



# SYSTEM DEVELOPMENT PROJECT REPORTS

**GROUP NO: 3**

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## INTRODUCTION

The football transfer market is worth billions of dollars. According to FIFA (2019) in 2019, the value of international men's football transfers was USD 7.35 billion. Therefore, the ability to track, review and compare players and their values is an essential part of football knowledge. It is also necessary for clubs to generate contracts and create teams. The wrong transfers can be devastating for a club's finance, reputation and the performance of the team. It can also damage the footballer's career, an ill-judged transfer can reduce the footballer player's market value and ultimately, their performance within the team. Due to this importance, a well-thought-out website for market values is crucial to a club and team. We created a web-based dashboard that displays footballer's transfer values and potential value through well-informed data to create predictions. We used HTML, CSS, Python and JavaScript to create the website. As well as MySQL for a database. Our website includes all the features that a club, players and users need to get market values efficiently. The website is easy to navigate and understand, responsive, secure, portable on many screen sizes and scalable. We created algorithms that can calculate the transfer value currently, and the value after every game is played up to five games. This has allowed us to create diagrams and charts to easily visualise the data. In addition, we have created an account system to make the website more personalised, this allows users to track their favourite players. The ability to compare two players means that the user can effortlessly analyse the player's performance and values. An admin page has also been implemented to manage the website. Our website will give users the ability to make informed conclusions about players' transfer values. Users can compare performance, track previous games, and view predicted values. This helpful website can also aid players and clubs in making knowledgeable decisions for contracts, players and teams.

## PROJECT AIM

Creating a web-based dashboard for updating the market value of football players. Reading data from games influences the players' value and prediction of how they will perform in future games. Our efficient web-based system will also predict the potential transfer value of players.

## GITLAB REPOSITORY LINK

<https://gitlab.uwe.ac.uk/jqw2-douet/software-development-group-project>

## SMART OBJECTIVES

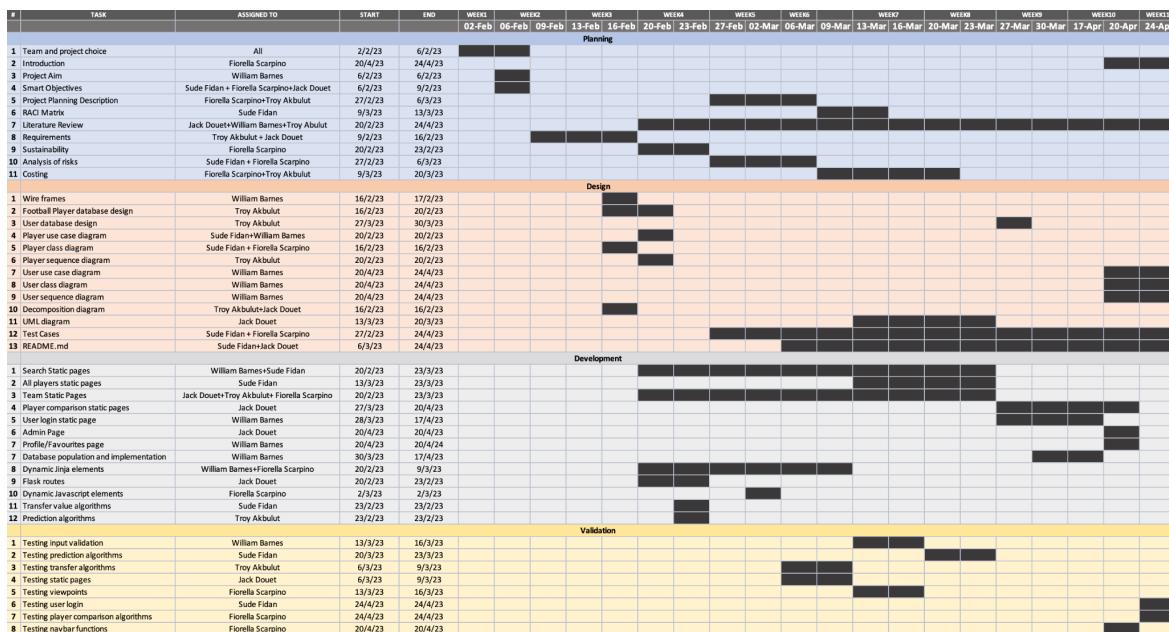
1. To create a more user-friendly experience for our application, we plan to design an interface that enables easy navigation, player searching, and access to statistics and market values. Our goal is to design HTML/CSS pages that are intuitive and easy to use, which we believe is achievable given our previous experience with web development and knowledge of relevant programming languages such as Flask and JavaScript. Ultimately, we believe that designing a more user-friendly interface will improve the overall experience of our application and make it more accessible for users. We aim to complete the interface design within two weeks.
2. To accurately calculate the market value and transfer fee of a player based on available data, we will use the given formula: current weekly salary X weeks left in the current contract X win percentage rate. Using the available database values and formula, we will cross-check our calculations with a calculator to ensure their accuracy. Since inaccurate results would be of no use to the end user, we will maintain accuracy. We aim to have this objective completed within two weeks.
3. To ensure accurate adjustments to the market value of team players after each game and measure the impact of game results on a player's potential transfer value, we will calculate the market value after each game and use a calculator to cross-check the accuracy of our calculations. Maintaining accuracy is important since inaccurate results would not be useful for the end user. We aim to complete this objective within two weeks.
4. To achieve program efficiency and readability, we will handle data efficiently and follow Pythonic development conventions. Peer reviews of each other's code will be conducted using tools available in GitLab to ensure that the objective is achievable. An inefficient program or unreadable code would not be useful for clients or programmers, respectively. The program will be completed in 12 weeks, providing a time-bound framework for accomplishing this objective.

# PROJECT PLANNING & TEAM ROLES

## Gantt Chart

Task	Assigned To	Progress	Start	End	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11										
					02-Feb	06-Feb	09-Feb	13-Feb	16-Feb	20-Feb	23-Feb	27-Feb	02-Mar	06-Mar	09-Mar	13-Mar	16-Mar	20-Mar	23-Mar	27-Mar	30-Mar	17-Apr	20-Apr	24-Apr	
Planning																									
Task 1: Team and project choice	All	0%																							
Task 2: Introduction	All	0%																							
Task 3: Project Aim	William Barnes	0%																							
Task 3: Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	0%																							
Task 4: Literature Review	Jack Douet	0%																							
Task 5: Requirements	Troy Akbulut + Jack Douet	0%																							
Task 6: Sustainability	Fiorella Scarpino	0%																							
Design																									
Task 1: Wire frames	William Barnes	0%																							
Task 2: Database design	Troy Akbulut	0%																							
Task 3: Use case diagram	Sude Fidan	0%																							
Task 4: Sequence diagram	Sude Fidan + Fiorella Scarpino	0%																							
Task 5: Sequence diagram	Troy Akbulut	0%																							
Task 6: Test Cases	Sude Fidan	0%																							
Task 7: Decomposition diagram	Troy Akbulut	0%																							
Development																									
Task 1: Static pages	William Barnes	0%																							
Task 2: Dynamic Jinja elements	Jack Douet+William Barnes	0%																							
Task 3: Flask routes	Jack Douet	0%																							
Task 4: Dynamic Javascript elements	Fiorella Scarpino	0%																							
Task 5: Transfer value algorithms	Sude Fidan	0%																							
Task 6: Prediction algorithms	Troy Akbulut	0%																							
Validation																									
Task 1: Testing input validation	William Barnes	0%																							
Task 1: Testing prediction algorithms	Sude Fidan	0%																							
Task 2: Testing transfer algorithms	Troy Akbulut	0%																							
Task 3: Testing static pages	Jack Douet	0%																							
Task 5: Testing viewpoints	Fiorella Scarpino	0%																							

This is the first version of our Gantt chart, which we created in the planning phase. We used a Gantt chart to visualise easily what the tasks were and who was assigned to each task. It also helps allocate time and resources to the tasks that are taking longer to complete. Furthermore, it allows us to see if there are any areas of the plan that have been missed or any planning conflicts. Our Gantt chart has 4 phases; planning, design, development and validation. Within each phase are the breakdowns of each task.



## RACI Matrix

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
2	●	● ● ● ● ●			
3	●	●	● ● ● ●		
4	●	● ●	● ●	● ● ● ●	
5	●	● ● ●	●	● ● ● ●	
6	●	● ●	●	● ●	● ●
7	●	●	●	● ●	● ●
8	●	● ● ●	●	● ● ● ●	●
9	●	● ●	● ● ●	● ●	
10	●	● ● ●	● ● ● ●	● ● ●	●
11	●	● ●	● ● ●		● ●

MEMBER	LABEL
<b>Jack Douet</b>	●
<b>Sude Fidan</b>	●
<b>Fiorella Scarpino</b>	●
<b>Troy Akbulut</b>	●
<b>William Barnes</b>	●

Each team member has a different colour on the RACI Chart. Each member played each role at least once and was also the weekly group leader twice since there are five people in the group for 10 weeks worth of the project.

## Risk Register

ID	RISK	CATEGORY	PROBABILITY	IMPACT	MITIGATION
1	Up-to-date documentation	Development Phase	High	High	Use of GitLab and Google Docs
2	Legal compliance	Planning Phase	High	Medium	Use royalty-free photos, or if it's a commercial business buy a licence of image stock
3	Project Delays	Planning Phase	Medium	High	Establish clear timelines and milestones, use Gantt charts and communicate with stakeholders about potential delays
4	Security breaches in database	Design Phase	Medium	High	Implement strong passwords, and testing regularly and updating security measures
5	Performance issues	Validation Phase	Medium	Medium	Conduct performance testing, optimise website code and content for speed and monitor website performance metrics e.g. by using Lighthouse
6	Inaccurate or incomplete data	Validation Phase	Low	High	Develop clear guidelines for data input and validation, conduct regular testing

The first risk is not having up-to-date documentation for everyone. A contingency plan we created was to host all the code and the documents on GitLab and Google Docs respectively to ensure compatibility for every piece of work.

The second risk is related to legal compliance. To mitigate any legal issues, we will use royalty-free images for this project. Alternatively, we can buy a licence to use stock images, as this would ensure that the images we use are permitted.

The third risk is incomplete requirements as a result of underestimation of time and resources. A way of reducing the risk is to have a Gantt chart with an efficient plan and regular communication with stakeholders.

The fourth risk we considered was security breaches. Our data is stored in a database so to ensure that the data is secure we will have a password to secure the data and avoid unauthorised access.

The fifth risk is performance issues. As we are creating a website, it should be able to load and run quickly and be usable on different platforms, therefore to reduce the risk of a slow website we will be testing using Google Lighthouse.

Incomplete and inaccurate data is the sixth risk. We will mitigate this by following the same guidelines for data input and testing the inputs.

## **Costing**

Many features need to be priced up when creating a website. One such feature is the domain. According to Stevens (2019), the upfront cost for a domain is up to £30, and there will also be costs every year, depending on the domain extension. The website will also have to be maintained which can be on average £150 per year (Stevens, 2019). Along with a domain, the website will need an SSL. A ‘DV SSL Certificate Single Domain’ will cost £83.31 a year as stated by ComodoCA (n.d.). Our website also uses photos, so a photo licence will also have to be priced. On average it costs \$8.67 on iStock per image (Struck, 2016). For the server, Hetzner (n.d.) priced a ‘Level 4’ server for €5.39 a month, which would also include domains such as ‘.de, .com, .net, .org’.

## **DESIGN & TEST PLAN**

### **Initial steps:**

#### **1. DESIGN PHASE**

- a. Wire frames - William Barnes
- b. Database design - Troy Akbulut
- c. UML diagrams
  - i. Class diagram - Sude Fidan + Fiorella Scarpino
  - ii. Sequence diagram - Troy Akbulut
  - iii. Use case diagram - Sude Fidan
  - iv. Decomposition diagram - Troy Akbulut
  - v. UML diagram - Jack Douet
- d. Create test cases - Sude Fidan + Fiorella Scarpino
- e. *README.md* - Sude Fidan + Jack Douet

#### **2. DATABASE OPERATION - William Barnes**

- a. Convert the CSV into database
- b. Populate the database
- c. Use database data to populate HTML pages
- d. Mysql connector
- e. Interaction with Flask

#### **3. ALGORITHM INTERPRETATION AND IMPLEMENTATION**

- a. Work out new transfer value from the first value using the given formula: - Sude Fidan
  - i. current weekly salary x weeks left in the current contract x win percentage rate
- b. Then work out new values based on the next five games given(predictions) - Troy Akbulut

#### **4. CREATING WEB INTERFACE**

- a. Creating static HTML/CSS pages
  - i. Base HTML page - William Barnes
  - ii. Homepage - William Barnes
  - iii. All Players page - Sude Fidan
  - iv. Player page - Jack Douet + Troy Akbulut
- b. Create dynamic Jinja elements - Fiorella Scarpino + William Barnes

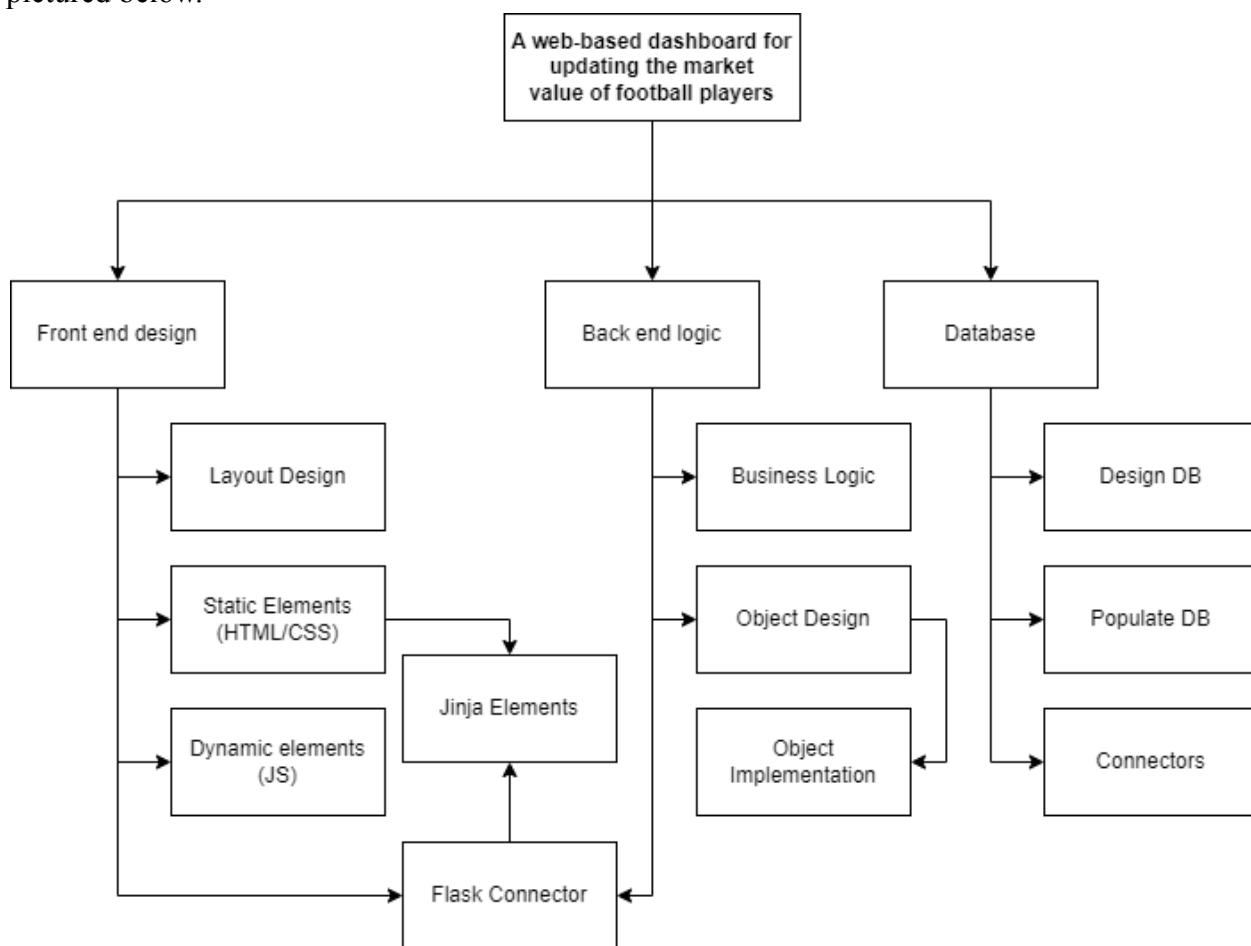
- c. Create Flask routes - Jack Douet
- d. Create dynamic Javascript elements - Fiorella Scarpino

