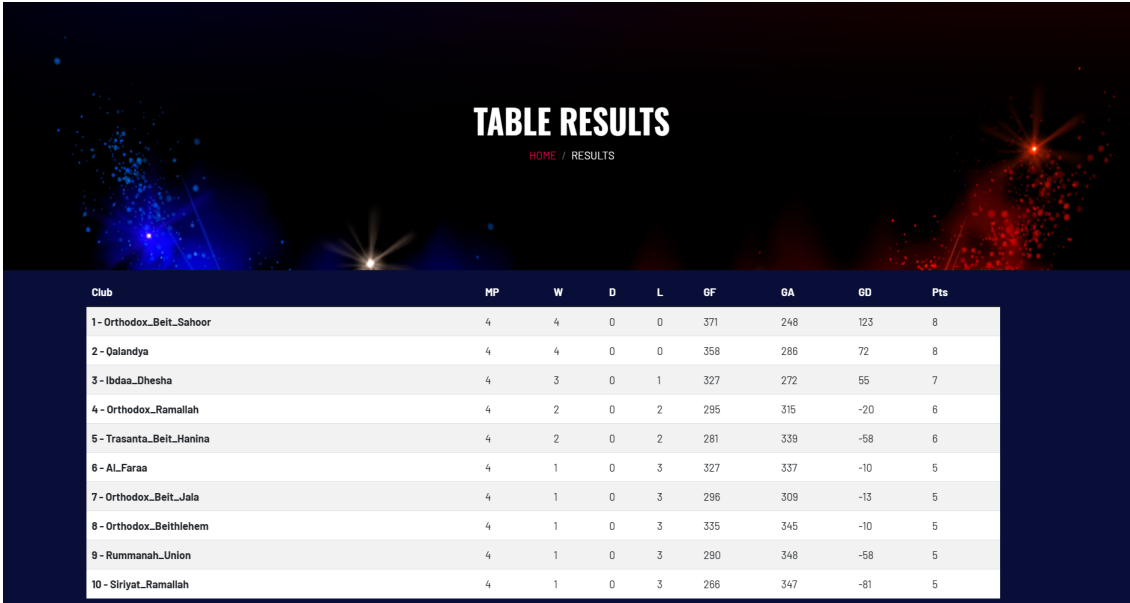


Figure 22: team members

4.4.7 Standings board

On this page we have the standings board that holds the statistics of all the teams, such as points, wins, losses, goals scored, etc.



Club	MP	W	D	L	GF	GA	GD	Pts
1 - Orthodox_Beit_Sahoor	4	4	0	0	371	248	123	8
2 - Qalandya	4	4	0	0	358	286	72	8
3 - Ibdaa_Dhesha	4	3	0	1	327	272	55	7
4 - Orthodox_Ramallah	4	2	0	2	295	315	-20	6
5 - Trasanta_Beit_Hanina	4	2	0	2	281	339	-58	6
6 - Al_Faraa	4	1	0	3	327	337	-10	5
7 - Orthodox_Beit_Jala	4	1	0	3	296	309	-13	5
8 - Orthodox_Beitlehem	4	1	0	3	335	345	-10	5
9 - Rummanah_Union	4	1	0	3	290	348	-58	5
10 - Siriyat_Ramallah	4	1	0	3	266	347	-81	5

Figure 23: Standings Board

4.4.8 Blogs

Here are the blogs where users can communicate and share posts of their favored events , also this is where hosts can announce matches

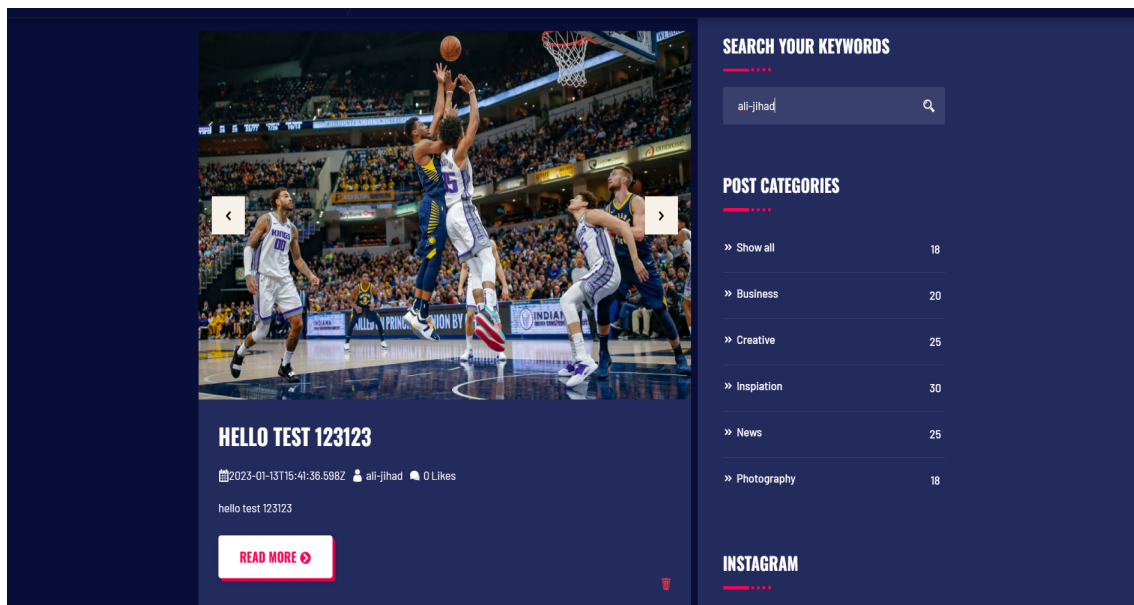


Figure 24: The Blogs/posts page

Uploading pictures is also supported as show in figure 25:

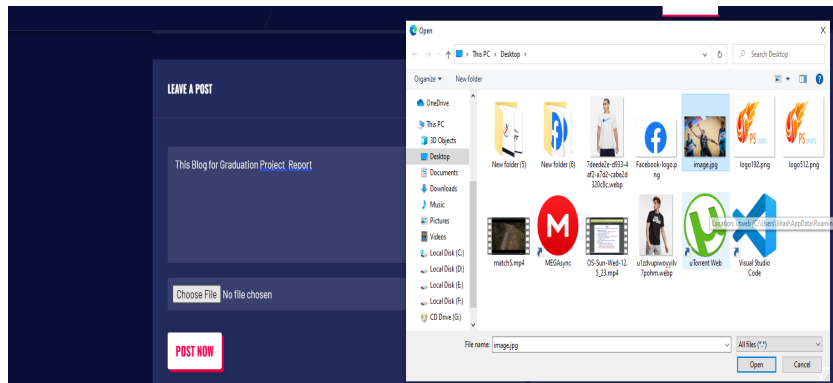


Figure 25: The Blogs/posts upload example

Users can also comment on posts and like them.