## 5. VALIDATION

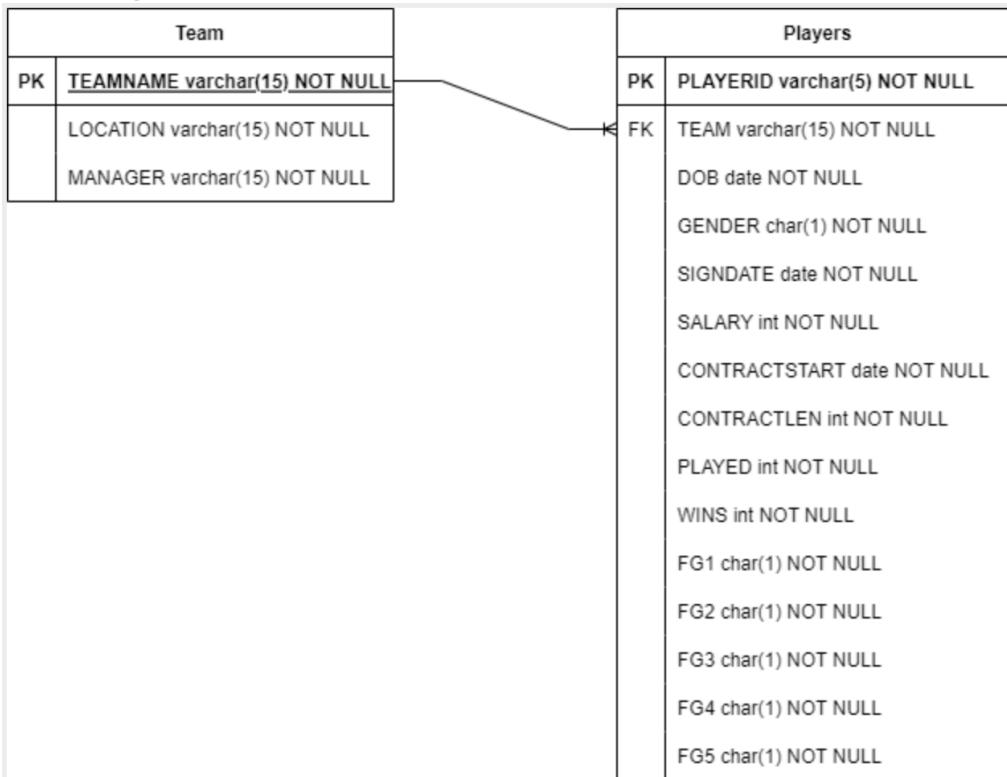
- a. Testing input validation - William Barnes
- b. Testing prediction algorithm - Sude Fidan
- c. Testing transfer algorithms - Troy Akbulut
- d. Testing static pages - Jack Douet
- e. Testing viewpoints - Fiorella Scarpino

## Task Decomposition

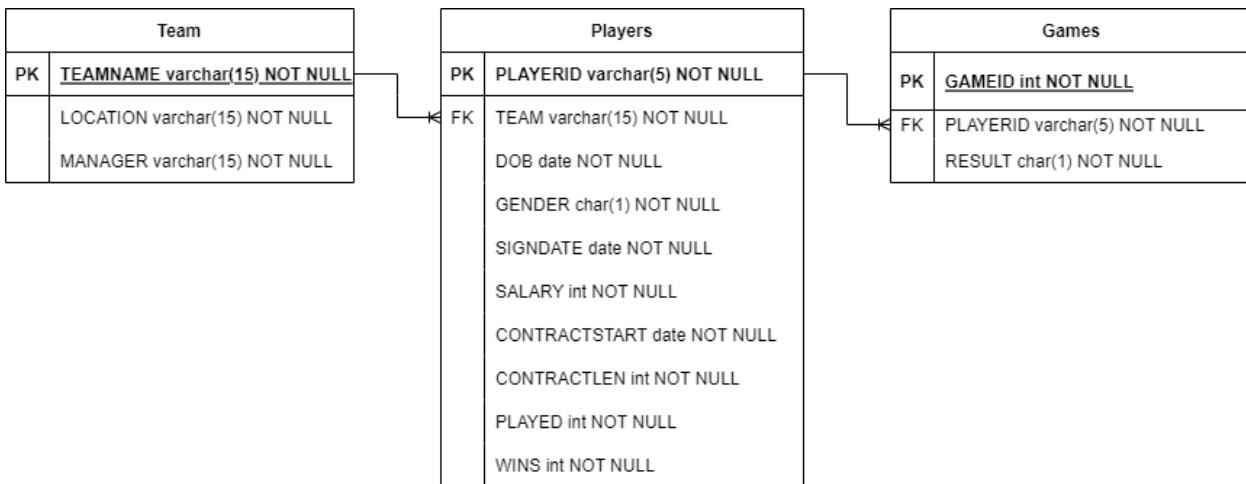
To get a better grasp on the problem, we created a decomposition diagram for the task. This is a general overview of the main subtasks that must be completed to complete our task. The diagram is pictured below.



## DB Design

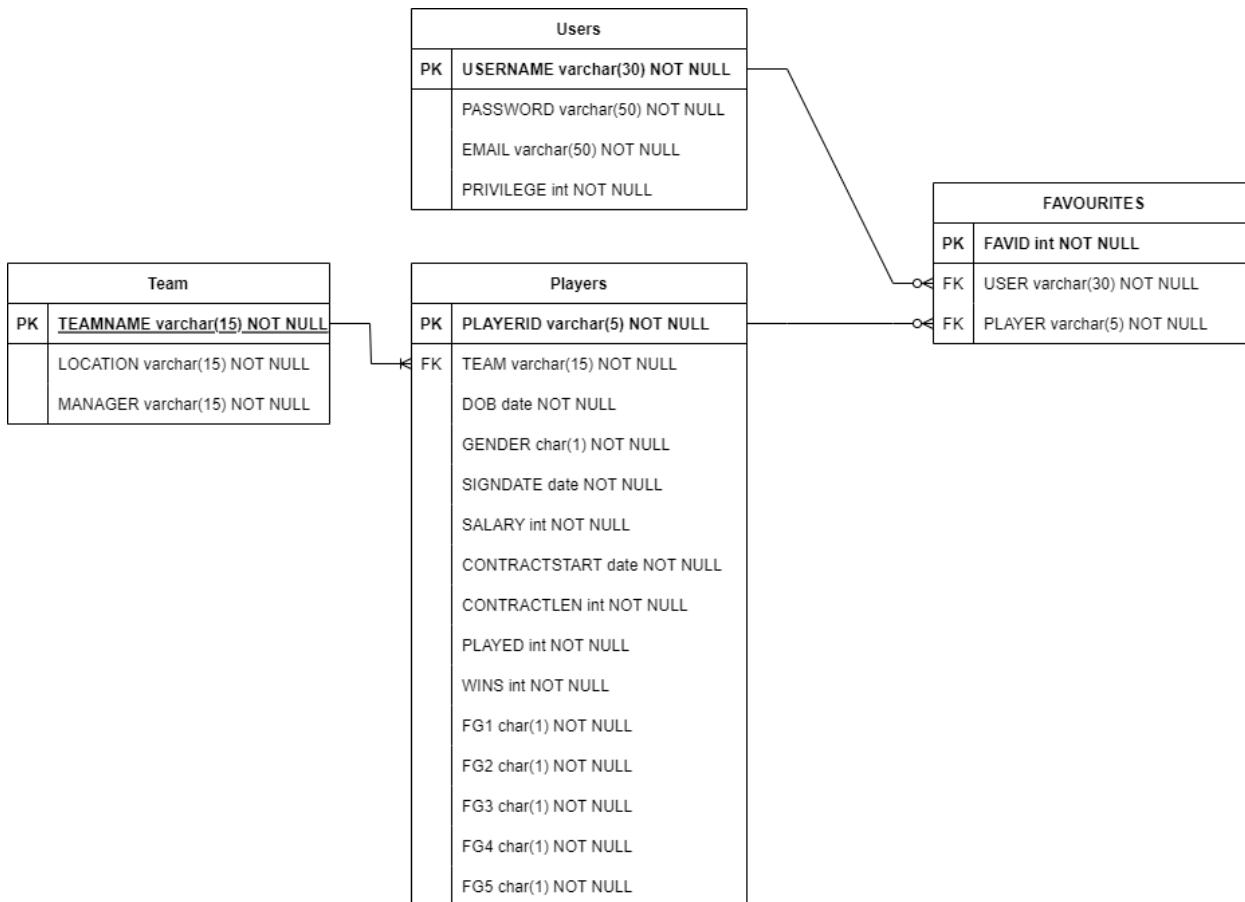


To reduce redundant elements in the database it has been normalised into 3NF. The main change we had to make for this was moving the team name, location and manager into a separate table. This is because the manager and location of a team are partially dependent on the team. It is awkward having five columns in the players' table to represent their games so we toyed with creating a separate games table as shown below:



This design would reduce the complexity of the DB by collapsing all 5 game columns into a single results column. This would help reduce lookup times as well as make it easier to add new games to the database. However, it uses more space as each player ID will now be stored 5 more times each. Since we don't need to add new games for players to the database, it is better to keep the previous design and not add more redundant data.

Later we decided to add an account system to our website, allowing users to sign in and save players, as well as allowing admin accounts to make changes to the database. the new design is shown below:



The favourites table isn't a very elegant solution as users and players will both have repeated listings since it is a many-to-many relationship. Another solution was to give each user their own favourites table, creating many one-dimensional tables that only contain playerID. Ultimately the team was uncomfortable with an implementation that dynamically created more tables so the prior solution was chosen.

## **Methodology**

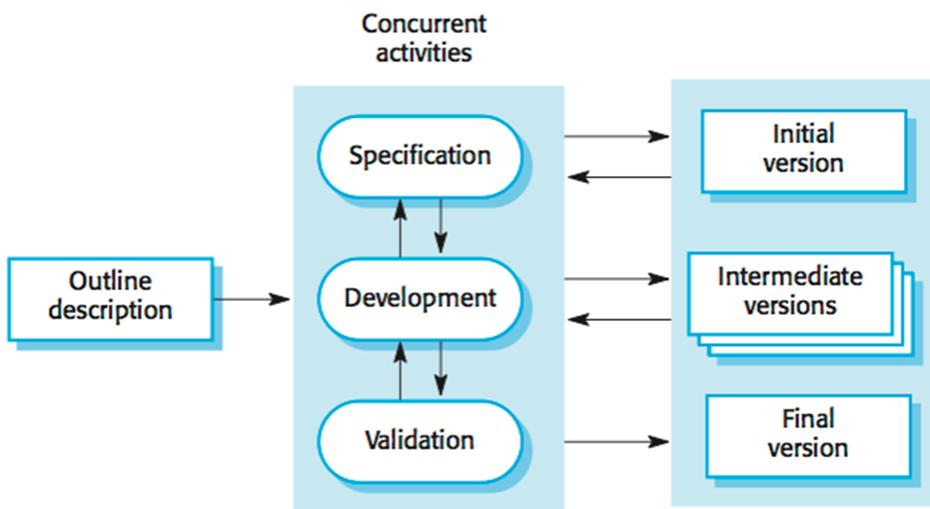
The methodology we are using is the incremental development framework. We are using it because it allows for flexibility, and is dynamic.

The model allows for constant feedback from users and clients. As each module is fully working at the end of the iteration, feedback on it can be obtained by the user and any changes or add-ons they identify can be easily modified. The flexibility of this model helps change requirements based on our functional and non-functional requirements when needed and the modules can be modified or removed without affecting the whole code.

This model allows us to create functioning modules and then build them up to make the whole website and as each module is completed at separate times and in parallel with others in the group, it allows for faster implementation and the website will be created quicker. If someone in the group is

struggling with one of the modules, others can jump in and help without affecting the rest of the code or holding up the rest of the production.

Testing and debugging are made easier using this model. Due to the stand-alone nature of each module, if one module is not working, it will not affect the rest of the code. This means that the overall production of the website and code will not come to a standstill if one module is not functioning. Risk can be identified during each iteration, making it easier to manage.



## **Sustainability**

Data architecture is a consideration of sustainability. We will retrieve data from a database every time a player is searched and algorithms are calculated based on the retrieved data. This significantly increases the amount of data collected and energy used. To combat this and make the website more sustainable, we will only fetch the data that is necessary.

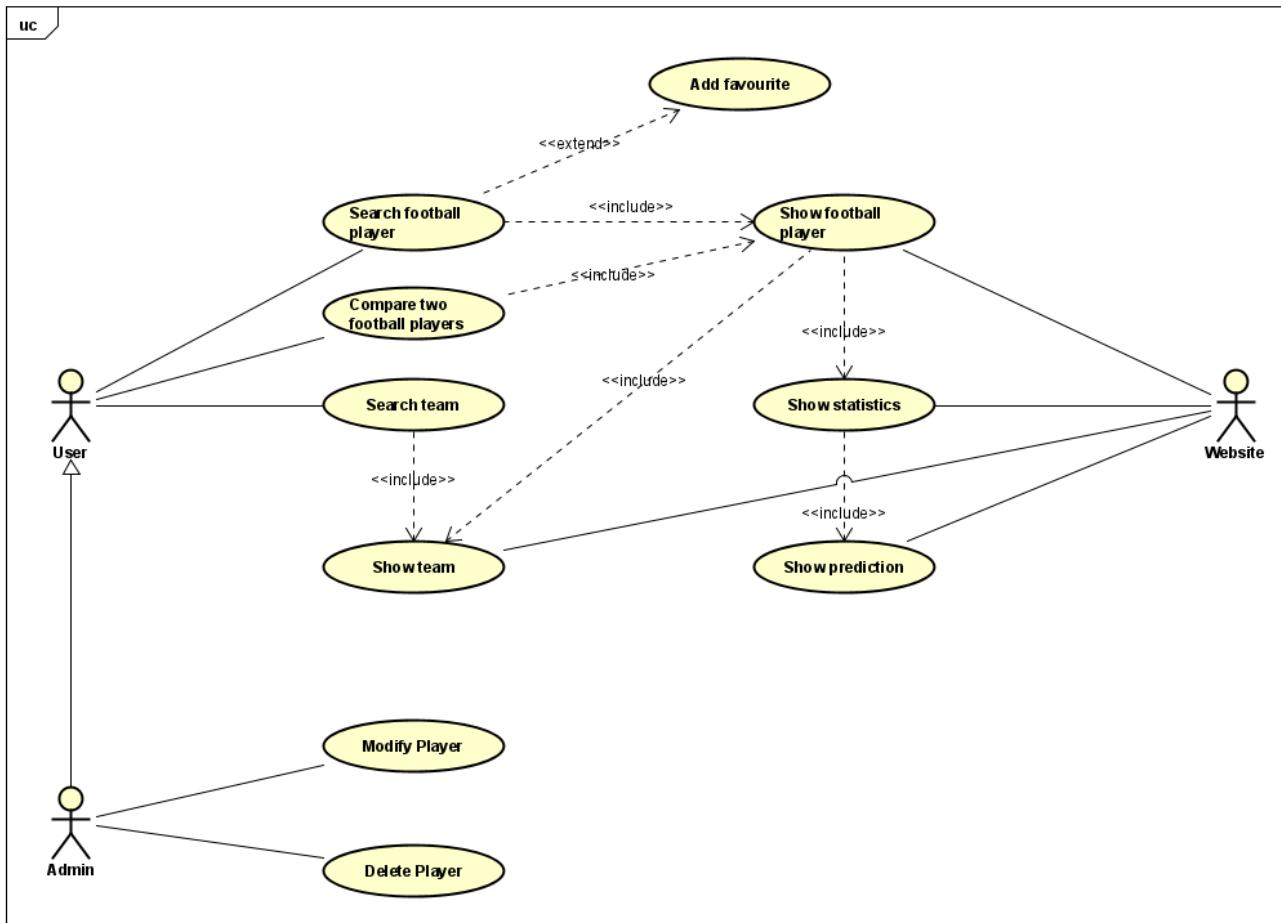
Our website will contain images of each football player, this increases the load time which in turn reduces the sustainability. To reduce energy consumption, all images need to have a reduced file size, quality and resolution. We will only include the images that are necessary for the design of our website which will save on energy usage. Not having videos will also help minimise load time and energy consumption. The images will be lossy compressed, this is because it removes more data, decreasing the load time.

Creating simple and easy-to-use navigation will increase sustainability. The navigational structure needs to be made in a way that doesn't confuse the users and also reduces the amount of time the users spend navigating around the website. Having a website with a logical structure ensures that the processes of the user are quick and efficient which will in turn increase sustainability. Having only a few pages on our website and a clear navigation bar and structure, allows the user to look for information as quickly as possible.

The code will also be streamlined to ensure that energy consumption is reduced. Only the necessary comments that help with readability will be shown, there will be no unnecessary add-ons and libraries that aren't used and the code itself will be written as efficiently as possible. The code will be split into files, instead of having it all in one file. This will mean that the contents of the files can be reused so there will be no repeating code taking up space and memory.

## DIAGRAMS

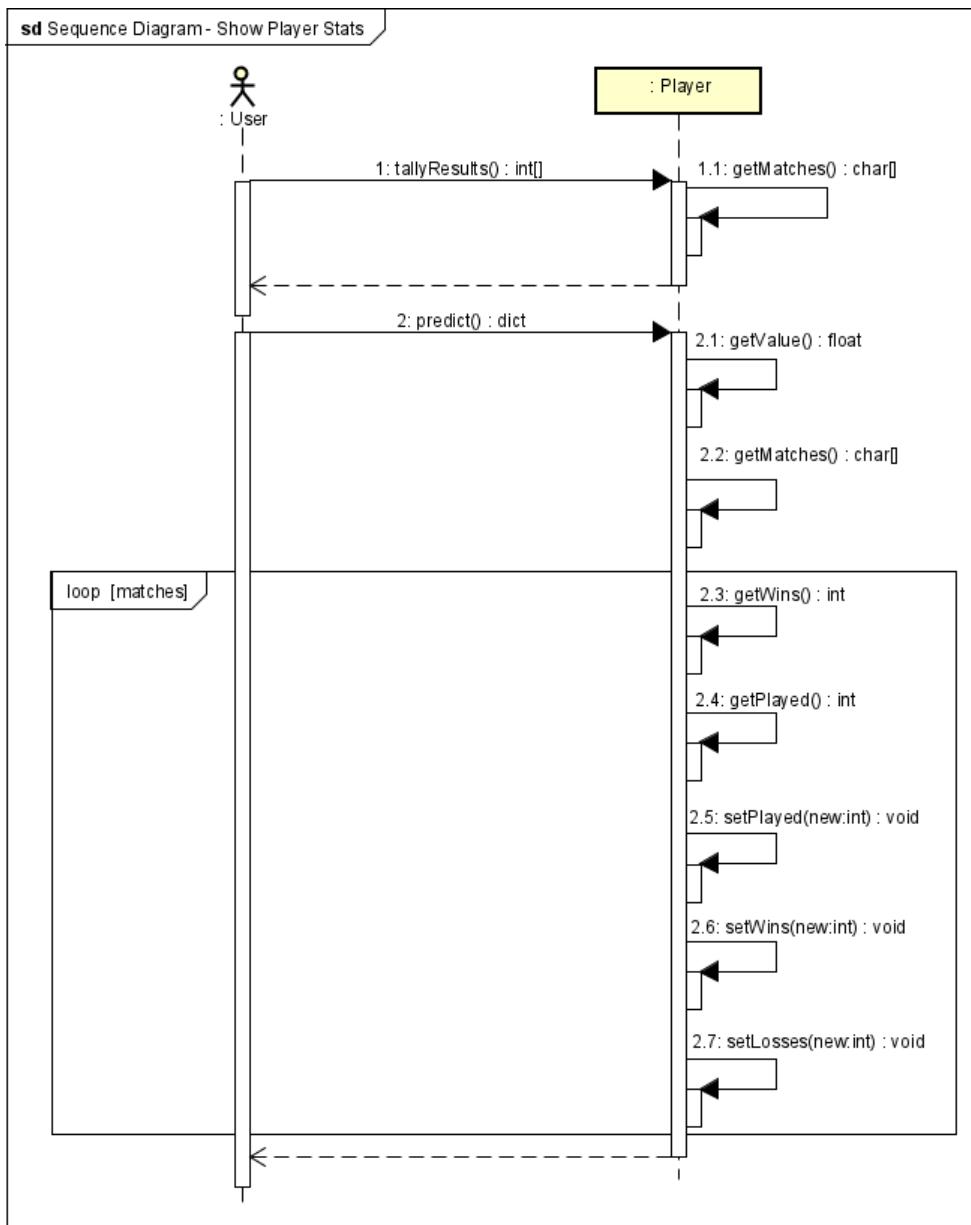
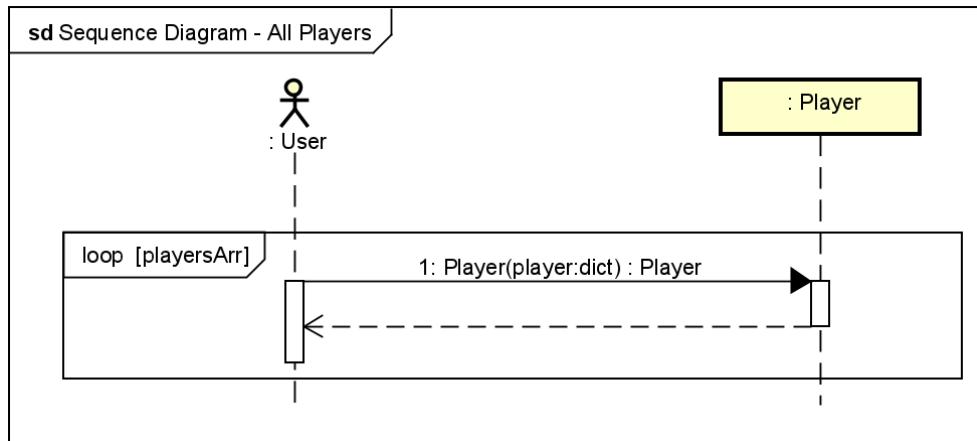
### Use cases:



## Player Class:

Player
<pre>- name : str - dateSigned : date - team : str - location : str - manager : str - salary : float - dob : date - age : int - gender : char - startContract : date - contractDuration : int - endContract : date - weeksLeft : int - gamesPlayed : int - gamesWon : int - gamesLost : int - matches : char[] - percentage : float - value : float</pre>
<pre>+ &lt;&lt;create&gt;&gt; Player(player : dict) : Player + getName() : str + getSigned() : date + getTeam() : str + getLocation() : str + getManager() : str + getSalary() : float + getDoB() : date + getAge() : int + getGender() : char + getStart() : date + getDuration() : int + getEnd() : date + getWeeksLeft() : int + getPlayed() : int + getWins() : int + getLosses() : int + getMatches() : char[] + getPercentage() : float + getValue() : float + setName(new : str) : void + setSigned(new : date) : void + setTeam(new : str) : void + setLocation(new : str) : void + setManager(new : str) : void + setSalary(new : float) : void + setDOB(new : date) : void + setAge(new : int) : void + setGender(new : char) : void + setStart(new : date) : void + setDuration(new : int) : void + setEnd(new : date) : void + setWeeksLeft(new : int) : void + setPlayed(new : int) : void + setWins(new : int) : void + setLosses(new : int) : void + setMatches(new : char[]) : void + setPercentage(new : float) : void + setValue(new : float) : void + predict() : dict + tallyResults() : int[]</pre>

## Sequence Diagrams:



## FUNCTIONAL REQUIREMENTS

Requirement ID	Priority	Description	Rationale
FR-01	MUST	Create a website.	The project description is asked for a web-based application.
FR-02	MUST	Accurate calculation for the market value of each player.	The application would be useless without correct calculations.
FR-03	MUST	Display the variation of the impact of game results on a player's potential transfer value.	The application would be useless without correct calculations.
FR-04	MUST	Read data of game results from CSV file.	Calculations are impossible without data.
FR-05	MUST	Change the player's transfer value after each game.	The application would be useless without correct calculations.
FR-06	MUST	Implement a rudimentary player search function	Will improve user experience.
FR-07	SHOULD	Admin website view	Allow users with access to manipulate the website from within the site itself.
FR-08	SHOULD	Improve the search function to be more predictive of what the user would like to search for	Allowing for a smoother experience.
FR-09	COULD	Have a page that allows users to view players within a certain team	Would allow the user to view how a team is performing.
FR-10	COULD	Allow users to upload a new CSV file of new players.	Would allow users to add their data to the site.

## NONFUNCTIONAL REQUIREMENTS

Requirement ID	Priority	Description	Rationale
NFR-01	MUST	Performance: Doing calculation in under a second.	Would make for a better user experience if everything on the website loads quickly.
NFR-02	MUST	Security: Validate user input	To ensure the website is compliant with current security guidelines, data must be handled securely and to ensure the website is secure from cyber threats
NFR-03	MUST	Security: Sanitise user input	Prevents the user from committing any SQL injection attacks on the database through the search function.
NFR-04	MUST	Accessibility: Allow the website to be easily readable.	Users with different accessibility needs will be using the website, therefore we need to make sure it's accessible. Allows for use with screen readers.
NFR-05	MUST	Responsive Design: The website adapts layout depending on the viewport used	The website should be able to be viewed on many different devices for greater portability, accessibility and responsiveness
NFR-06	MUST	Bootstrap: Use of bootstrap throughout all pages	Allows for easier development and a more consistent look with a better-looking UI
NFR-07	MUST	Portability: Website works on different browsers	Allows a wider user base by catering to users across a plethora of setups.
NFR-08	MUST	Hosting: Host the website on a server	Allows access to the website more often than if hosted locally.
NFR-09	MUST	Maintainability: The website's code must be well-organised, commented on, and easy to read and understand.	This will allow all developers to work effectively and efficiently together.

NFR-10	<b>MUST</b>	Maintainability: The website must use version control to track changes to the codebase.	This will facilitate collaboration among developers.
NFR-11	<b>MUST</b>	Maintainability: The website must have clear and up-to-date documentation, including instructions for deploying updates and resolving issues.	This would allow a new team of developers to pick up the project at a later date relatively easily.
NFR-12	<b>SHOULD</b>	Scalability: Reading data of game results from the database	Will allow for adding new players with greater ease and grant better long-term storage
NFR-13	<b>SHOULD</b>	Performance: Fast website load times through quick responses from the server.	Allows for a better user experience, and can use online tools to measure average response times.
NFR-14	<b>SHOULD</b>	Performance: Having more users on the website should not affect load times or usability.	Allows for a better user experience.
NFR-15	<b>SHOULD</b>	Accessibility: We will be complying with standards such as Web Content Accessibility Guidelines (WCAG) 2.0.	To allow easier access to a wider range of users.
NFR-16	<b>SHOULD</b>	Usability: The website will provide clear and intuitive navigation that allows users to find what they need quickly	Encourages the user to come back to the website again as they will remember that it is quick and easy to use.
NFR-17	<b>COULD</b>	Accessibility: Having a translate function	Allows users from other countries or who speak a different language to access the website.

NFR-18	<b>COULD</b>	Hosting: Aim for 99% uptime for the website	This would allow users consistent access to the website, which would increase a user's confidence.
NFR-19	<b>COULD</b>	Scalability: Design UI to handle larger datasets and design systems to process larger volumes of data	In a real-world implementation this would allow for real-life data to be used.
NFR-20	<b>COULD</b>	Search: Allows indexing of database to search for a specific player	Would allow the website to be more user friendly. Instead of having to manually look through all players, the user can search for them instead.
NFR-21	<b>COULD</b>	Security: Comply with GDPR rules	A legal requirement.
NFR-22	<b>COULD</b>	Account System: Allow users to log in and save certain preferences/player data	The user may need to have an account to use the website.

### Abstract

In this literature review, we will research the problem topic, a value-based football player transfer system, and look at the tools we will use throughout the project; and the application area of the project. The tools used are mostly self-explanatory and primarily focus on Python for web development through both front and back ends, with any frameworks or supporting modules necessary. Furthermore, we will talk about project management-related tools like GitLab for version control or the use of Discord for communication between group members. For the application area, we looked into managing a project effectively and how to develop a web application as a team. We recognise the overlaps across the three topics but have researched them and presented them as individual sections where possible.

### Problem Topic

The most immediate point of reference that we found for a web-based transfer program was the popular website Transfermarkt. Transfermarkt is a German-based website with a wealth of footballing information available to the end user. We limited the scope of our research on Transfermarkt by focusing primarily on the player transfer value section and not the opinion pieces or news.

The significant difference between our project and Transfermarkt is how both systems create transfer value for players. In our project, we are using a model based on player performance to determine the value of players, whereas Peeters (2018) explains that within Transfermarkt, “a crowd of registered users assess the value of professional soccer players”. However, this is not the complete picture. Transfermarkt (2021) further explains that they work out their player values by understanding that “both individual transfer modalities and situational conditions are relevant in determining market values”.

From this research, it is clear that while our project and Transfermarkt are tools that can determine a player's transfer value, they differ broadly in their approach to what a player's “value” really is. While our system is purely based on data, their approach tends to be more subjective.

In contrast, a more similar and apt comparison could be with the work of Poli, Ravenel and Besson (2020). In this, the authors work to create a model for determining player transfer value over time. They consider multiple factors affecting a player's value, such as age, contract duration and performance. They also consider factors that are out of scope for our project but are very interesting when analysing a player's value. For instance, they reference the club's sporting and economic level and put the player's value into the context of the time by looking at inflation over the years studied.

Through their work, we can see some potential extra features that we could include within our project to create a more real-world accurate estimation of a player's potential value. Their features analysed works to create a far more realistic and scientific approach than Transfermarkt's highly subjective view of a player's value.

## Development Tools

Python will play a pivotal role in our football player value website. We have chosen Python because of its versatility during the development process. It is also the language that our whole development team is most familiar with. The number of libraries available will provide us with a rich set of tools throughout the project, saving us significant time. We will be using Python Flask, a framework for developing web applications. Flask will allow us to build a robust and scalable web application that integrates front and back-end development. Grinberg's book (2018) serves as a great starting point for understanding Flask and learning how to develop a website.

With Flask handling the back end, we will use Bootstrap to assist with the front end. Spurlock's book (2013) helps to "get you started building pages with Bootstrap's HTML/CSS-based trolls and design templates right away." Spurlock's book and the Bootstrap official documentation will be invaluable for our project.

Another critical tool that we will employ is phpMyAdmin. This software allows us to design and create the database schema and subsequently manage and manipulate the data given to us. A database is vital for storing and retrieving player data. It also allows us to future-proof the web application by allowing more data down the line. We will model our design process on research by Letkowski (2015), in which he details the process as "Analysis... Model Building... Schema Generation". This three-step process allows for an easy breakdown and understanding of designing and building a functional database with phpMyAdmin.

GitLab is a web-based version control system built on top of Git. Research by Valdivia (2019) found that "any professional career in engineering should use these tools". Here Valdivia is not talking about Computer Science but is instead approaching it from an Engineering point of view. However, their findings show that collaborative work through the use of GitLab can drastically improve student performance in project work. Therefore, it would be wise for us to use GitLab as a version control system to encourage better collaborative work.

Lastly, a Linux-based server will host the website. Research by Hussain et al. (2015) found that "Linux is the choice if you are looking for a server that will be secure, cost-efficient, stable and will allow for maximum configurability". Linux servers are known for their stability and reliability, essential for hosting a web application that needs to be near-permanently available to multiple users.

Research by Economides and Katsamakas (2006) found "investment in applications is stronger when the operating system is open source". The findings indicate that an increasing number of individuals choose Linux for server-side projects due to its open-source nature. As a result, Linux

instances can be set up effortlessly for web-based hosting. Moreover, Linux's open-source nature makes it a more cost-effective option than other servers, as a licence does not need to be purchased.

We have decided to use Discord for communication but have also looked into other tools, such as Microsoft Teams. Through the research done by Heinrich, Thomas and Kahu (2022), we know that when looking into the effect of the above tools on student performance and satisfaction, they found that "adding Discord or Teams increased information and knowledge exchange and helps students to connect with peers". Furthermore, they mention that "Discord is a simpler tool with less complexity than Teams".

In addition, work by Fonseca Cacho (2020) found that Discord "increased engagement" when compared to more traditional methods of communication and that "80.9% of the surveyed believed that their grade improved as a result of Discord". Here we can see the belief from students that Discord can help with confidence levels in terms of work at a university level.

Therefore, we decided to use Discord to work more efficiently and effectively as a team without any unneeded complexity associated with Microsoft Teams.

## Application Area

The application area of our project is a web-based project management exercise. As such, we looked into both web-based aspects and how to effectively manage our project.

One area to look into was user interface (UX). By studying UX, we can design and produce better software. In his book, Spolsky (2001) states that "a user interface is well designed when the program behaves exactly how the user thought it would". Despite the age of the book, it is an important work that has not changed and Spolsky's understanding of how a user perceives programs is invaluable.

The correct development methodology is vital to creating a successful piece of software. Through their research, Molina-Rios and Pedreira-Souto (2019) believe that the UML-Based Web Engineering (UWE) method of web development is the "most suitable methodology for web development under dynamic environments," dynamic here meaning that knowledge and requirements are in flux. They found that UWE was the most widely used methodology, though they noted that most companies use their hybrid methodologies that they couldn't account for. WebML and UML are both worth talking about when it comes to web methodologies. Although not methodologies in their own right, the use of modelling before development is very useful in any form of software development. Brambilla *et al.* (2008) show that usage of WebML can be further consolidated through WebRatio, a modelling and development tool. They state that "an integrated development environment supporting the modelling of applications with WebML" is widely used in the industry.

We have found another widely used development methodology, namely the incremental build model. Graham (1992) states that “there are significant benefits both for developers and users” when it comes to using an incremental development model. They go on to describe incremental build modelling as separating the development into several sections and then designing, coding, testing and documenting a section before then starting on to the next one. We believe that this model will be the most effective for the development of our website due to its flexibility and ability to add more features to the website if we come up with them down the line.

Another important concept in web development is the idea of web accessibility. Most importantly, how developers can create websites that are usable by the highest percentage of users despite any disabilities that may affect them. Kearney-Volpe and Hurst (2021) discuss how “there is little formal literature about the accessibility of web development with a screen reader”. Through their article, they hope to encourage more developers to take in the issues associated with the current web accessibility practices and discuss how they can be improved. We can take their work to understand how important it is to improve websites for those with disabilities.

Cybersecurity is a crucial element of web development which must be given close attention throughout our development process. We will use industry-standard programming practices to prevent the most common of these cyber security vulnerabilities, such as SQL injections and XSS attacks. An SQL injection attack takes advantage of unsanitised data being fed into calls to the database. Halfond W.G et al. (2006) warn that “attackers can even use an SQL injection vulnerability to take control of and corrupt the system that hosts the Web application”. To combat this, we will minimise opportunities for users to input their data into the website without first sanitising it. We will do this to prevent any unsanitised data from being fed into our database, which could then leave us open to SQL injection attacks. However, it should be noted, as Halfond W.G. et al. (2006) point out, prevention methods are only partially safe and that most methods struggle with attacks using alternate encodings.

Search Engine Optimization (SEO) means optimising a website to increase its visibility and ranking on search engine pages. Enge et al. (2012) that while SEO is a technical practice, it is more of a “marketing function.” For this reason, we have chosen to put little emphasis on SEO in this project, but there are still some key points to go over. Enge et al. (2012) further explain that the best way to optimise raw website traffic is to make it accessible, easily shareable and highly crawlable. To improve the SEO for our website, we wish to optimise content with relevant keywords embedded in the site. In addition, we aim to keep the overall structure simple so that users and crawlers can easily navigate our website.

## Conclusion

Throughout this literature review, we have focused on three aspects of our systems development project. We have looked at the problem topic, the development tools and the application area. Through a review of the available research, we hope to have found the best practices and methods for creating a web-based footballer transfer value website. By looking into what tools we could use, we have identified the best and most convenient for us to complete the project regarding both

development and communication. By looking into other examples of footballer transfer value analysis, we have seen how some websites rely on personal opinion to determine a player's transfer value and how others use a far more scientific approach. We have chosen a purely data-based method to work out transfer values. Finally, by looking into UX, cyber security, SEO, accessibility and development methodologies, we have learnt what is technically unnecessary for developing a website but serves to make the experience as easy and safe as possible for its users.

## IMPLEMENTATION & TESTING

The website has four major phases; planning, design, development and validation.