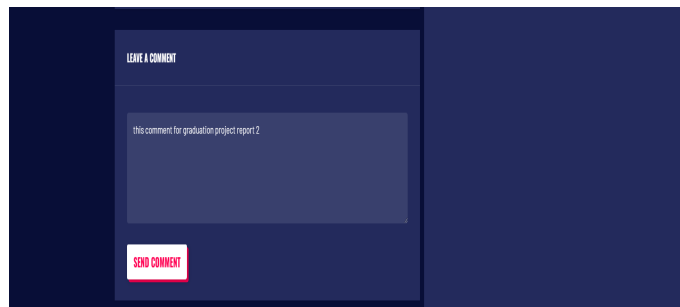


Figure 26: The Blogs/posts comments example

4.4.9 Predictions

This is where the user is directed if he clicks the "predict" button on an upcoming match, where the AI in the back-end uses previous matches as data to predict the winner of an upcoming match, and the probability of winning is predicted as shown:

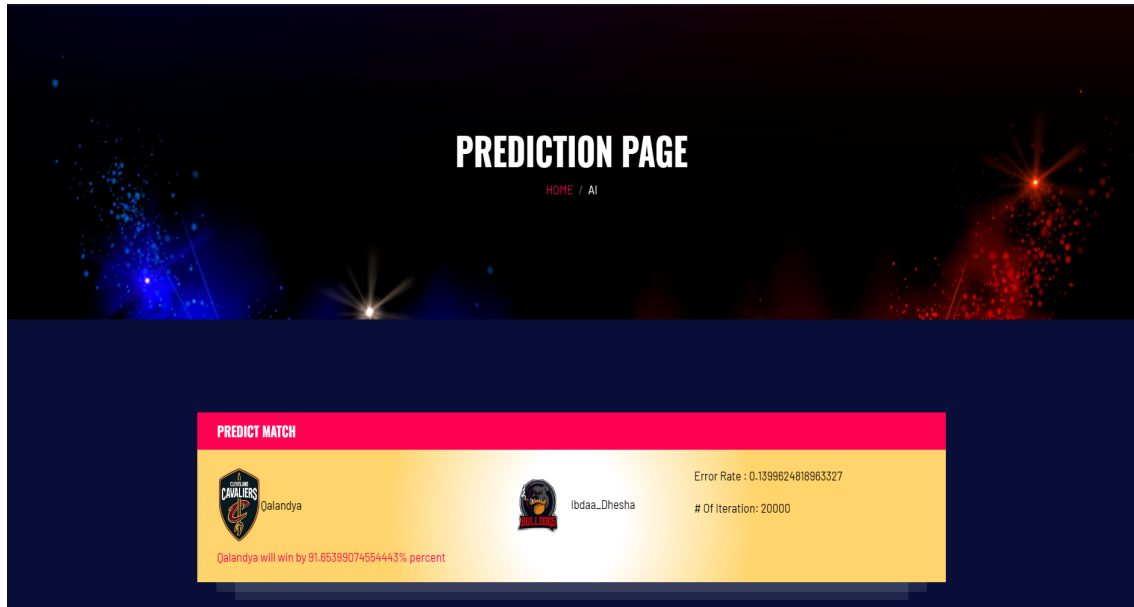


Figure 27: The prediction page

4.4.10 The Shop

This is the shop page where hosts can drop there products for users to buy online.

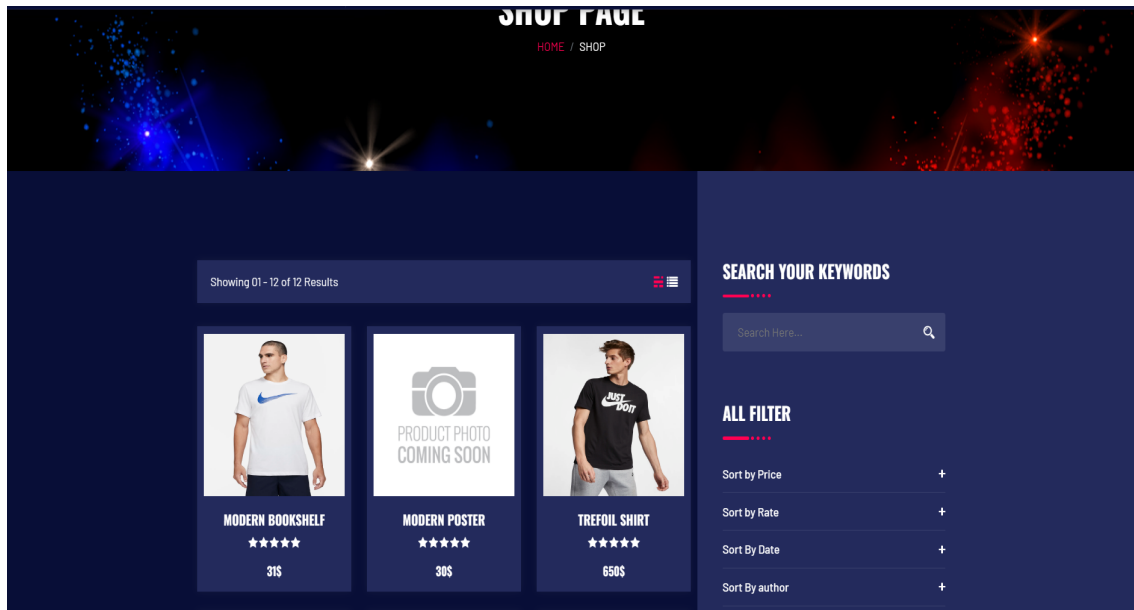


Figure 28: The Shop page

Users can find products by searching for their names or flipping through pages.

when clicking a product user can see information about it and can add it ti cart:

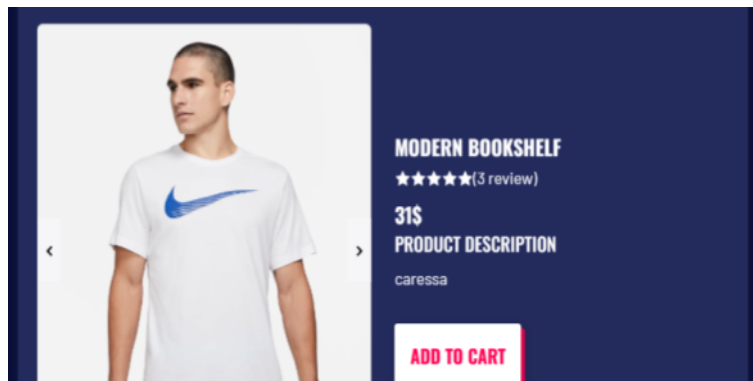


Figure 29: product info/ add to cart

Also, users can write and view reviews about the products on this page.