In the planning phase, we created our aims and objectives, as well as the functional and non-functional requirements. We followed the SMART framework for objective writing as it provides clarity and the measurability aspect helps us keep track of our overall progress. We used the MoSCoW structure for our requirements since it helps prioritise the requirements from most to least critical, meaning that we can focus on the important aspects of the project, and it also allows us to be flexible in the planning phase and adjust our approach when needed. A Gantt and RACI chart was also created, this is so we could review our progress against the charts. The tasks of the Gantt chart were created based on the breakdown of the objectives and requirements. An analysis of risk was also written, this was so we could reduce any delays that we might have faced, costing and sustainability reports were created as well to ensure that we were creating as efficient code as possible.

During the design phase, we created UML diagrams and wireframes. This allowed us to visualise the system before we started the development phase and plan the layouts before the implementation. Test cases were created to help us define the scope of the website and to check for bug fixes. A thorough README was also created for the GitLab as it will help the user to run the website and get extra details.

In the development phase, static pages and layouts were created based on the wireframe design. Extra features were added based on the functional and non-functional requirements. Dynamic Jinja elements were also added to improve functionality and display. The algorithms were created for the prediction and transfer value elements of the website.

Finally, during the validation phase, we used the test cases and checked every static page viewpoint. We tested the algorithms, inputs and outputs as well as the database connections.

## Software Used

We used HTML to create the base of the website. By using the wireframe created previously, we were able to effectively make the design of the website using HTML. After that, we included Jinja to make the website dynamic. The website uses template inheritance to reduce any duplicate code and redundancies, by having template blocks for the header and footer in separate files. Jinja was also used to display the data from Python files over to the website.

```
<!-- First page that the user lands on, shows navbar and search function.-->
{% include "base.html" %}
{% block content %}
```

```
{% endblock %}

{% include "footer.html" %}
```

```
<input type="hidden" class="submit" id="playerName" name="playerName" placeholder=""
      value="{{player.name}}>
<input type="submit" class="submit" id="dateOfBirth" name="dateOfBirth" placeholder=""
      value="{{player.dateOfBirth}} ({{player.age}})">
```

We used Bootstrap to design the front end and create a dynamic website. Using Bootstrap means that the website will be responsive to different viewpoints and be able to load and be compatible with other browsers such as Safari, Firefox or Chrome. It also helps keep the website consistent in its design, with the ability to change the colours and layouts to suit each page. However, we also included some of our own CSS, to customise some elements.

```
<meta charset="utf-8">
<meta name="viewport" content="width=device-width, initial-scale=1">
<link href="https://cdn.jsdelivr.net/npm/bootstrap@5.3.0-alpha1/dist/css/bootstrap.min.css" rel="stylesheet"
```

JavaScript Chart.js was also used to create dynamic graphs that are also interactive. This allowed us to easily display the data in a visually appealing way with some animations.

```
<script src="https://cdn.jsdelivr.net/npm/chart.js"></script>

<script>
  const ctxOne = document.getElementById('lineChart').getContext("2d"); //line
  const ctxOne2 = document.getElementById('pieChart').getContext("2d");// pie

  var labelsOne = JSON.parse('{{ xlabelstojson }}');
  var pieLabelsOne = JSON.parse('{{ labelstojson }}');
  var playersDataOne = JSON.parse('{{ dataOne1tojson }}');
  var averageDataOne = JSON.parse('{{ data2tojson }}');
  var sizesOne = JSON.parse('{{ sizesOnetojson }}');
```

We used Flask to handle responses and requests. Using app routes, the website can change pages quickly. We also have sessions within the website, for the login and to retain information about what the user is doing. We are also using Python so we can integrate Flask easily.

```
@app.route('/', methods=['GET', 'POST'])
def index():
    # Cursor
    cursor = connect_db()

    # Initialise session variables if not already available
    if not session.get('playerData'):
        session['playerData'] = None
        session['allPlayerData'] = None
```

We used MySQL to integrate the database into the website and code. We created a cursor using the DictCursor function in PyMySQL as it returns the data as a dictionary.

```
# Configuration settings for accessing DB
mysql = MySQL()
app.config['MYSQL_DATABASE_USER'] = 'sd'
app.config['MYSQL_DATABASE_PASSWORD'] = 'password'
app.config['MYSQL_DATABASE_DB'] = 'SD'
app.config['MYSQL_DATABASE_HOST'] = '167.235.155.84'
app.config['MYSQL_CURSORCLASS'] = 'DictCursor'
mysql.init_app(app)

def connect_db():
    # Connect to database
    conn = mysql.connect()
    cursor = conn.cursor(pymysql.cursors.DictCursor)
    return cursor
```

## Requirements

FR-03	Done	NFR-05	Done	NFR-17	Not Implemented
FR-04	Done	NFR-06	Done	NFR-18	Done
FR-05	Done	NFR-07	Done	NFR-19	Done
FR-06	Done	NFR-08	Done	NFR-20	Done
FR-07	Done	NFR-09	Done	NFR-21	Done
FR-08	Not implemented	NFR-10	Done	NFR-22	Done
FR-09	Not implemented	NFR-11	Done		
FR-10	Not implemented	NFR-12	Done		
NFR-01	Done	NFR-13	Done		
NFR-02	Done	NFR-14	Done		
NFR-03	Done	NFR-15	Not Implemented		
NFR-04	Done	NFR-16	Done		

For the functional requirements we implemented seven out of the ten features. We created a user and admin view with a login. We implemented transfer, market and player algorithms and a basic search function. However, we didn't implement a predictive search and the ability to view how the overall team is doing. But to combat that we created a page to be able to view all the players and a page to compare players that the user chooses, instead of the teams.

For the non-functional requirements, we implemented 20 out of the 22 features. We validated and sanitised the user inputs, used Bootstrap for the design and made sure that the website is compatible with other browsers and viewpoints. We used GitLab for version control and README.md. The website loads quickly and it has been created so that it is scalable. We created an account system with login for user and admin views.

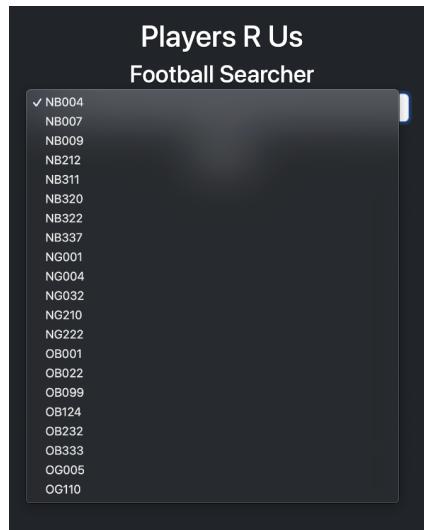
## **Test Cases:**

### **1) Search bar should show all players in the database.**

**Test Dataset:** Checks database to get players' names.

**Expected Output:** Displays names of all players.

**Output:**



**We have 21 players in our current database and the search bar shows 21 player names.**

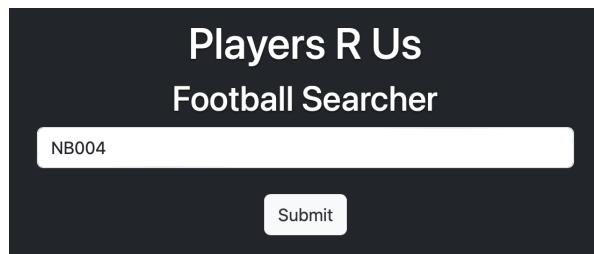
**Result: PASS**

### **2) Transfer should be done between pages when the search has been done.**

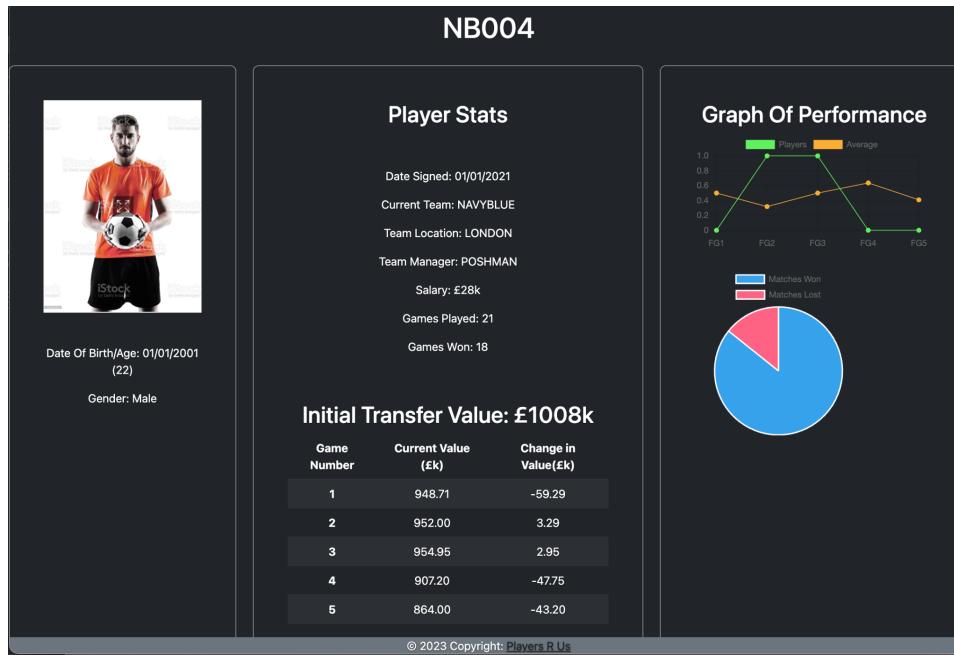
**Test Dataset:** Forwards user from homepage to player page after searching the name of player under homepage.

**Expected Output:** The user has access to the player's page after clicking the search button with the player's name.

**Output:**



Once you clicked on submit button, the page goes to:



It successfully goes to the player's page.

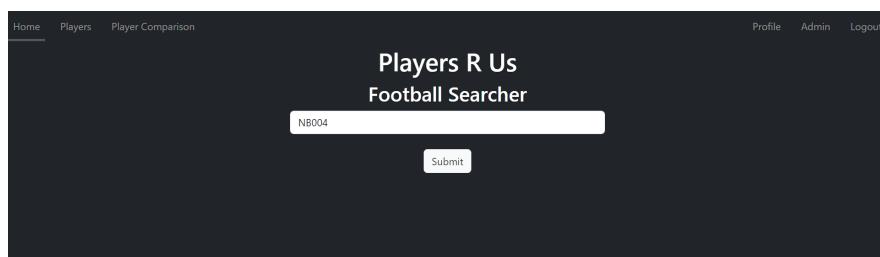
**Result: PASS**

**3) Transfer should be done between pages when clicking on the navbar.**

**Test Dataset:** Forwards user to the wanted page.

**Expected Output:** Transfer should be done between pages.

**Output:**



Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021	£28k
NB007	12/09/1998 (24)	Male	LIGHTBLUE	PRESTON	GREY	15/12/2018	£42k
NB009	24/04/2001 (22)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£50k
NB212	01/01/2000 (23)	Male	DARK KNIGHTS	NEWTOWN	BLACK	11/11/2020	£55k
NB311	22/11/1997 (25)	Male	LIGHTBLUE	PRESTON	GREY	04/07/2018	£59k
NB320	27/10/1999 (23)	Male	LIGHTBLUE	PRESTON	GREY	01/06/2016	£32k
NB322	26/07/2000 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/10/2018	£29k
NB337	12/05/1998 (24)	Male	LIGHTGREEN	COVENTRY	BROWN	01/01/2015	£27k
NG001	17/04/1997 (26)	Female	DARK GREEN	LEEDS	GREENBOX	17/04/2015	£14k

The User switches from the ‘Home’ page to the ‘Player’ page.

**Result: PASS**

**4) Player page should show a photo of the player.**

**Test Dataset:** Checks database to see if the player is female or male.

**Expected Output:** Displays image of player depending on gender.

**Output:**



When a user searches for NG222, a female player photo will be displayed.

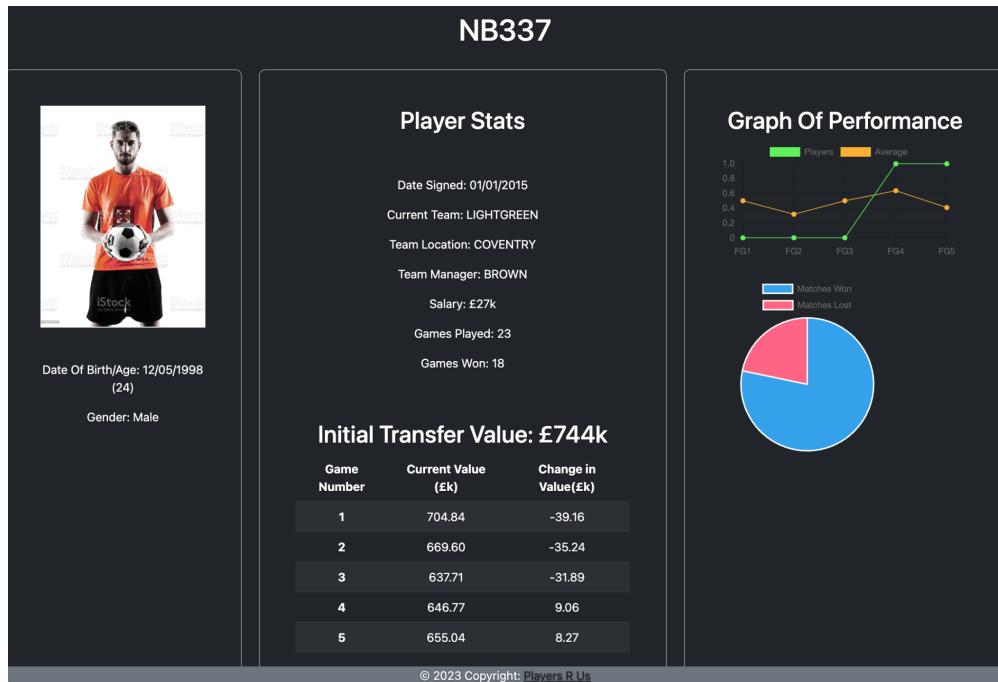
**Result: PASS**

**5) Player page should show data of the player from the CSV file.**

**Test Dataset:** Checks database to get a player's data after forwarding the user to the player's page.

**Expected Output:** Displays data of the player.

**Output:**



When a user searches for NB337, his data will be displayed on the page.

**Result: PASS**

6) Program should calculate weeks left in the current contract of salary.

**Test Dataset:** The program counts weeks between the current date and the contract end date.

**Expected Output:** The program stores how many weeks are left of a player's contract.  $((\text{contract end date} - \text{today date}) // 7 \text{ days})$ .

**Output:**

Contract end date:	2023-12-01
Today's date:	2023-4-20
Weeks left in current contract:	32

 **Calculator: weeks between two dates**  
Change the start and end dates below to calculate the number of weeks between the dates.

**Start date:** Thu, Apr 20, 2023  
**End date:** Fri, Dec 1, 2023

**32 weeks 1 day**

**For a contract that will end on the 1st of December 2023 from today(20th of April 2023), there are 32 weeks in the contract.**

**Result: PASS**

**7) Program should calculate the age of the player.**

**Test Dataset:** The program counts the days between today and the player's birthdate and converts them into age. (Age = Today - Date of Birth).

**Expected Output:** The program stores the age of a player and shows it next to birthday data.

**Output:**

<b>Date Of Birth:</b> 05/08/1999  <b>Today's date:</b> 20/4/2023  <b>Age:</b> 23	<p style="text-align: center;"><b>Age Calculator</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 33%;">Month mm</td> <td style="width: 33%;">Day dd</td> <td style="width: 33%;">Year yyyy</td> </tr> <tr> <td>8</td> <td>5</td> <td>1999</td> </tr> <tr> <td colspan="3">Date of Birth:</td> </tr> <tr> <td colspan="3">Age on this date:</td> </tr> <tr> <td colspan="3" style="text-align: center;">Age = 23 years</td> </tr> </table> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px;">Clear</span> <span style="border: 1px solid #ccc; padding: 2px 10px; border-radius: 5px;">Calculate</span> </div> <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;"> <b>Answer:</b>            Age = 23 years         </div>	Month mm	Day dd	Year yyyy	8	5	1999	Date of Birth:			Age on this date:			Age = 23 years		
Month mm	Day dd	Year yyyy														
8	5	1999														
Date of Birth:																
Age on this date:																
Age = 23 years																

**A player who was born on the 5th of August 1999 is 23 years old today(20th of April 2023).**

**Result: PASS**

#### 8) Program should calculate the win percentage.

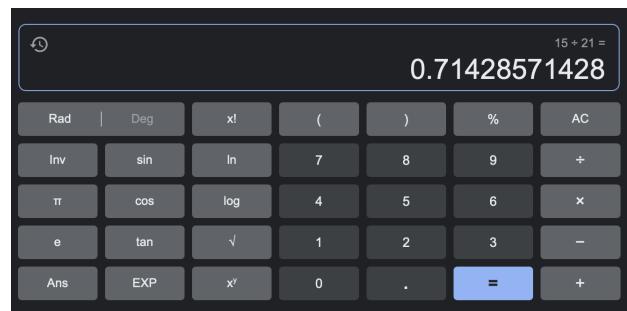
**Test Dataset:** Win percentage = number of wins/number of games played for players.

**Expected Output:** Stores win rate of players for a transfer value.

**Output:**

**Player's variables:**

Games Played: 21  Games Won: 15  Win Percentage: 0.7142857142857143
---



**Win percentage = 15 wins/ 21 games = 0.714285...**

## Result: PASS

9) Program should calculate the transfer value.

**Test Dataset:** Transfer value = current weekly salary x weeks left in the current contract x win percentage rate for the player.