After adding a product to their cart, users can find it on their cart page, where they can cancel or proceed with payment.

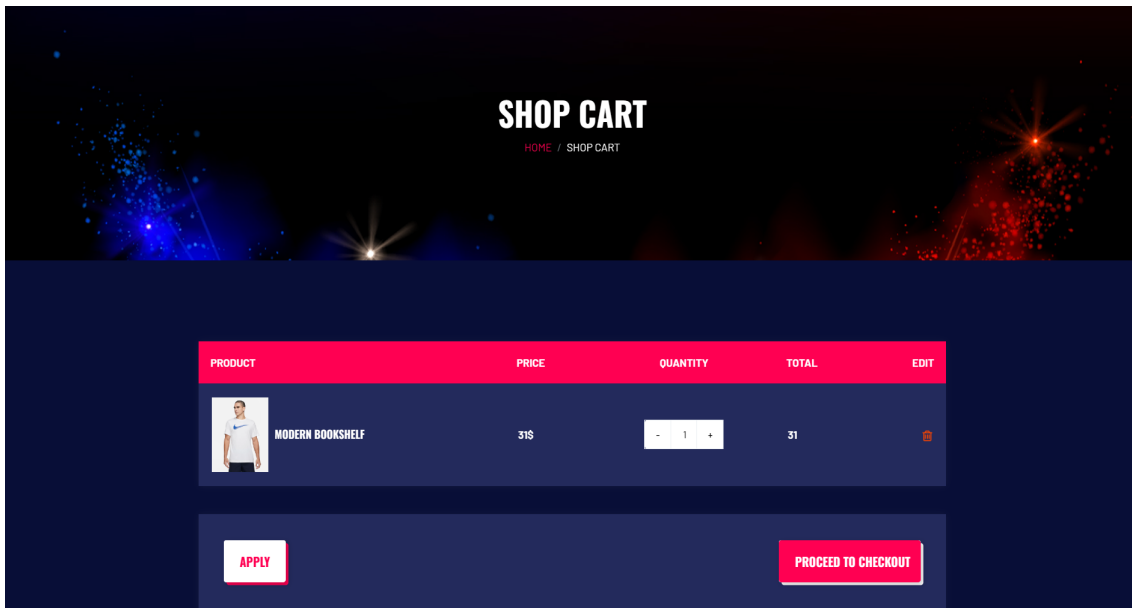


Figure 30: The cart page

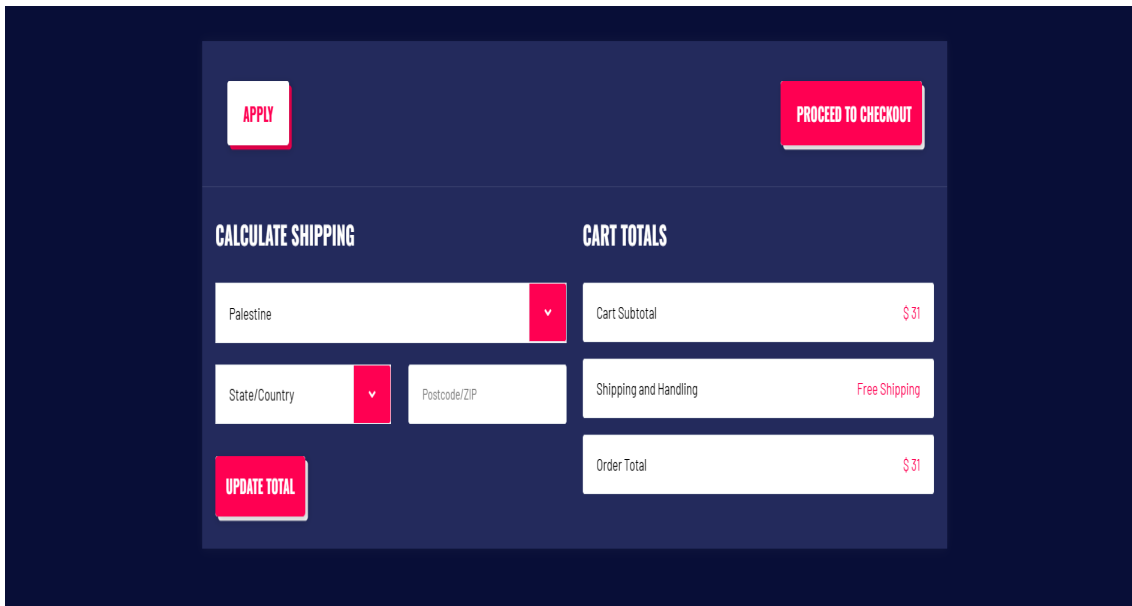


Figure 31: cart information

4.4.11 Contact us

On this page, users can send emails to the hosts about feedback or to report anything.

the admin can view these emails and manage them on the admin access that will be shown later on

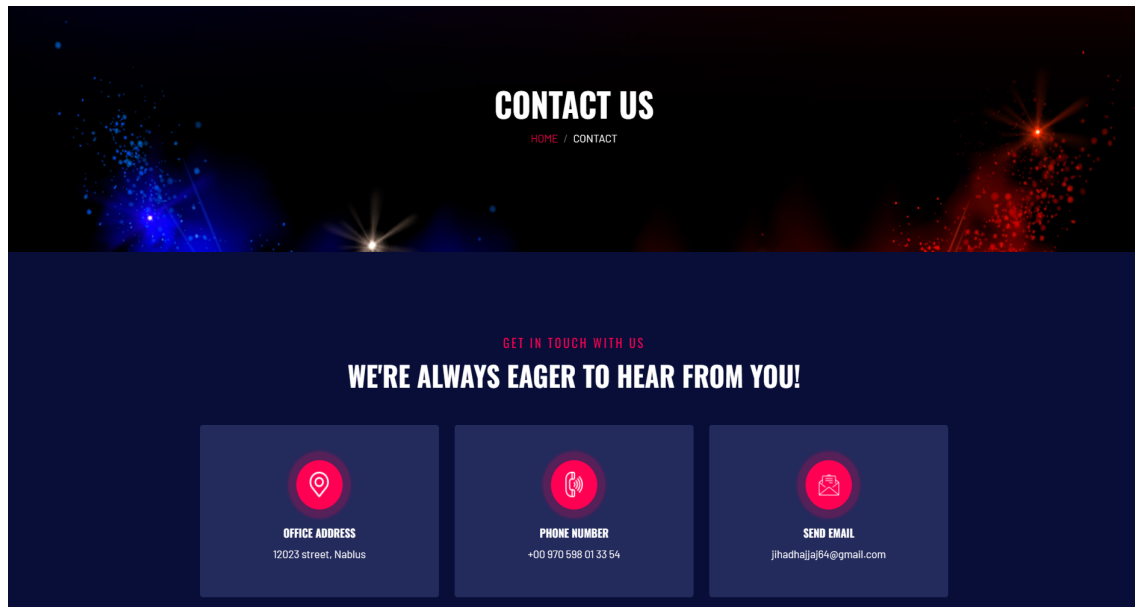


Figure 32: contact us

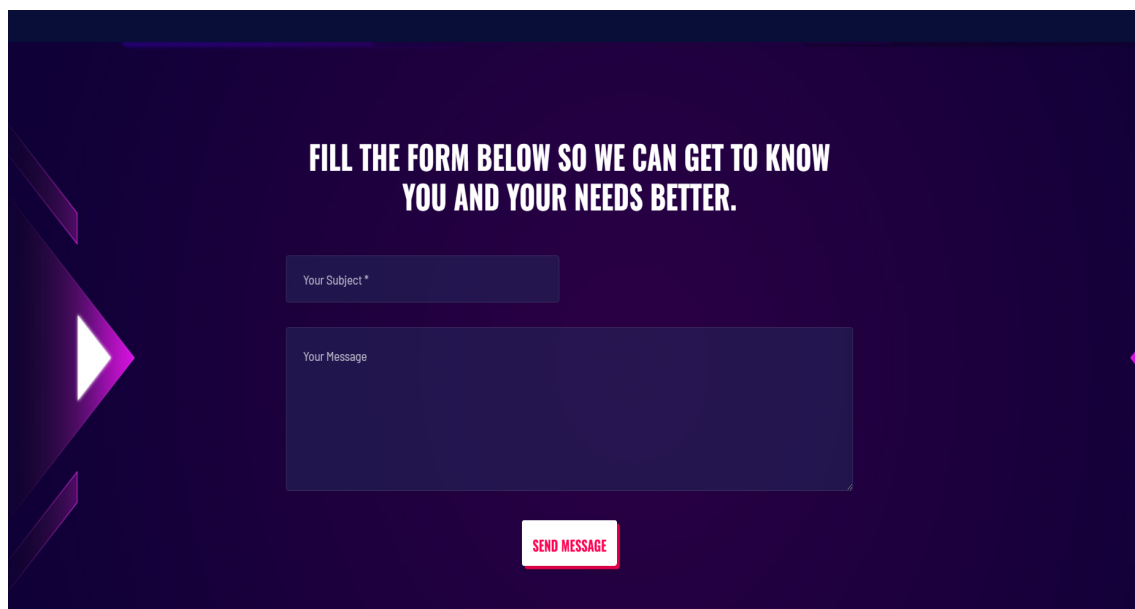


Figure 33: contact us

4.4.12 Admin Access

This is the admin home page, where he can navigate to other pages where he controls everything on the site:

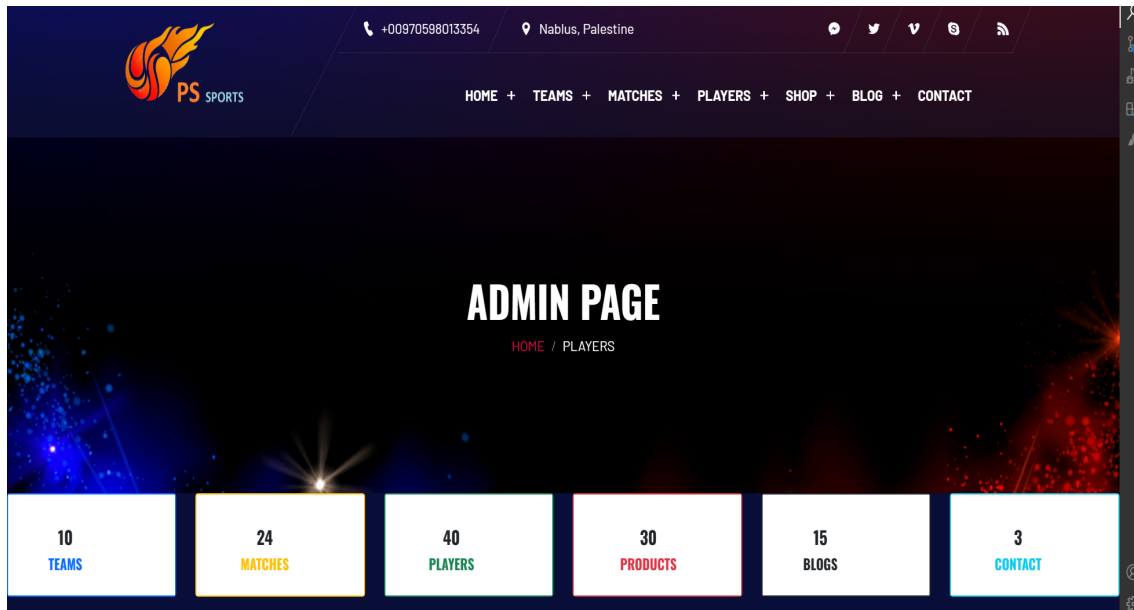


Figure 34: Admin home page

This is the team admin page where admin can manage teams:

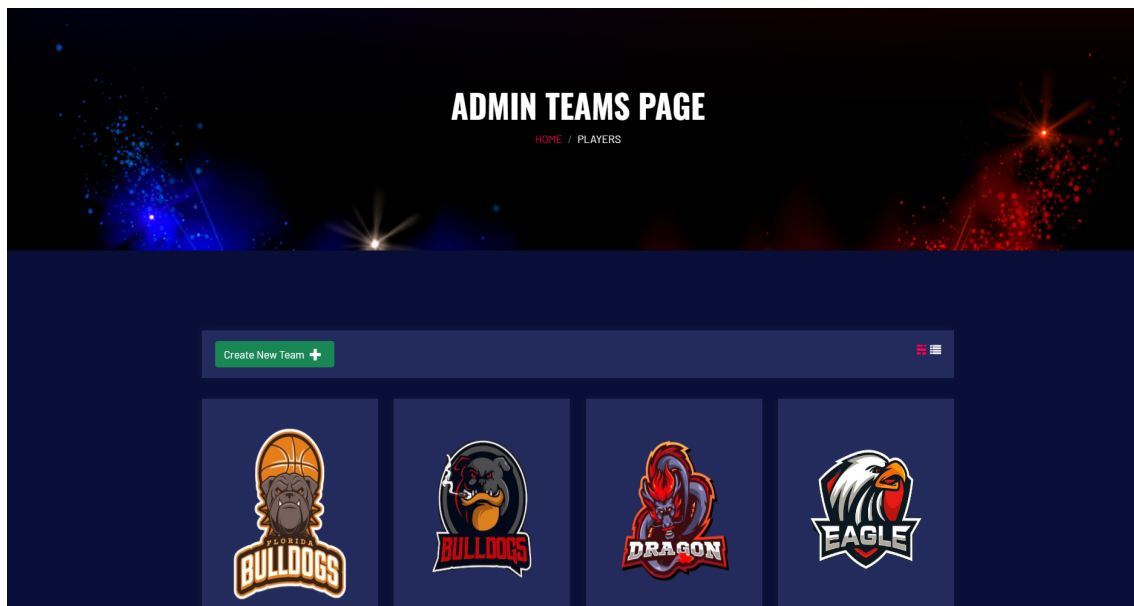


Figure 35: Admin team page

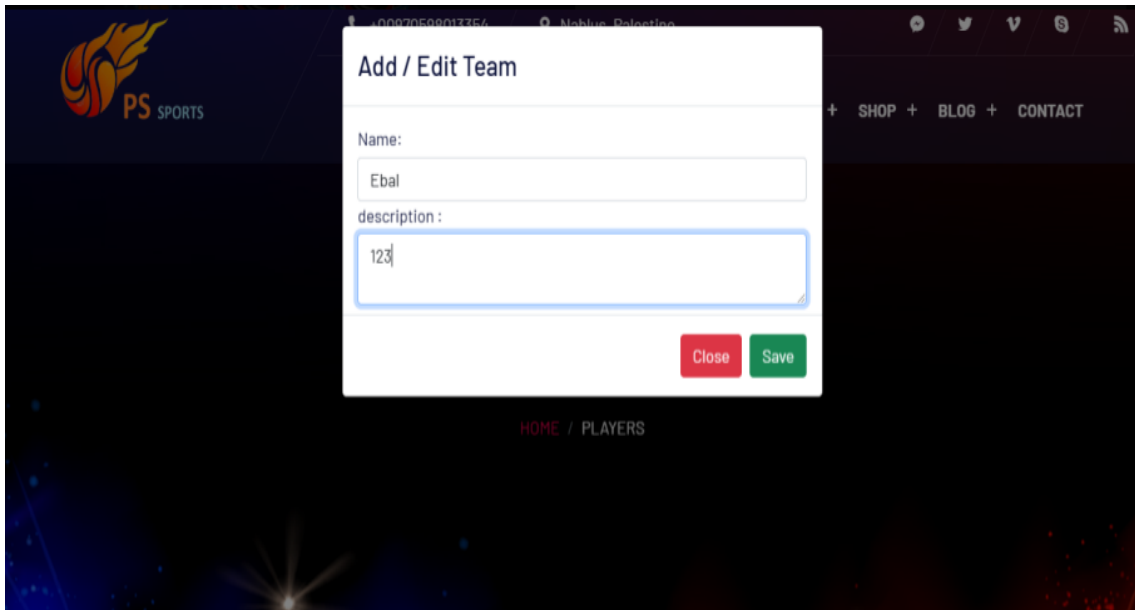


Figure 36: Admin creating team

Here is where admins can create matches between teams:

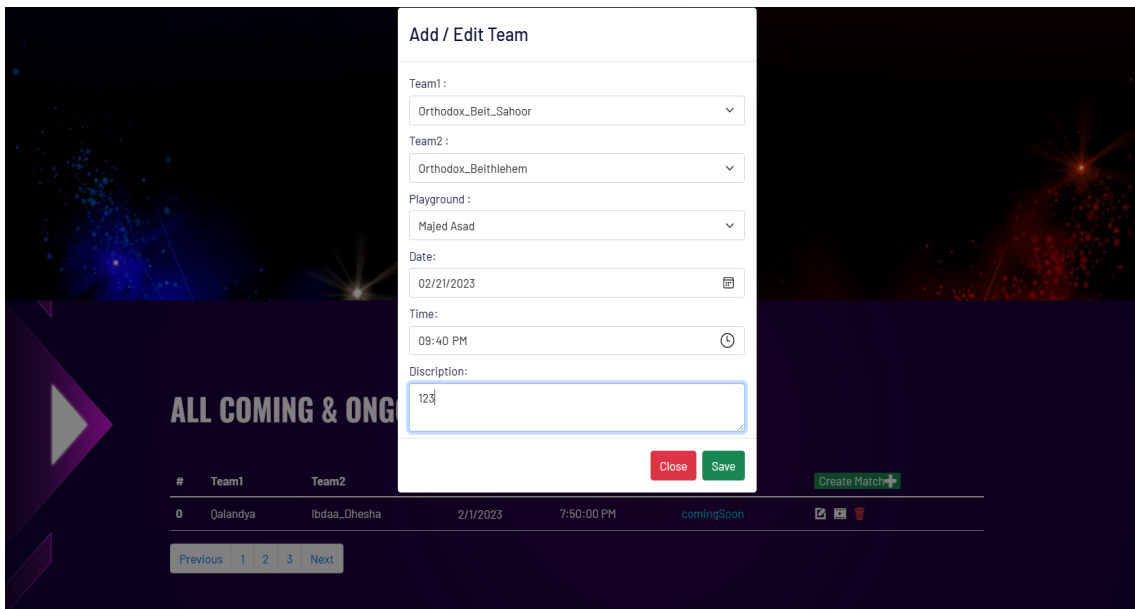
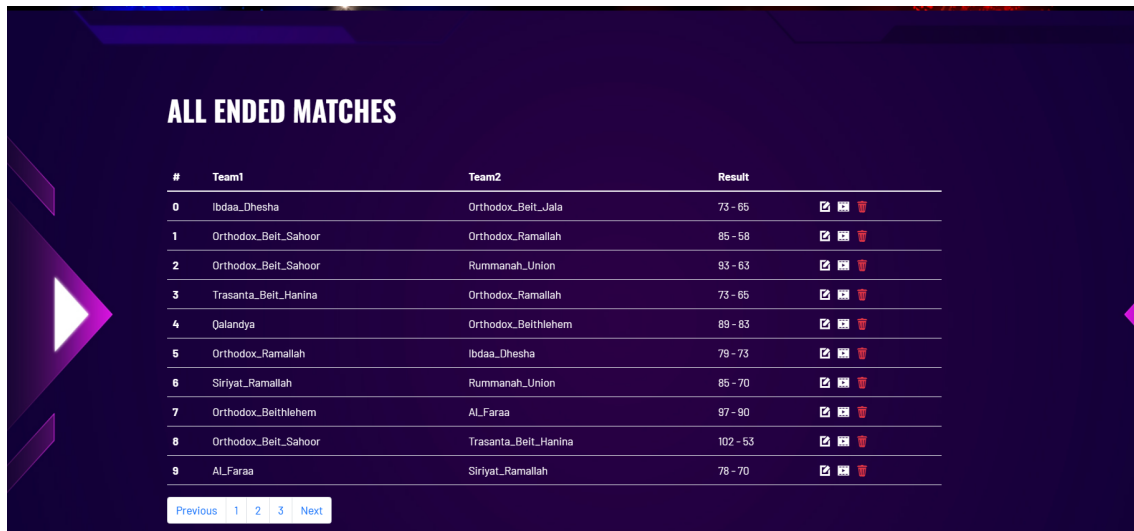
