**Expected Output:** Displays the transfer value of the player.

**Output:**

### Player's variables:

Salary: £50k  
Games Played: 27  
Games Won: 14  
Games Percentage: 0.5  
Weeks Left: 36



$$\text{Initial transfer value} = \text{£28k} \times 36 \text{ weeks} \times 0.5 = \text{£900k}$$

## Result: PASS

10) Players page should have data of all players in the database available.

**Test Dataset:** Gets all players' details from the database after forwarding the user to the player's page.

**Expected Output:** Display data of all players.

**Output:**

All Players							
Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	15/11/2018	£28k
NB007	12/09/1998 (24)	Male	LIGHTBLUE	PRESTON	GREY	15/12/2018	£42k
NB009	24/04/2001 (22)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£50k
NB212	01/01/2000 (23)	Male	DARK KNIGHTS	NEWTOWN	BLACK	11/11/2020	£55k
NB311	22/11/1997 (25)	Male	LIGHTBLUE	PRESTON	GREY	04/07/2018	£59k
NB320	27/10/1999 (23)	Male	LIGHTBLUE	PRESTON	GREY	01/06/2016	£32k
NB322	26/07/2000 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/10/2018	£29k
NB337	12/05/1998 (24)	Male	LIGHTGREEN	COVENTRY	BROWN	01/01/2015	£27k
NG001	17/04/1997 (26)	Female	DARK GREEN	LEEDS	GREENBOX	17/04/2015	£14k
NG004	05/08/1999 (23)	Female	LIGHTRED	OXFORD	PINKMAN	01/10/2018	£15k
NG032	13/11/1992 (30)	Female	PINKTEAM	BRISTOL	WESTMAN	11/01/2014	£21k
NG210	23/02/1999 (24)	Female	GOLDWINGS	LONDON	BRIGHTMAN	01/05/2019	£21k
NG222	01/01/2002 (21)	Female	DARK GREEN	LEEDS	GREENBOX	12/12/2019	£14k
OB001	31/07/1997 (25)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£42k
OB022	31/08/1995 (27)	Male	REDSOUTH	BRIGHTON	SOUTHMAN	31/03/2014	£33k
OB099	11/11/1999 (23)	Male	LIGHTBLUE	PRESTON	GREY	01/11/2017	£38k

All players can be seen on the players' page. Users may have to scroll down to see all depending on screen size.

**Result: PASS**

## 11)Users can log in with a validated username and password

**Test Dataset:** Correct username and password.

**Expected Output:** Successful login into the website.

**Output:**

The image shows two screenshots of a web application. The top screenshot is a 'Login' page with a dark background. It has 'Username' and 'Password' fields, both currently empty. Below them is a large blue 'Login' button. At the bottom right is a grey 'Register' button. The bottom screenshot is titled 'Player Favourites' and shows a table of player data. The columns are: Player Name, Date of Birth, Gender, Club, Club Location, Club Manager, Date Signed, and Salary. The data rows are:

Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary
NB009	24/04/2001 (22)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£50k
NG222	01/01/2002 (21)	Female	DARK GREEN	LEEDS	GREENBOX	12/12/2019	£14k
OG110	11/12/1996 (26)	Female	PINKTEAM	BRISTOL	WESTMAN	01/07/2018	£17k
NB007	12/09/1998 (24)	Male	LIGHTBLUE	PRESTON	GREY	15/12/2018	£42k

Each row has a small red 'Remove' button at the end.

**If the correct credentials are used, the user will be forwarded its saved player favourites page.**

**Result: PASS**

## 12) Users cannot log in if the username and/or password are wrong.

**Test Dataset:** Wrong username and password.

**Expected Output:** Successful login into the website.

**Output:**

The image shows a 'Login' page with a dark background. The 'Username' field contains 'user' and the 'Password' field contains '.....'. Below the fields is a large blue 'Login' button. At the bottom right is a grey 'Register' button.

The screenshot shows a dark-themed login form. At the top center is the word "Login". Below it are two input fields: "Username" and "Password". A large blue "Login" button is centered below the fields. To the right of the "Login" button is a "Register" link. At the bottom of the form, the text "Incorrect username or password" is displayed in red.

**If incorrect usernames and passwords are written, the page is refreshed back to login.**

**Result: PASS**

### 13) Users should be able to log out.

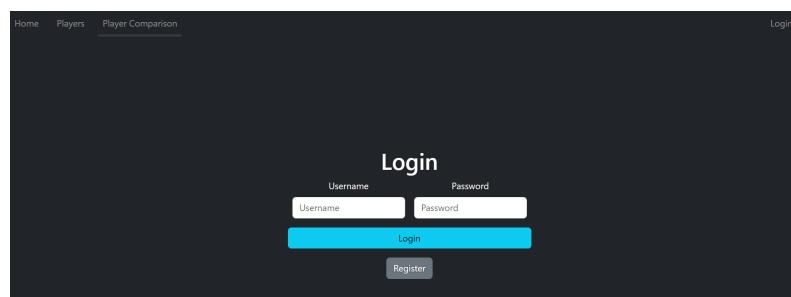
**Test Dataset:** Click the logout button on the top right after login.

**Expected Output:** Successful logout from the website.

**Output:**

The screenshot shows a table titled "Player Favourites" with the following data:

Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary	Action
NB009	24/04/2001 (22)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£50k	<button>Remove</button>
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021	£28k	<button>Remove</button>



**Once the user clicks on 'Logout' on the top right-hand side, the user is redirected to the login page.**

**Result: PASS**

### 14) Username and/or password cannot be blank to login.

**Test Dataset:** Leave the username and/or password input blank.

**Expected Output:** The website warns the user to fill in the blank.

**Output:**

The screenshot shows a dark-themed login interface. At the top center is the word "Login". Below it are two input fields: "Username" and "Password". The "Username" field is highlighted with a blue border. A red validation message box is overlaid on the "Login" button, containing the text "Please fill out this field." and an exclamation mark icon. Below the "Login" button is a "Register" button.

**Result: PASS**

- 15) Program should validate the username, email and password when the user registers.**

**Test Dataset:** Username, Email and Password.

**Expected Output:** Successfully register the user, outputting a success register message.

**Output:**

The screenshot shows a dark-themed register interface. At the top center is the word "Register". Below it are three input fields: "Username", "Email", and "Password". The "Username" field contains "tempUser" and the "Email" field contains "tempuser@user.com". The "Password" field is filled with four asterisks ("\*\*\*\*"). Below the fields is a "Register" button.

The screenshot shows a dark-themed "Player Favourites" page. At the top, there is a navigation bar with links for "Home", "Players" (which is underlined), and "Player Comparison". On the right side of the navigation bar are "Profile" and "Logout" links. Below the navigation is a table header with columns: "Player Name", "Date of Birth", "Gender", "Club", "Club Location", "Club Manager", "Date Signed", and "Salary".

**Once the user clicks the register button it forwards the user to the profile/favourites page.**

**Result: PASS**

- 16) Player comparison page should display two players' data and compare their transfer value changes.**

**Test Dataset:** The user chooses the players to compare.

**Expected Output:** The page displays both players side by side with information and graphs.

**Output:**



**Players that the user chose are displayed next to each other.**

**Result: PASS**

- 17) Users can add players to their favourites.**

**Test Dataset:** Add one player to favourites after signing in as a standard user.

**Expected Output:** The player appears on the favourites table

**Output:**

User's favourites page before.

Favorite Players								Profile	Logout
Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary		
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021	£28k	<button>Remove</button>	

Clicking on the add favourites button under the player's photo.

The screenshot shows the 'OB001' player profile. On the left, there is a photo of a man in an orange shirt holding a soccer ball. Below the photo, the text 'Date Of Birth/Age: 31/07/1997 (25)' and 'Gender: Male' is displayed, along with a green 'Add Favorites' button. The central section contains 'Player Stats' with information like Date Signed: 01/01/2017, Current Team: REDNORTH, Team Location: LIVERPOOL, Team Manager: REDMAN, Salary: £42k, Games Played: 30, and Games Won: 20. It also shows a 'Predicted Transfer Value: £2399k'. On the right, there is a 'Graph Of Performance' line chart comparing individual player data (green line) against averages (orange line) across five games (FG1 to FG5). Below the graph is a pie chart showing the distribution of wins and losses. A modal dialog box is overlaid on the page, displaying the message '127.0.0.1:5000 says Are you sure you would like to Add This Player?' with 'Cancel' and 'OK' buttons.

User's favourites page after.

Favorite Players								Profile	Logout
Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary		
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021	£28k	<button>Remove</button>	
OB001	31/07/1997 (25)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£42k	<button>Remove</button>	

**Result: PASS**

**18) Users can remove players from their favourites.**

**Test Dataset:** The selected player is clicked to be removed.

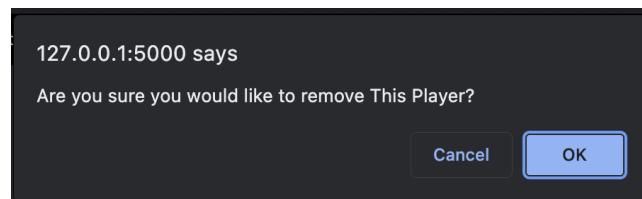
**Expected Output:** The page is refreshed and the player is removed from favourites.

## Output:

### User's favourites page before:

Player Favourites							
Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary
NB009	24/04/2001 (22)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017	£50k
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021	£28k

Clicking on the remove button in the player's row.



### User's favourites page after:

Player Favourites							
Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed	Salary
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021	£28k

Result: **PASS**

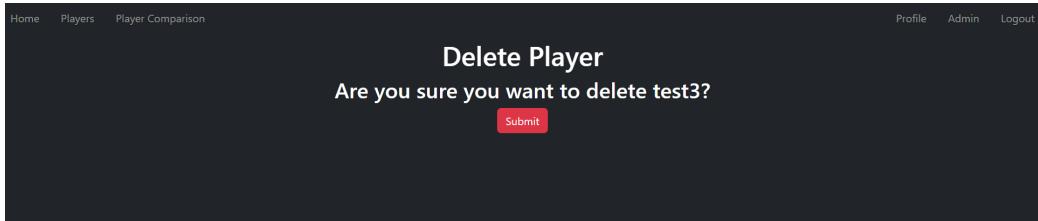
### 19) Admin can delete players from the system.

**Test Dataset:** The player is chosen to be deleted.

**Expected Output:** The player is removed from the database and admin table view.

## Output:

OG005	22/07/1991 (31)	Female	LIGHTGREEN	COVENTRY	BROWN	01/01/2011	£12k	Modify	Delete
OG110	11/12/1996 (26)	Female	PINKTEAM	BRISTOL	WESTMAN	01/07/2018	£17k	Modify	Delete
test3	22/06/1996 (26)	Female	LIGHTRED	OXFORD	PINKMAN	12/04/2023	£11k	Modify	Delete



<input type="checkbox"/>				OB124	1995-09-17	M	2017-06-15	KNIGHTS	52	2020-01-01	4	24	13	D	D	D	L	V
<input type="checkbox"/>				OB232	1998-09-01	M	2016-12-12	REDNORTH	44	2022-12-01	2	19	19	D	D	D	W	L
<input type="checkbox"/>				OB333	1999-01-04	M	2020-06-01	REDSOUTH	38	2022-12-01	2	18	17	L	L	W	W	C
<input type="checkbox"/>				OG005	1991-07-22	F	2011-01-01	LIGHTGREEN	12	2022-01-01	5	18	15	D	D	W	W	L
<input type="checkbox"/>				OG110	1996-12-11	F	2018-07-01	PINKTEAM	17	2020-09-01	3	24	18	W	W	L	L	L

OB232	01/09/1998 (24)	Male	REDNORTH	LIVERPOOL	REDMAN	12/12/2016	£44k		
OB333	04/01/1999 (24)	Male	REDSOUTH	BRIGHTON	SOUTHMAN	01/06/2020	£38k		
OG005	22/07/1991 (31)	Female	LIGHTGREEN	COVENTRY	BROWN	01/01/2011	£12k		
OG110	11/12/1996 (26)	Female	PINKTEAM	BRISTOL	WESTMAN	01/07/2018	£17k		

The final row of player 'Test 3' is removed

Result: **PASS**

**20) Admin can modify a player's date of birth, gender, salary, current team or date signed information.**

**Test Dataset:** User changes data from dropdown menus and input fields

**Expected Output:** The data changes and the table displays the modified data

**Output:**

OG005	22/07/1991 (31)	Female	LIGHTGREEN	COVENTRY	BROWN	01/01/2011	£12k		
OG110	11/12/1996 (26)	Female	PINKTEAM	BRISTOL	WESTMAN	01/07/2018	£17k		
test3	22/06/1996 (26)	Female	LIGHTRED	OXFORD	PINKMAN	12/04/2023	£11k		

A form titled "Modify Player" with the following fields:

Player Name	Date of Birth	Gender	Club	Date Signed	Salary	Operation
test3	dd/mm/yyyy <input type="text"/>	Female <input type="button" value="▼"/>	LIGHTRED <input type="button" value="▼"/>	dd/mm/yyyy <input type="text"/>	£11 <input type="text"/>	

								<a href="#">Modify</a>	<a href="#">Delete</a>
OG005	22/07/1991 (31)	Female	LIGHTGREEN	COVENTRY	BROWN	01/01/2011	£12k	<a href="#">Modify</a>	<a href="#">Delete</a>
OG110	11/12/1996 (26)	Female	PINKTEAM	BRISTOL	WESTMAN	01/07/2018	£17k	<a href="#">Modify</a>	<a href="#">Delete</a>
test3	22/06/1996 (26)	Female	LIGHTRED	OXFORD	PINKMAN	12/04/2023	£11k	<a href="#">Modify</a>	<a href="#">Delete</a>

## Data is changed based on user choice

**Result: PASS**

### 21) Website is viewable on different sized screens

**Test Dataset:** User changes the size of screen

**Expected Output:** Website functions the same and displays the data correctly

**Output:**

Player Name	Date of Birth	Gender	Club	Club Location	Club Manager	Date Signed
NB004	01/01/2001 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/01/2021
NB007	12/09/1998 (24)	Male	LIGHTBLUE	PRESTON	GREY	15/12/2018
NB009	24/04/2001 (22)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017
NB212	01/01/2000 (23)	Male	DARK KNIGHTS	NEWTOWN	BLACK	11/11/2020
NB311	22/11/1997 (25)	Male	LIGHTBLUE	PRESTON	GREY	04/07/2018
NB320	27/10/1999 (23)	Male	LIGHTBLUE	PRESTON	GREY	01/06/2016
NB322	26/07/2000 (22)	Male	NAVYBLUE	LONDON	POSHMAN	01/10/2018
NB337	12/05/1998 (24)	Male	LIGHTGREEN	COVENTRY	BROWN	01/01/2015
NG001	17/04/1997 (26)	Female	DARK GREEN	LEEDS	GREENBOX	17/04/2015
NG004	05/08/1999 (23)	Female	LIGHTRED	OXFORD	PINKMAN	01/10/2018
NG032	13/11/1992 (30)	Female	PINKTEAM	BRISTOL	WESTMAN	11/01/2014
NG210	23/02/1999 (24)	Female	GOLDWINGS	LONDON	BRIGHTMAN	01/05/2019
NG222	01/01/2002 (21)	Female	DARK GREEN	LEEDS	GREENBOX	12/12/2019
OB001	31/07/1997 (25)	Male	REDNORTH	LIVERPOOL	REDMAN	01/01/2017
OB022	31/08/1995 (27)	Male	REDSOUTH	BRIGHTON	SOUTHMAN	31/03/2014
OB099	11/11/1999 (23)	Male	LIGHTBLUE	PRESTON	GREY	01/11/2017
OB124	17/09/1995 (27)	Male	DARK KNIGHTS	NEWTOWN	BLACK	15/06/2017
OB232	01/09/1998 (24)	Male	REDNORTH	LIVERPOOL	REDMAN	12/12/2016
OB333	04/01/1999 (24)	Male	REDSOUTH	BRIGHTON	SOUTHMAN	01/06/2020
OG005	22/07/1991 (31)	Female	LIGHTGREEN	COVENTRY	BROWN	01/01/2011

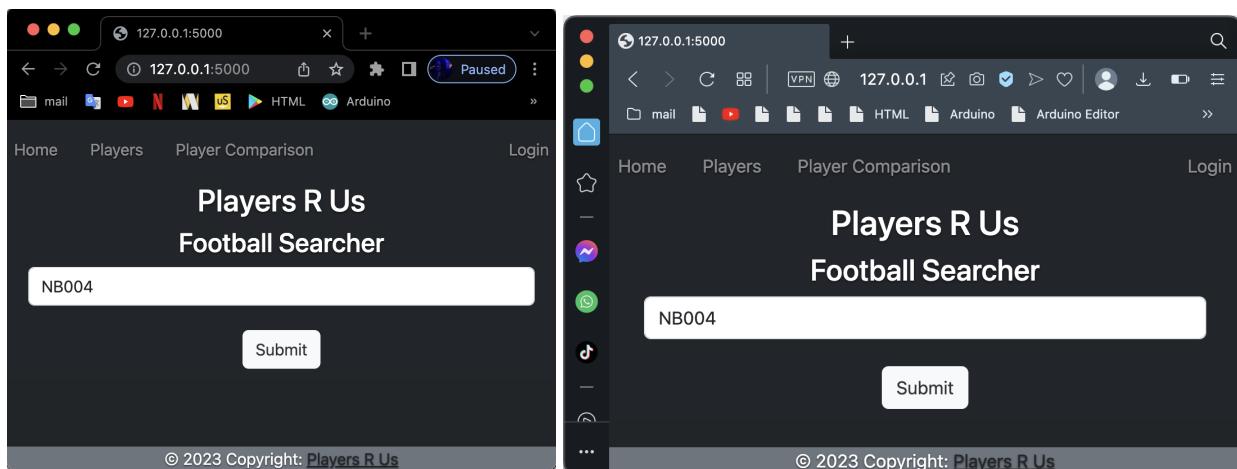
**Result: PASS**

### 21) Website should be compatible will all web browsers

**Test Dataset:** Forwards user to correct pages and inputs are handled.

**Expected Output:** The website is fully functioning.

**Output:**



The website works in different web browsers.

**Result: PASS**

## EVALUATION & LESSONS LEARNED

### WEEK 1 (2/2/2023):

#### ***Planned accomplishments in this week:***

- Team choice
- Anticipating using Python programming language
- Anticipating using MySql for database

#### **Evaluation:**

It has been assigned to project and team member choices so it does not include any other task to be mentioned.

#### **Lessons Learned:**

During the first week we began understanding what it was like to start working in a group when compared to individual work where we can work on more than one thing at a time we had to keep track and stick to what we had each been allocated to do in the first week. We learnt the best way of keeping track of our work was through creating an easy channel where we could chat with each other (Discord) to keep each other updated and ensure we were all staying on track to complete the first week's work.

### WEEK 2 (06/02/2023 - 09/02/2023):

#### ***Planned accomplishments this week:***

- Project choice - All
- Project leader choice -All
- Project aim identification - William Barnes
- SMART objective outline - Sude Fidan + Fiorella Scarpino
- Requirement Table( Functional Requirements) - Troy Akbulut

#	TASK	ASSIGNED TO	START	END	WEEK1	WEEK2	
					02-Feb	06-Feb	09-Feb
<b>Planning</b>							
1	Team and project choice	All	2/2/23	6/2/23			
2	Introduction						
3	Project Aim	William Barnes	6/2/23	6/2/23			
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23			
5	Project Planning Description						
6	RACI Matrix						
7	Literature Review						
8	Requirements	Troy Akbulut + Jack Douet	9/2/23				
9	Sustainability						
10	Analysis of risks						
11	Costing						

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
2	●	● ● ● ● ●			

## Evaluation:

Jack was the team leader for week two. We focused on planning the starting point of the project. SMART Objectives and project aims were done in week Two. We had a draft of project requirements this week as well.

## Lessons Learned:

During this week we started to discover that when working collaboratively, everyone won't always have the same opinion about what should be done. This is an inherent challenge with group work and during this week we started to understand how each other's minds worked and how we had different approaches to work. Through this developed understanding we were able to work efficiently as a team. At this stage there was only base-level planning that needed doing so there wasn't much opportunity to see how everyone worked outside of the design phase, this came later.

## WEEK 3 (13/02/2023 - 16/02/2023):

<b>Planned accomplishments in this period:</b>							
#	TASK	ASSIGNED TO	START	END	WEEK1	WEEK2	WEEK3
<b>Planning</b>							
1	Team and project choice	All	2/2/23	6/2/23			
2	Introduction						
3	Project Aim	William Barnes	6/2/23	6/2/23			
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23			
5	Project Planning Description						
6	RACI Matrix						
7	Literature Review						
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23			
9	Sustainability						
10	Analysis of risks						
11	Costing						
<b>Design</b>							
1	Wire frames	William Barnes	16/2/23	17/2/23			
2	Football Player database design	Troy Akbulut	16/2/23				
3	User database design						
4	Player use case diagram						
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23			
6	Player sequence diagram						
7	User use case diagram						
8	User class diagram						
9	User sequence diagram						
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23			
11	UML diagram						
12	Test Cases						
13	README.md						

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
3					

## Evaluation:

Sude was the team leader for week three. This week, four of us focused on designing wireframes, a player database and diagrams. Jack finalised the requirements so his name was the one that was under planning in the RACI Chart. Team members got ready to develop the project for next week.

## Lessons Learned:

In this week we came across something we haven't done before: Gantt Chart and we have realised that it is making it a lot easier to understand what it's done, what needs to be improved and what we are gonna do next. We also had some important discussions about the front end of our pages. As a team we had to decide together so we understood each other's way of implementation. In terms of diagrams, we have only started with player's diagrams because we weren't sure if we will start to implement any account system since it's not a must non-functional requirement.

## WEEK 4 (20/02/2023 - 23/02/2023):

<i>Planned accomplishments in this period:</i>
<ul style="list-style-type: none"> <li>● <i>Dynamic Ninja elements - William Barnes</i></li> <li>● <i>Team static pages - Troy Akbulut</i></li> <li>● <i>Search static pages - Sude Fidan</i></li> <li>● <i>Flask Routes - Jack Douet</i></li> <li>● <i>Literature review - William Barnes</i></li> <li>● <i>Database design- Troy Akbulut</i></li> <li>● <i>Sequence diagram - Troy Akbulut</i></li> <li>● <i>Use case diagram - Sude Fidan</i></li> <li>● <i>Sustainability - Fiorella Scarpino</i></li> <li>● <i>Transfer value algorithm - Sude Fidan</i></li> <li>● <i>Prediction Algorithm - Troy Akbulut</i></li> </ul>

#	Task	Assigned To	Start	End	Week1		Week2		Week3		Week4	
					02-Feb	06-Feb	09-Feb	13-Feb	16-Feb	20-Feb	23-Feb	
<b>Planning</b>												
1	Team and project choice	All	2/2/23	6/2/23								
2	Introduction											
3	Project Aim	William Barnes	6/2/23	6/2/23								
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23								
5	Project Planning Description											
6	RACI Matrix											
7	Literature Review	Jack Douet+William Barnes+Troy Abulut	20/2/23									
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23								
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23								
10	Analysis of risks											
11	Costing											
<b>Design</b>												
1	Wire frames	William Barnes	16/2/23	17/2/23								
2	Football Player database design	Troy Akbulut	16/2/23	20/2/23								
3	User database design											
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23								
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23								
6	Player sequence diagram	Troy Akbulut	20/2/23	20/2/23								
7	User use case diagram											
8	User class diagram											
9	User sequence diagram											
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23								
11	UML diagram											
12	Test Cases											
13	README.md											
<b>Development</b>												
1	Search Static pages	William Barnes+Sude Fidan	20/2/23									
2	All players static pages											
3	Team Static Pages	Jack Douet+Troy Akbulut+ Fiorella Scarpino	20/2/23									
4	Player comparison static pages											
5	User login static page											
6	Admin Page											
7	Profile/Favourites page											
7	Database population and implementation											
8	Dynamic Jinja elements	William Barnes+Fiorella Scarpino	20/2/23									
9	Flask routes	Jack Douet	20/2/23	23/2/23								
10	Dynamic Javascript elements											
11	Transfer value algorithms	Sude Fidan	23/2/23	23/2/23								
12	Prediction algorithms	Troy Akbulut	23/2/23	23/2/23								

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
4	●	● ●	● ●	● ● ● ●	

### Evaluation:

Fiorella was the team leader of week four. This week, we started to develop the webpage. Sude and Troy worked as designers and developers at the same time. Sude Fidan worked on static pages and transfer value algorithms. Troy also worked on static pages, prediction algorithms for player pages as well as database design. Jack prepared the flask routes while William was developing Jinja elements for the website. Fiorella started to work on a sustainability report. William also had the role of planner because of writing the literature review.

### Lessons Learned:

This week we created the designs for the website. We found that we needed to spend more time on the dynamic Jinja elements than we initially planned to make the website more dynamic, so we spent the next few weeks making sure it was all complete. We also started to write the literature review. We decided that we had to create a detailed plan over the next few days for who was going to write what part.

## **WEEK 5 (27/02/2023 - 02/03/2023):**

### ***Planned accomplishments in this period:***

- Literature review - Jack Douet
- The analysis of risks - Sude Fidan
- Project Planning and Team Roles - Troy Akbulut
- Test cases - Fiorella Scarpino
- Search static pages - William Barnes
- Team static page - Troy Akbulut
- Dynamic Ninja elements - Fiorella Scarpino

#	TASK	ASSIGNED TO	START	END	WEEK1	WEEK2	WEEK3	WEEK4	WEEKS				
					02-Feb	06-Feb	09-Feb	13-Feb	16-Feb	20-Feb	23-Feb	27-Feb	02-Mar
<b>Planning</b>													
1	Team and project choice	All	2/2/23	6/2/23									
2	Introduction												
3	Project Aim	William Barnes	6/2/23	6/2/23									
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23									
5	Project Planning Description	Fiorella Scarpino+Troy Akbulut	27/2/23										
6	RACI Matrix												
7	Literature Review	Jack Douet+William Barnes+Troy Abulut	20/2/23										
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23									
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23									
10	Analysis of risks	Sude Fidan + Fiorella Scarpino	27/2/23										
11	Costing												
<b>Design</b>													
1	Wire frames	William Barnes	16/2/23	17/2/23									
2	Football Player database design	Troy Akbulut	16/2/23	20/2/23									
3	User database design												
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23									
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23									
6	Player sequence diagram	Troy Akbulut	20/2/23	20/2/23									
7	User use case diagram												
8	User class diagram												
9	User sequence diagram												
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23									
11	UML diagram												
12	Test Cases	Sude Fidan + Fiorella Scarpino	27/2/23										
13	README.md	Sude Fidan+Jack Douet											
<b>Development</b>													
1	Search Static pages	William Barnes+Sude Fidan	20/2/23										
2	All players static pages												
3	Team Static Pages	Jack Douet+Troy Akbulut+ Fiorella Scarpino	20/2/23										
4	Player comparison static pages												
5	User login static page												
6	Admin Page												
7	Profile/Favourites page												
8	Database population and implementation												
9	Dynamic Ninja elements	William Barnes+Fiorella Scarpino	20/2/23										
10	Flask routes	Jack Douet	20/2/23	23/2/23									
11	Dynamic Javascript elements	Fiorella Scarpino	2/3/23	2/3/23									
12	Transfer value algorithms	Sude Fidan	23/2/23	23/2/23									
	Prediction algorithms	Troy Akbulut	23/2/23	23/2/23									
WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER								
5	🟡	🔵🟣🟡	🔴	🔴🟡🟢🔵									

### **Evaluation:**

Troy is the team leader of week five. He has worked as a planner and developer. Troy finalised the steps that team members should follow when he also has done some work on the search page. The risk register has been done by Sude. Fiorella started to write some test cases, however, test cases haven't been done in only a week since some features have been added to the website later on. Only 'must' requirements were added to test cases for this week. She also had some time on dynamic Ninja elements. Jack took the responsibility of writing a literature review after last week. This week William switched to work on some development to do some bug fixes for the search page after all the algorithms have been applied to the program and appeared on the page.

### **Lessons Learned:**

Not having done any form of risk assessment before, this was a great learning experience that required research into identifying, analysing and properly mitigating risks. Due to this,

however, we required more time than expected to finish this and continued into the next week. For the literature review, we decided to split it into three phases: research, draft, and edit. These phases would be repeated several times to come to a final product. This proved to work excellently, splitting the work effectively and keeping everyone engaged with the work.

## WEEK 6 (06/03/2023 - 09/03/2023):

### ***Planned accomplishments in this period:***

- RACI matrix - Sude Fidan
- README.md - Sude Fidan
- The analysis of risks - Fiorella Scarpino
- Costings - Fiorella Scarpino
- Search static pages - William Barnes
- Dynamic Ninja elements - Fiorella Scarpino
- Testing static pages - Jack Douet
- Testing transfer algorithms - Troy Akbulut

#	TASK	ASSIGNED TO	START	END	WEEK1 02-Feb	WEEK2 06-Feb	WEEK3 09-Feb	WEEK4 13-Feb	WEEK5 16-Feb	WEEKS 20-Feb	WEEK6 23-Feb	WEEKS 27-Feb	02-Mar	WEEK6 06-Mar	09-Mar	
<b>Planning</b>																
1	Team and project choice	All	2/2/23	6/2/23												
2	Introduction															
3	Project Aim	William Barnes	6/2/23	6/2/23												
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23												
5	Project Planning Description	Fiorella Scarpino+Troy Akbulut	27/2/23													
6	RACI Matrix															
7	Literature Review	Jack Douet+William Barnes+Troy Abulut	20/2/23													
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23												
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23												
10	Analysis of risks	Sude Fidan + Fiorella Scarpino	27/2/23													
11	Costing															
<b>Design</b>																
1	Wire frames	William Barnes	16/2/23	17/2/23												
2	Football Player database design	Troy Akbulut	16/2/23	20/2/23												
3	User database design															
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23												
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23												
6	Player sequence diagram	Troy Akbulut	20/2/23	20/2/23												
7	User use case diagram															
8	User class diagram															
9	User sequence diagram															
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23												
11	UML diagram															
12	Test Cases	Sude Fidan + Fiorella Scarpino	27/2/23													
13	README.md	Sude Fidan+Jack Douet														
<b>Development</b>																
1	Search Static pages	William Barnes+Sude Fidan	20/2/23													
2	All players static pages															
3	Team Static Pages	Jack Douet+Troy Akbulut+Fiorella Scarpino	20/2/23													
4	Player comparison static pages															
5	User login static page															
6	Admin Page															
7	Profile/Favourites page															
8	Database population and implementation															
9	Dynamic Ninja elements	William Barnes+Fiorella Scarpino	20/2/23													
10	Flask routes	Jack Douet	20/2/23	23/2/23												
11	Dynamic Javascript elements	Fiorella Scarpino	2/3/23	2/3/23												
12	Transfer value algorithms	Sude Fidan	23/2/23	23/2/23												
13	Prediction algorithms	Troy Akbulut	23/2/23	23/2/23												
<b>Validation</b>																
1	Testing input validation															
2	Testing prediction algorithms															
3	Testing transfer algorithms															
4	Testing static pages															
5	Testing viewpoints															
6	Testing user login															
7	Testing player comparison algorithms															
8	Testing navbar functions															

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
6	●	● ●	●	● ●	● ● ●

### **Evaluation:**

William was the team leader for week six. He was responsible for implementing search static pages. Sude had begun the RACI matrix for better planning and the README.md file for GitLab. Fiorella did some research and wrote about risk analysis and costing. She was also part of the development of implementing dynamic Ninja elements for the web pages. Jack and Troy were testing static pages and transfer algorithms respectively.

**Lessons Learned:** During the development stages we learnt that making use of regular testing whilst developing (DevOps) We were able to identify and address issues quickly in the code with use of effective communication and through working together we could create a cohesive user experience by implementing dynamic Ninja Elements.

## WEEK 7 (13/03/2023 - 16/03/2023):

<b>Planned accomplishments in this period:</b>												
		ASSIGNED TO	START	END	WEEK1 02-Feb	WEEK2 06-Feb	WEEK3 09-Feb	WEEK4 13-Feb	WEEK5 16-Feb	WEEK6 20-Feb	WEEK7 23-Feb	WEEK8 27-Feb
1	Team and project choice	All	2/2/23	6/2/23								
2	Introduction											
3	Project Aim	William Barnes	6/2/23	6/2/23								
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23								
5	Project Planning Description	Fiorella Scarpino+Troy Akbulut	27/2/23	6/3/23								
6	RACI Matrix	Sude Fidan	9/3/23	13/3/23								
7	Literature Review	Jack Douet+William Barnes+Troy Abulut	20/2/23									
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23								
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23								
10	Analysis of risks	Sude Fidan + Fiorella Scarpino	27/2/23	6/3/23								
11	Costing	Fiorella Scarpino+Troy Akbulut	9/3/23									
<b>Design</b>												
1	Wire frames	William Barnes	16/2/23	17/2/23								
2	Football Player database design	Troy Akbulut	16/2/23	20/2/23								
3	User database design											
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23								
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23								
6	Player sequence diagram	Troy Akbulut	20/2/23	20/2/23								
7	User use case diagram											
8	User class diagram											
9	User sequence diagram											
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23								
11	UML diagram	Jack Douet	13/3/23									
12	Test Cases	Sude Fidan + Fiorella Scarpino	27/2/23									
13	README.md	Sude Fidan+Jack Douet	6/3/23									
<b>Development</b>												
1	Search Static pages	William Barnes+Sude Fidan	20/2/23									
2	All players static pages	Sude Fidan	13/3/23									
3	Team Static Pages	Jack Douet+Troy Akbulut+Fiorella Scarpino	20/2/23									
4	Player comparison static pages											
5	User login static page											
6	Admin Page											
7	Profile/Favourites page											
7	Database population and implementation											
8	Dynamic Ninja elements	William Barnes+Fiorella Scarpino	20/2/23	9/3/23								
9	Flask routes	Jack Douet	20/2/23	23/2/23								
10	Dynamic Javascript elements	Fiorella Scarpino	2/3/23	2/3/23								
11	Transfer value algorithms	Sude Fidan	23/2/23	23/2/23								
12	Prediction algorithms	Troy Akbulut	23/2/23	23/2/23								
<b>Validation</b>												
1	Testing input validation	William Barnes	13/3/23	16/3/23								
2	Testing prediction algorithms											
3	Testing transfer algorithms	Troy Akbulut	6/3/23	9/3/23								
4	Testing static pages	Jack Douet	6/3/23	9/3/23								
5	Testing viewpoints	Fiorella Scarpino	13/3/23	16/3/23								
6	Testing user login											
7	Testing player comparison algorithms											
8	Testing navbar functions											

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
7	●	●	●	● ●	● ●

## Evaluation:

Jack was the team leader for week seven. He started to update the UML diagrams with new features. William had to carry on a literature review while testing input validation as a tester. Sude has begun to develop a player's page which shows all players in the database with their corresponding information. Troy was making some changes to the team static pages. Fiorella was another tester of the week with responsibility for viewpoint validation.

## Lessons Learned:

This week we ran into a few issues when it came to swapping roles within the group. For example, with the literature review, Will had some issues getting started as he had been working on development and planning in the weeks prior. In contrast, moving from a tester role to a planner role was much easier as you have just seen what needs to change about the design, this is a positive that can be seen with the incremental development framework that we are following. Overall, this week proved a bit of a turning point in our development as we all had to embrace new or different roles to what we had been on beforehand.