Figure 37: Admin creating match

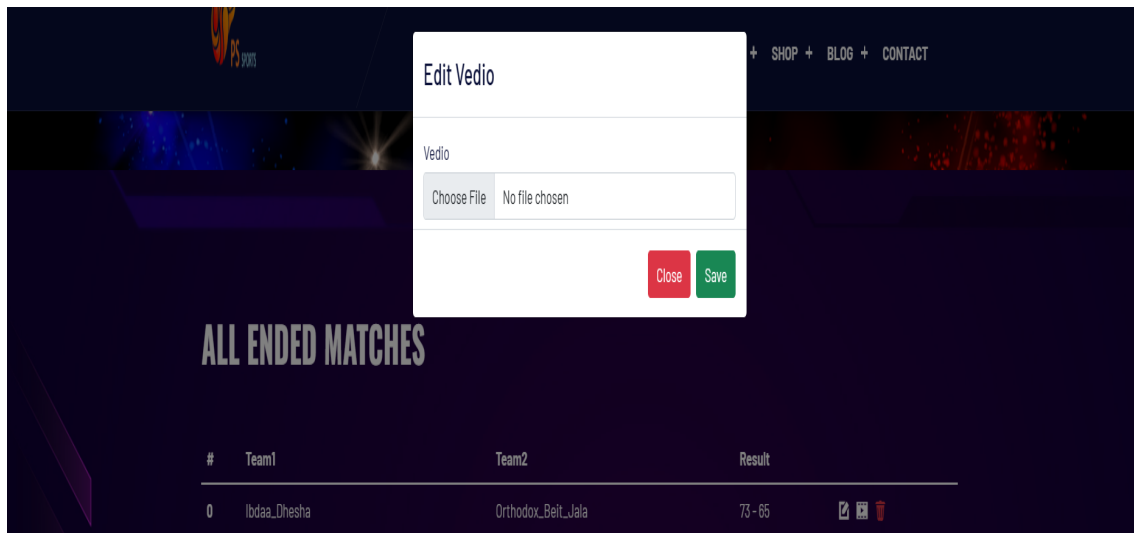
This is how the admin manages all matches where he can delete, edit, and upload a video for the finished matches:



#	Team1	Team2	Result	
0	Ibdaa_Dhesha	Orthodox_Beit_Jala	73 - 65	  
1	Orthodox_Beit_Sahoor	Orthodox_Ramallah	85 - 58	  
2	Orthodox_Beit_Sahoor	Rummanah_Union	83 - 63	  
3	Trasanta_Beit_Hanina	Orthodox_Ramallah	73 - 65	  
4	Qalandya	Orthodox_Beit_Hehem	89 - 83	  
5	Orthodox_Ramallah	Ibdaa_Dhesha	79 - 73	  
6	Siriyat_Ramallah	Rummanah_Union	85 - 70	  
7	Orthodox_Beit_Hehem	AL_Faraa	97 - 90	  
8	Orthodox_Beit_Sahoor	Trasanta_Beit_Hanina	102 - 53	  
9	AL_Faraa	Siriyat_Ramallah	78 - 70	  

Previous 1 2 3 Next

Figure 38: Admin managing matches



Edit Video

Vedio

Choose File No file chosen

Close Save




#	Team1	Team2	Result	
0	Ibdaa_Dhesha	Orthodox_Beit_Jala	73 - 65	  

Figure 39: Admin uploading video for a match

In the following page, Admin can manage all players, where he can add new players, edit their information, upload images for them, and delete players.