## WEEK 8 (20/03/2023 - 23/03/2023):

<b>Planned accomplishments in this period:</b>																		
<ul style="list-style-type: none"> <li>● Testing prediction algorithms - Sude Fidan</li> <li>● Costing - Fiorella Scarpino</li> <li>● All players static pages - Sude Fidan</li> <li>● Team static pages -Troy Akbulut + Fiorella Scarpino</li> <li>● Implementation and testing report - Fiorella Scarpino</li> <li>● Literature Review - William Barnes + Troy Akbulut</li> <li>● UML diagram - Jack Douet</li> <li>● README.md - Jack Douet</li> </ul>																		
#	TASK	ASSIGNED TO	START	END	WEEK1 02-Feb	WEEK2 06-Feb	WEEK3 09-Feb	WEEK4 13-Feb	WEEK5 16-Feb	WEEK6 20-Feb	WEEK7 27-Feb	WEEK8 02-Mar	WEEK8 06-Mar	WEEK8 09-Mar	WEEK8 13-Mar	WEEK8 16-Mar	WEEK8 20-Mar	WEEK8 23-Mar
Planning																		
1	Team and project choice	All	2/2/23	6/2/23														
2	Introduction																	
3	Project Aim	William Barnes	6/2/23	6/2/23														
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23														
5	Project Planning Description	Fiorella Scarpino+Troy Akbulut	27/2/23	6/3/23														
6	RACI Matrix	Sude Fidan	9/3/23	13/3/23														
7	Literature Review	Jack Douet+William Barnes+Troy Akbulut	20/2/23															
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23														
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23														
10	Analysis of risks	Sude Fidan + Fiorella Scarpino	27/2/23	6/3/23														
11	Costing	Fiorella Scarpino+Troy Akbulut	9/3/23	20/3/23														
Design																		
1	Wire frames	William Barnes	16/2/23	17/2/23														
2	Football Player database design	Troy Akbulut	16/2/23	20/2/23														
3	User database design																	
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23														
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23														
6	User sequence diagram	Troy Akbulut	20/2/23	20/2/23														
7	User use case diagram																	
8	User class diagram																	
9	User sequence diagram																	
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23														
11	UML diagram	Jack Douet	13/3/23	20/3/23														
12	Test Cases	Sude Fidan + Fiorella Scarpino	27/2/23															
13	README.md	Sude Fidan+Jack Douet	6/3/23															
Development																		
1	Search Static pages	William Barnes+Sude Fidan	20/2/23	23/3/23														
2	All players static pages	Sude Fidan	13/3/23	23/3/23														
3	Team Static Pages	Jack Douet+Troy Akbulut + Fiorella Scarpino	20/2/23	23/3/23														
4	Player comparison static pages																	
5	User login static page																	
6	Admin Page																	
7	Profile/Favourites page																	
8	Database population and implementation																	
9	Dynamic Jinja elements	William Barnes+Fiorella Scarpino	20/2/23	9/3/23														
9	Flask routes	Jack Douet	20/2/23	23/2/23														
10	Dynamic Javascript elements	Fiorella Scarpino	2/3/23	2/3/23														
11	Transfer value algorithms	Sude Fidan	23/2/23	23/2/23														
12	Prediction algorithms	Troy Akbulut	23/2/23	23/2/23														
Validation																		
1	Testing input validation	William Barnes	13/3/23	16/3/23														
2	Testing prediction algorithms	Sude Fidan	20/3/23	23/3/23														
3	Testing transfer algorithms	Troy Akbulut	6/3/23	9/3/23														
4	Testing static pages	Jack Douet	6/3/23	9/3/23														
5	Testing viewpoints	Fiorella Scarpino	13/3/23	16/3/23														
6	Testing user login																	
7	Testing player comparison algorithms																	
8	Testing navbar functions																	

WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
8	●	●●●	●	●●●●	●

### Evaluation:

Sude was the team leader for week eight. She was a tester and developer at the same time for the validation of prediction algorithms and the all-players static page. So, testing for all highest priority requirements was done this week. Jack finished the UML diagram and added some details to the README.md file. William was still working on the literature review. Troy also helped him to write for the literature review. Troy was also the developer for the team static page with Fiorella. Fiorella started and finished talking about costing then had a scratch for implementation and testing in our report.

### Lessons Learned:

This week we wrote some other parts of our reports which lead us to talk about how we would like to write our reports. We started with a draft which everyone commented on to make it different from others. So, as a team, we had to decide about something that is collective. There was confusion about how we will share the responsibility of writing a report. Since we had our second formative feedback session we were glad that we were making progress and understood the value of planning in every phase of a project.

### WEEK 9 (27/03/2023 - 30/03/2023):

<i>Planned accomplishments in this period:</i>
<ul style="list-style-type: none"> <li>● <i>Test cases - Fiorella Scarpino</i></li> <li>● <i>Implementation and Testing - Fiorella Scarpino</i></li> <li>● <i>Player comparison static page - Jack Douet</i></li> <li>● <i>Login static page - Jack Douet</i></li> <li>● <i>README.md - Sude Fian</i></li> <li>● <i>Evaluation and Lesson Learned- Sude Fidan</i></li> <li>● <i>User database design - Troy Akbulut</i></li> <li>● <i>Literature Review - Troy Akbulut</i></li> <li>● <i>Database population and Implementation -William Barnes</i></li> </ul>

#	Task	Assigned To	Start	End	Week 1		Week 2		Week 3		Week 4		Week 5		Week 6		Week 7		Week 8		Week 9	
					02-Feb	06-Feb	09-Feb	13-Feb	16-Feb	20-Feb	23-Feb	27-Feb	02-Mar	06-Mar	09-Mar	13-Mar	16-Mar	20-Mar	23-Mar	27-Mar	30-Mar	
Planning																						
1	Team and project choice	All	2/2/23	6/2/23																		
2	Introduction																					
3	Project Aim	William Barnes	6/2/23	6/2/23																		
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Jack Douet	6/2/23	9/2/23																		
5	Project Planning Description	Fiorella Scarpino+Troy Akbulut	27/2/23	6/3/23																		
6	RACI Matrix	Sude Fidan	9/3/23	13/3/23																		
7	Literature Review	Jack Douet+William Barnes+Troy Abulut	20/2/23																			
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23																		
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23																		
10	Analysis of risks	Sude Fidan + Fiorella Scarpino	27/2/23	6/3/23																		
11	Costing	Fiorella Scarpino+Troy Akbulut	9/3/23	20/3/23																		
Design																						
1	Wire frames	William Barnes	16/2/23	17/2/23																		
2	Football Player database design	Troy Akbulut	16/2/23	20/2/23																		
3	User database design	Troy Akbulut	27/3/23	30/3/23																		
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23																		
5	Player class diagram	Sude Fidan + Fiorella Scarpino	16/2/23	16/2/23																		
6	Player sequence diagram	Troy Akbulut	20/2/23	20/2/23																		
7	User use case diagram																					
8	User class diagram																					
9	User sequence diagram																					
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23																		
11	UML diagram	Jack Douet	13/3/23	20/3/23																		
12	Test Cases	Sude Fidan + Fiorella Scarpino	27/2/23																			
13	README.md	Sude Fidan+Jack Douet	6/3/23																			
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3	Team Static Pages	Jack Douet+Troy Akbulut+ Fiorella Scarpino	20/2/23	23/3/23																		
4	Player comparison static pages	Jack Douet	27/3/23																			
5	User login static page	William Barnes	28/3/23																			
6	Admin Page																					
7	Profile/Favourites page																					
8	Database population and implementation	William Barnes	30/3/23																			
9	Dynamic Jinja elements	William Barnes+Fiorella Scarpino	20/2/23	9/3/23																		
10	Flask routes	Jack Douet	20/2/23	23/2/23																		
11	Dynamic Javascript elements	Fiorella Scarpino	2/3/23	2/3/23																		
12	Prediction algorithms	Sude Fidan	23/2/23	23/2/23																		
13	Validation	Troy Akbulut	23/2/23	23/2/23																		
1	Testing input validation	William Barnes	13/3/23	16/3/23																		
2	Testing prediction algorithms	Sude Fidan	20/3/23	23/3/23																		
3	Testing transfer algorithms	Troy Akbulut	6/3/23	9/3/23																		
4	Testing static pages	Jack Douet	6/3/23	9/3/23																		
5	Testing viewpoints	Fiorella Scarpino	13/3/23	16/3/23																		
6	Testing user login																					
7	Testing player comparison algorithms																					
8	Testing navbar functions																					

Week	Leader	Planner	Designer	Developer	Tester
9	●	●	●	●	

## Evaluation:

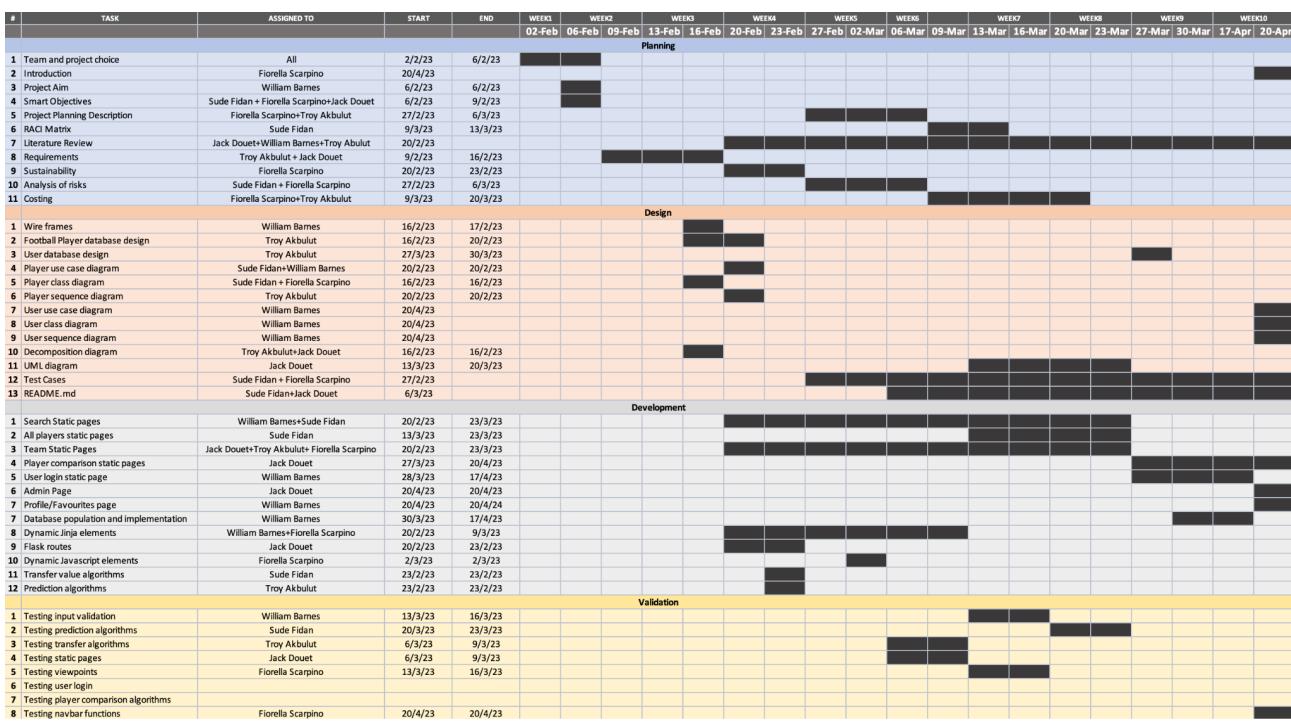
Fiorella was the team leader for week nine. She was also a designer of test cases while still writing about implementation and testing. Sude took over the responsibility of README.md for this week and when she added all news she wrote a scratch of evaluation and lessons learned for the project report. Jack came up with the idea of creating a comparison page for players and a login page so he was the developer of these two new pages. Troy designed a user database for this new implementation and he also contributed towards the literature review. William populated the database regarding the design created by Troy.

## Lessons Learned:

This week we started populating the database as well as creating the user login page. The login was one of the last implementations that we added as it was a ‘could’ non-functional requirement, we wanted to make sure that all the functional requirements were completed before moving on to the other requirements.

## WEEK 10 (17/04/2023 - 20/04/2023):

<b>Planned accomplishments in this period:</b>														
● Test cases - Fiorella Scarpino														
● Implementation and Testing - Fiorella Scarpino														
● Player comparison static page - Jack Douet														
● Login static page - Jack Douet														
● README.md - Sude Fian														
● Evaluation and Lesson Learned- Sude Fidan														
● User database design - Troy Akbulut														
● Literature Review - Troy Akbulut														
● Database population and Implementation -William Barnes														



WEEK	LEADER	PLANNER	DESIGNER	DEVELOPER	TESTER
10	Yellow circle	Yellow, Purple, Blue circles	Yellow, Red, Purple, Green circles	Yellow, Blue, Green circles	Red circle

## Evaluation:

Troy was the team leader of week ten after Easter break. Team members kept working on their parts before Easter without any big changes and focused on bug and grammar fixes since ninety per cent of the project had finished. This is the only week that the team had to carry on everything that they had been doing one week before but it was because the deadline of the project was so close and everyone needed to make sure everything they contributed to the report was valid and implementations did not flag any error.

## Lessons Learned:

Being the final full week of work, we had to properly assess the available scope of the project, cutting some planned non-essential requirements. With a solid plan and clear goals in place, the team was able to work in an efficient and coordinated manner to finalise most aspects of the project.

## WEEK 11 (24/04/2023):

<b>Planned accomplishments in this period:</b>														
<ul style="list-style-type: none"> <li>● New leader - William Barnes</li> <li>● Finalising diagrams - Troy Akbulut + William Barnes</li> <li>● Finalising literature review - Jack Douet</li> <li>● Introduction - Fiorella Scarpino</li> <li>● Testing player comparison page - Fiorella Scarpino</li> <li>● Testing user login - Sude Fidan</li> <li>● Finalising test cases - Sude Fidan</li> <li>● Finalising README.md - Sude Fidan</li> </ul>														

#	Task	Assigned To	Start	End	Weeks																	
					WEEK1 02-Feb	WEEK2 09-Feb	WEEK3 13-Feb	WEEK4 16-Feb	WEEK5 20-Feb	WEEK6 23-Feb	WEEK7 27-Feb	WEEK8 02-Mar	WEEK9 06-Mar	WEEK10 09-Mar	WEEK11 13-Mar	WEEK12 16-Mar	WEEK13 20-Mar	WEEK14 23-Mar	WEEK15 27-Mar	WEEK16 30-Mar	WEEK17 17-Apr	WEEK18 20-Apr
Planning																						
1	Team and project choice	All	2/2/23	6/2/23																		
2	Introduction	Fiorella Scarpino	20/4/23	24/4/23																		
3	Project Aim	William Barnes	6/2/23	6/2/23																		
4	Smart Objectives	Sude Fidan + Fiorella Scarpino+Troy Akbulut	6/2/23	9/2/23																		
5	Project Planning Description	Fiorella Scarpino+Troy Akbulut	27/2/23	6/3/23																		
6	RACI Matrix	Sude Fidan	9/3/23	13/3/23																		
7	Literature Review	Jack Douet+William Barnes+Troy Abulut	20/2/23	24/2/23																		
8	Requirements	Troy Akbulut + Jack Douet	9/2/23	16/2/23																		
9	Sustainability	Fiorella Scarpino	20/2/23	23/2/23																		
10	Analysis of risks	Sude Fidan + Fiorella Scarpino	27/2/23	6/3/23																		
11	Costing	Fiorella Scarpino+Troy Akbulut	9/3/23	20/3/23																		
Design																						
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2	Football Player database design	Troy Akbulut	16/2/23	20/2/23																		
3	User database design	Troy Akbulut	27/3/23	30/3/23																		
4	Player use case diagram	Sude Fidan+William Barnes	20/2/23	20/2/23																		
5	Player class diagram	Sude Fidan+Fiorella Scarpino	18/2/23	18/2/23																		
6	Player sequence diagram	Troy Akbulut	20/2/23	20/2/23																		
7	User use case diagram	William Barnes	20/4/23	24/4/23																		
8	User class diagram	William Barnes	20/4/23	24/4/23																		
9	User sequence diagram	William Barnes	20/4/23	24/4/23																		
10	Decomposition diagram	Troy Akbulut+Jack Douet	16/2/23	16/2/23																		
11	UML diagram	Jack Douet	13/3/23	20/3/23																		
12	Test Cases	Sude Fidan + Fiorella Scarpino	27/2/23	24/4/23																		
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6	Admin Page	Jack Douet	20/4/23	20/4/23																		
7	Profile/Favourites page	William Barnes	20/4/23	20/4/24																		
8	Database population and implementation	William Barnes	30/3/23	17/4/23																		
9	Dynamic Jinja elements	William Barnes+Fiorella Scarpino	20/2/23	9/3/23																		
10	Flask routes	Jack Douet	20/2/23	23/2/23																		
11	Dynamic Javascript elements	Fiorella Scarpino	2/3/23	2/3/23																		
12	Transfer value algorithms	Sude Fidan	23/2/23	23/2/23																		
13	Prediction algorithms	Troy Akbulut	23/2/23	23/2/23																		
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1	Testing input validation	William Barnes	13/3/23	16/3/23																		
2	Testing prediction algorithms	Sude Fidan	20/3/23	23/3/23																		
3	Testing transfer algorithms	Troy Akbulut	6/3/23	9/3/23																		
4	Testing static pages	Jack Douet	6/3/23	9/3/23																		
5	Testing favourites	Fiorella Scarpino	13/3/23	16/3/23																		
6	Testing user login	Sude Fidan	24/4/23	24/4/23																		
7	Testing player comparison algorithms	Fiorella Scarpino	24/4/23	24/4/23																		
8	Testing navbar functions	Fiorella Scarpino	20/4/23	20/4/23																		

Week	Leader	Planner	Designer	Developer	Tester
11	●	● ●	● ● ●		● ●

## Evaluation:

William was the team leader of week eleven. Week eleven was the last week of the project with only one session to be attended.