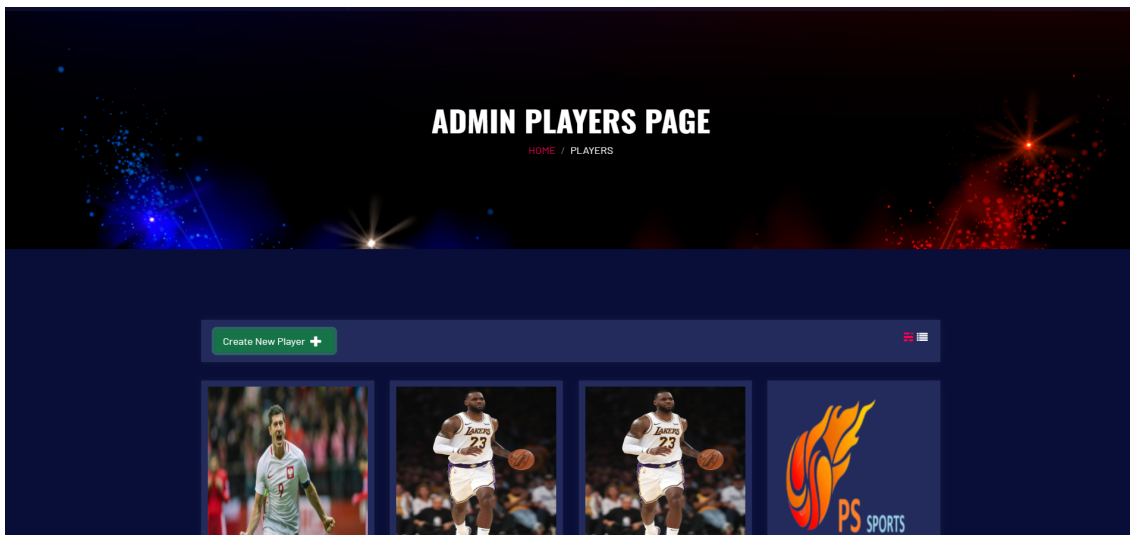


Figure 40: Admin players page

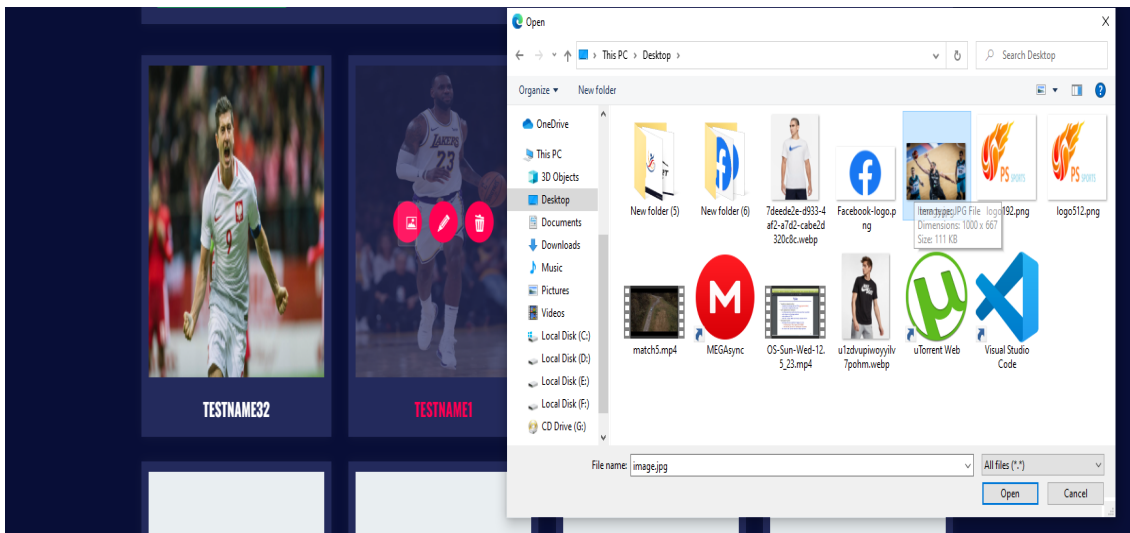


Figure 41: Admin uploading player image

similar to the admin teams, players, and matches pages admin can manage the shop entirely in this page admin can manage the contact email that he received from users:

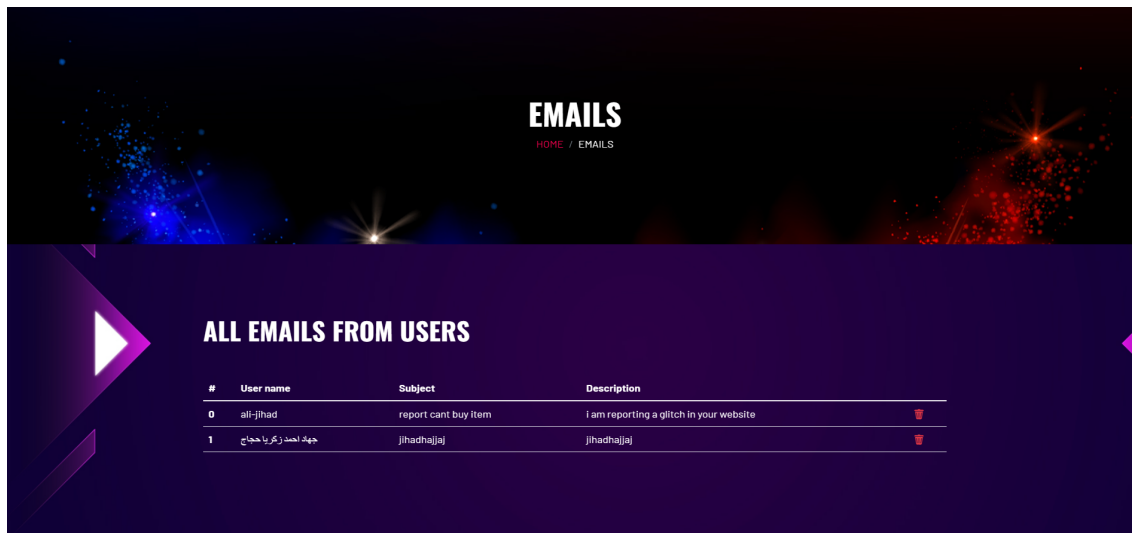


Figure 42: Admin managing contact emails

And on this page, admin can view all the users and manage them:

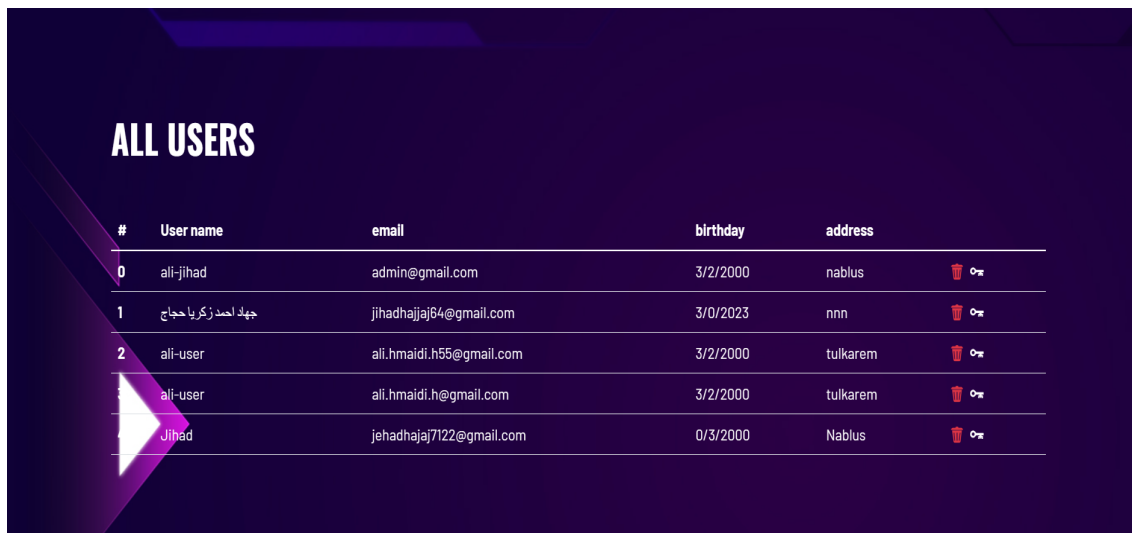


Figure 43: Admin managing other users

Finally here are some screenshots from our mobile application:

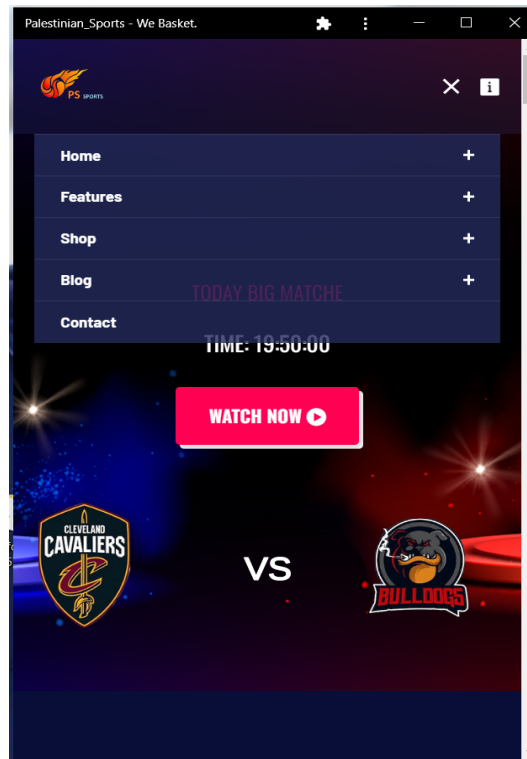


Figure 44: Home page on mobile

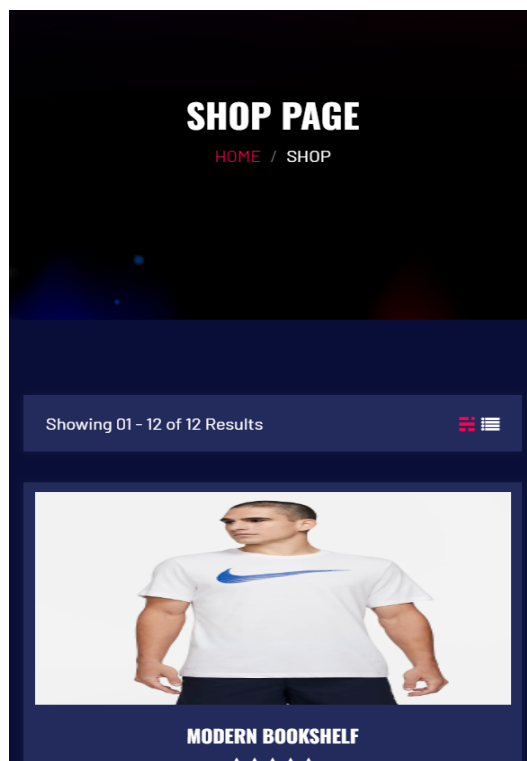


Figure 45: the shop from mobile

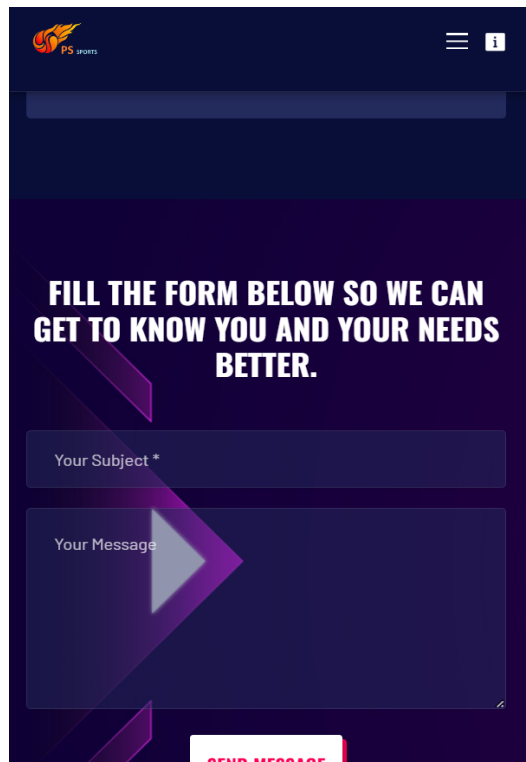


Figure 46: users feed back from mobile

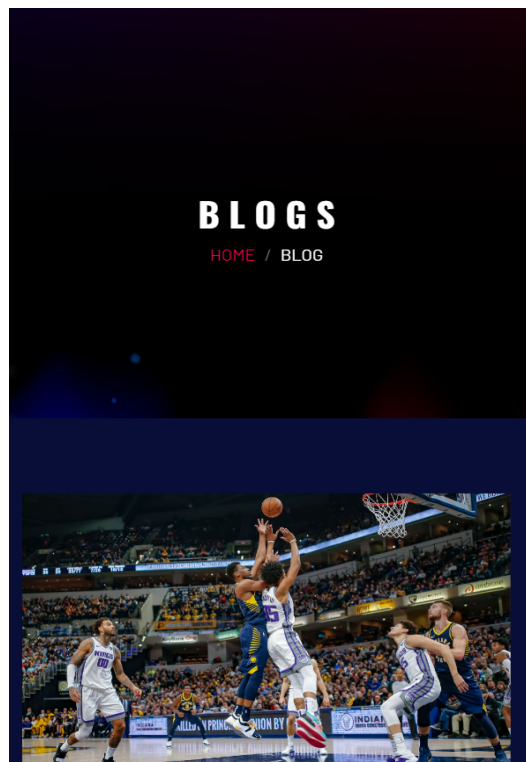


Figure 47: blogs/posts on mobile

5 Future Work

There are a few areas where our project might be strengthened, including:

1. A live stream service for live matches for people who want to watch in real time but cant attend.
2. enlarge the project where not only organisations that hold several teams can moderate their version of the application but also a specific team can crest their own section where they share their matches and blogs for their community.
3. communicate with the teams and organizations to persuade them to host our product.
4. players their own section with a personal page where they can change their information and status

6 Conclusions and Recommendation

6.1 Conclusion

Our project is a website and mobile application for sports teams, organizations, and fans of those teams and the sport. It offers a space for teams to host competitions, sell goods, upload games for fans to watch online, share blog posts, and interact with fans and other teams so that people can learn more about those teams, support them, and attend their competitions, among other things.

6.2 Recommendation

Prior to beginning the project, we spent a significant amount of time learning the React and Node.js frameworks, as well as wasting time on the RESTful API, video uploading AI, and other topics. As a result, having this experience before beginning a project is crucial, and we suggest other students undertake it first. One of the most crucial factors that helped us with this project was selecting the project idea before the graduation project's scheduled semester. As a result, pre-planning is crucial and helps students concentrate on their work.

7 References

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