**Lessons Learned:** On the final days before submission we learnt the importance of proper testing and proofreading after going over all of our work before our final submission we realised some of the things included at the start of our project were no longer applicable, As well as several spelling and grammar errors that needed to be corrected.

## REFERENCES - MAIN BODY

ComodoCA (no date) *ComodoCA Official Site | Comodo SSL Certificates Official Site ComodoCA Official Site*. [online]. Available from: <https://ssl.comodoca.com/> [Accessed 20 March 2023].

‘CS 410/510 - Software Engineering class notes’ (2019) *Ccsu.edu.2019* [online]. Available from: <https://cs.ccsu.edu/~stan/classes/CS410/Notes16/02-SoftwareProcesses.html> [Accessed 23 February 2023].

FIFA (2019) *MEN PROFESSIONAL FOOTBALL A REVIEW OF INTERNATIONAL FOOTBALL TRANSFERS WORLDWIDE* [online]. Available from:

<https://digitalhub.fifa.com/m/248987d86f2b9955/original/x2wrqjstwjoailnnncnod-pdf.pdf> [Accessed 20 April 2023].

Hetzner (no date) *Webhosting Fast and Reliable www.hetzner.com*. [online]. Available from: <https://www.hetzner.com/webhosting> [Accessed 20 March 2023].

Stevens, W. (2019) *How much does it cost to build a website in the UK? GoDaddy*.30 September 2019 [online]. Available from:

<https://uk.godaddy.com/blog/how-much-does-it-cost-to-build-a-website-uk/> [Accessed 9 March 2023].

Struck, A. (2016) *How Much Does a Stock Photo Cost in 2022? Pricing Guide Stock Photo Secrets*.12 April 2016 [online]. Available from:

<https://www.stockphotosecrets.com/questions-answers/how-much-does-a-stock-photo-cost.html> [Accessed 20 March 2023].

## REFERENCES - LITERATURE REVIEW

Brambilla, M., Comai, S., Frernali, P. and Matera, M., 2008. Designing web applications with WebML and WebRatio. *Web Engineering: Modelling and Implementing Web Applications*, pp.221-261.

Economides, N. and Katsamakas, E. 2006. *The Economics of Open Source Software Development*. Elsevier B.V. All. Chapter 10. Pages 207-218. Available at:  
<https://doi.org/10.1016/B978-044452769-1/50010-X> [Accessed: 19th April 2023].

Enge, E., Spencer, S., Stricchiola, J. and Fishkin, R., 2012. *The art of SEO*. O'Reilly Media.

Fonseca Cacho, J. 2020. "Using Discord to Improve Student Communication, Engagement and Performance". UNLV Best Teaching Practices Expo. 95. Available at: [https://digitalscholarship.unlv.edu/btp\\_expo/95/](https://digitalscholarship.unlv.edu/btp_expo/95/). [Accessed: 19th April 2023].

Graham, D. R. 1992. Incremental Development and Delivery For Large Systems. Colloquium on "Software Prototyping and Evolutionary Development", IEE, 1 November 1992. Available at: <https://ieeexplore.ieee.org/abstract/document/214383/authors#authors>. [Accessed: 23rd April 2023].

Grinberg, M. 2018. Flask Web Development: Developing Web Applications with Python. O'Reilly Media.

Halfond, W.G., Viegas, J. and Orso, A., 2006. A classification of SQL-injection attacks and countermeasures. In Proceedings of the IEEE international symposium on secure software engineering (Vol. 1, pp. 13-15). IEEE.

Heinrich, E., Thomas, H. and Kahu, E. R. 2022. "An exploration of course and cohort communication spaces in Discord, Teams, and Moodle", Australasian Journal of Educational Technology. Melbourne, Australia, 38(6), pp. 107–120. doi: 10.14742/ajet.7633. [Accessed: 10th April 2023].

Hussain, S., Bahadur, F., Gul, F., Iqbal, A., Ashraf, G. and Nazeer, S., 2015. Survey of Windows and Linux as server operating system. International Journal of Computer, 18(1), pp.1-6. Available at: [https://d1wqtxts1xzle7.cloudfront.net/46811321/survey-libre.pdf?1466970292=&response-content-disposition=inline%3B+filename%3DSurvey\\_on\\_Window\\_and\\_Linux\\_as\\_Server\\_Ope.pdf&Expires=1682255064&Signature=gpKnw0xyyFA5QGSubOqLacym14NITJ2y6ICZPcLEqUPeh5D0y3eEGKKI9GX7E24G5fZduNci51IVtM1ySHLyte-pxj4RGTmAGO4SzD0kFe2oxqZMcQYE~EZodPLGJOqbHOV2LJ4BwI5nLY4K1JsOHbCEYau3-qmrffUzjIpRf92QBwKG~w4CcdfaqXmHIXNMgsx2cF4CR0Od2VOfo3Gyjg7Rpw4x642WO8kh-B34Rhq3r-m8HhMndCW1AtpbMTLP126-bKZ0LEti7VRkO-sBv7mnID7dB~GIqwMEC7up-dGkynfx9z~nkcY1rusdZpTSDS~S6yD5wpH0setPDN7pBQ\\_&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA](https://d1wqtxts1xzle7.cloudfront.net/46811321/survey-libre.pdf?1466970292=&response-content-disposition=inline%3B+filename%3DSurvey_on_Window_and_Linux_as_Server_Ope.pdf&Expires=1682255064&Signature=gpKnw0xyyFA5QGSubOqLacym14NITJ2y6ICZPcLEqUPeh5D0y3eEGKKI9GX7E24G5fZduNci51IVtM1ySHLyte-pxj4RGTmAGO4SzD0kFe2oxqZMcQYE~EZodPLGJOqbHOV2LJ4BwI5nLY4K1JsOHbCEYau3-qmrffUzjIpRf92QBwKG~w4CcdfaqXmHIXNMgsx2cF4CR0Od2VOfo3Gyjg7Rpw4x642WO8kh-B34Rhq3r-m8HhMndCW1AtpbMTLP126-bKZ0LEti7VRkO-sBv7mnID7dB~GIqwMEC7up-dGkynfx9z~nkcY1rusdZpTSDS~S6yD5wpH0setPDN7pBQ_&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA). [Accessed: 23rd April 2023].

Letkowski, J. Doing database design with MySQL. Journal of Technology Research. 2015 Jan 1;6:1. Available at: [https://www.researchgate.net/profile/Jerzy-Letkowski/publication/271910489\\_Doing\\_database\\_design\\_with\\_MySQL/links/54dd41bf0cf282895a3b5175/Doing-database-design-with-MySQL.pdf](https://www.researchgate.net/profile/Jerzy-Letkowski/publication/271910489_Doing_database_design_with_MySQL/links/54dd41bf0cf282895a3b5175/Doing-database-design-with-MySQL.pdf) [Accessed: 19th April 2023].

Molina-Ríos, J. and Pedreira-Souto, N., 2020. Comparison of development methodologies in web applications. Information and Software Technology. Volume 119, article 106238.

Peeters, T. "Testing the Wisdom of Crows in the field: Transfermarkt valuations and international soccer results". International Journal of Forecasting. Volume 34, Issue 1. January-March 2018. Pages 17-29. Available at:

[https://www.sciencedirect.com/science/article/pii/S0169207017300754?casa\\_token=8oC5we3WD4IAAAAA:eSUH4Ch6nw0hKIsnnout38ct5JxweMYrgepJ8gBZXQuCtSdQbmZr9StVXJi5fu-Tl72KIaqLUj0](https://www.sciencedirect.com/science/article/pii/S0169207017300754?casa_token=8oC5we3WD4IAAAAA:eSUH4Ch6nw0hKIsnnout38ct5JxweMYrgepJ8gBZXQuCtSdQbmZr9StVXJi5fu-Tl72KIaqLUj0). [Accessed: 19th April 2023].

Poli, R., Ravenel, L and Besson, R. "Scientific Evaluation of the Transfer Value of Football Players". CIES Football Observatory Monthly Report Number 53. March 2020. Available at: <https://www.football-observatory.com/IMG/pdf/mr53en.pdf> [Accessed: 19th April 2023].

Spurlock, J. 2013. Bootstrap: Responsive Web Development. O'Reilly Media.

TMIndia. "Transfermarkt Market Value explained - How is it determined?" Transfermarkt. 13.05.2021. Available at: <https://www.transfermarkt.co.in/transfermarkt-market-value-explained-how-is-it-determined-/view/news/385100>. [Accessed: 19th April 2023].

Valdivia, R.G.B., 2019. Collaborative learning using git with gitlab in students of the engineering programming course. Inproc. Of the Int. Congress on Educ, and Technol. In Sci (pp.92-101). Available at: <https://ceur-ws.org/Vol-2555/paper8.pdf> [Accessed: 19th April 2023].

## APPENDIX

### PROJECT REPORT

Date-Time:	02/02/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

### STATUS OF PLANNED ACTIVITIES

#### *Planned accomplishments in this period:*

- Team choice
- Anticipating using Python programming language
- Anticipating using MySql for database

#### *Planned actions for the next period:*

- Project choice
- Project leader choice

## PROJECT REPORT

Date-Time:	06/02/2023 – 15:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Jack Douet*

### STATUS OF PLANNED ACTIVITIES

#### ***Planned accomplishments in this period:***

- Project choice - All
- Project leader choice -All
- Project aim identification - William Barnes
- SMART objective outline - Sude Fidan + Fiorella Scarpino

#### ***Planned actions for the next period:***

- Research into requirements - Troy Akbulut
- Finalising SMART objectives - Jack Douet

## PROJECT REPORT

Date-Time:	09/02/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	

*Project Leader: Jack Douet*

### STATUS OF PLANNED ACTIVITIES

<b><u>Planned accomplishments in this period:</u></b>
<ul style="list-style-type: none"><li>• Requirement Table( Functional Requirements) - Troy Akbulut</li><li>• Finalising SMART objectives - Jack Douet</li></ul>

<b><u>Planned actions for the next period:</u></b>
<ul style="list-style-type: none"><li>• Requirement Tables (Non-Functional requirements) - Jack Douet + Troy Akbulut</li><li>• GANTT Chart - Sude Fidan + Fiorella Scarpino</li><li>• Server-side research - William Barnes</li><li>• New group leader - Sude Fidan</li></ul>

## PROJECT REPORT

Date-Time:	13/02/2023 – 15:30	Location:	2N24/40
Attendance:	<b>Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976</b>	Absent:	-

*Project Leader: Sude Fidan*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• Requirement Tables (Non-Functional requirements) - Jack Douet</li><li>• GANTT Chart - Sude Fidan + Fiorella Scarpino</li><li>• Server-side research - William Barnes + Troy Akbulut</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• More functional requirements - Jack Douet</li><li>• Class Diagram - Sude Fidan + Fiorella Scarpino</li><li>• Decomposition Diagram - Troy Akbulut + Jack Douet</li><li>• Database design - Troy Akbulut</li><li>• Wire Frames - William Barnes</li></ul>

## PROJECT REPORT

Date-Time:	16/02/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Sude Fidan*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>More functional requirements - Jack Douet</li><li>Class Diagram - Sude Fidan + Fiorella Scarpino</li><li>Decomposition Diagram - Troy Akbulut + Jack Douet</li><li>Database design - Troy Akbulut</li><li>Wire Frames - William Barnes</li></ul>
<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>New leader - Fiorella scarpino</li><li>Dynamic Ninja elements - William Barnes</li><li>Team static pages - Troy Akbulut</li><li>Search static pages - Sude Fidan</li><li>Flask Routes - Jack Douet</li><li>Literature review - William Barnes</li><li>Database design- Troy Akbulut</li><li>Sequence diagram - Troy Akbulut</li><li>Use case diagram - Sude Fidan</li><li>Sustainability - Fiorella Scarpino</li></ul>

## PROJECT REPORT

Date-Time:	20/02/2023 – 15:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Fiorella Scarpino*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>● Dynamic Ninja elements - William Barnes</li><li>● Team static pages - Troy Akbulut</li><li>● Search static pages - Sude Fidan</li><li>● Flask Routes - Jack Douet</li><li>● Literature review - William Barnes</li><li>● Database design- Troy Akbulut</li><li>● Sequence diagram - Troy Akbulut</li><li>● Use case diagram - Sude Fidan</li><li>● Sustainability - Fiorella Scarpino</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>● Dynamic Ninja elements - William Barnes</li><li>● Team static pages - Troy Akbulut</li><li>● Search static pages - Sude Fidan</li><li>● Flask Routes - Jack Douet</li><li>● Literature review - William Barnes</li><li>● Sustainability - Fiorella Scarpino</li><li>● Transfer value algorithm - Sude Fidan</li><li>● Prediction Algorithm - Troy Akbulut</li></ul>

## PROJECT REPORT

Date-Time:	23/02/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Fiorella Scarpino*

### STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• Dynamic Jinja elements - William Barnes</li><li>• Team static pages - Troy Akbulut</li><li>• Search static pages - Sude Fidan</li><li>• Flask Routes - Jack Douet</li><li>• Literature review - William Barnes</li><li>• Sustainability - Fiorella Scarpino</li><li>• Transfer value algorithm - Sude Fidan</li><li>• Prediction Algorithm - Troy Akbulut</li></ul>
<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• New leader - Troy Akbulut</li><li>• Literature review - Jack Douet</li><li>• The analysis of risks - Sude Fidan</li><li>• Project Planning and Team Roles - Troy Akbulut</li><li>• Test cases - Fiorella Scarpino</li><li>• Search static pages - William Barnes</li><li>• Team static page - Troy Akbulut</li></ul>

## PROJECT REPORT

Date-Time:	27/02/2023 – 15:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Troy Akbulut*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>● Literature review - Jack Douet</li><li>● The analysis of risks - Sude Fidan</li><li>● Project Planning and Team Roles - Troy Akbulut</li><li>● Test cases - Fiorella Scarpino</li><li>● Search static pages - William Barnes</li><li>● Team static page - Troy Akbulut</li></ul>

## ***Planned actions for the next period:***

<ul style="list-style-type: none"><li>● Dynamic Jinja elements - Fiorella Scarpino</li><li>● Literature review - Jack Douet</li><li>● The analysis of risks - Sude Fidan</li><li>● Team static page - Troy Akbulut</li><li>● Search static pages - William Barnes</li></ul>
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## PROJECT REPORT

Date-Time:	02/03/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	William Barnes 21031340

*Project Leader: Troy Akbulut*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• Dynamic Ninja elements - Fiorella Scarpino</li><li>• Literature review - Jack Douet</li><li>• The analysis of risks - Sude Fidan</li><li>• Team static page - Troy Akbulut</li><li>• Search static pages - William Barnes</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• RACI matrix - Sude Fidan</li><li>• README.md - Sude Fidan</li><li>• The analysis of risks - Fiorella Scarpino</li><li>• Search static pages - William Barnes</li><li>• Dynamic Ninja elements - Fiorella Scarpino</li><li>• Testing static pages - Jack Douet</li><li>• Testing transfer algorithms - Troy Akbulut</li></ul>

## PROJECT REPORT

Date-Time:	06/03/2023 – 15:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: William Barnes*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>● RACI matrix - Sude Fidan</li><li>● README.md - Sude Fidan</li><li>● The analysis of risks - Fiorella Scarpino</li><li>● Search static pages - William Barnes</li><li>● Dynamic Ninja elements - Fiorella Scarpino</li><li>● Testing static pages - Jack Douet</li><li>● Testing transfer algorithms - Troy Akbulut</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>● README.md - Sude Fidan</li><li>● Costings - Fiorella Scarpino</li><li>● RACI matrix - Sude Fidan</li><li>● Dynamic Ninja elements - Fiorella Scarpino</li><li>● Search static pages - William Barnes</li><li>● Testing static pages - Jack Douet</li><li>● Testing transfer algorithms - Troy Akbulut</li></ul>

## PROJECT REPORT

Date-Time:	09/03/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: William Barnes*

### STATUS OF PLANNED ACTIVITIES

<b><u>Planned accomplishments in this period:</u></b>
<ul style="list-style-type: none"><li>• README.md - Sude Fidan</li><li>• Costings - Fiorella Scarpino</li><li>• RACI matrix - Sude Fidan</li><li>• Dynamic Ninja elements - Fiorella Scarpino</li><li>• Search static pages - William Barnes</li><li>• Testing static pages - Jack Douet</li><li>• Testing transfer algorithms - Troy Akbulut</li></ul>

<b><u>Planned actions for the next period:</u></b>
<ul style="list-style-type: none"><li>• New team leader - Jack Douet</li><li>• Literature Review - William Barnes</li><li>• UML diagram - Jack Douet</li><li>• Search static pages - Sude Fidan</li><li>• Team static pages - Troy Akbulut</li><li>• Testing input validation - William Barnes</li><li>• Testing viewpoints - Fiorella Scarpino</li></ul>

## PROJECT REPORT

Date-Time:	13/03/2023 – 15:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Jack Douet*

### STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• New team leader - Jack Douet</li><li>• Literature Review - William Barnes</li><li>• UML diagram - Jack Douet</li><li>• All players static pages - Sude Fidan</li><li>• Team static pages - Troy Akbulut</li><li>• Testing input validation - William Barnes</li><li>• Testing viewpoints - Fiorella Scarpino</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• Literature Review - William Barnes</li><li>• UML diagram - Jack Douet</li><li>• All player static pages - Sude Fidan</li><li>• Team static pages - Troy Akbulut</li><li>• Testing input validation - William Barnes</li><li>• Testing viewpoints - Fiorella Scarpino</li></ul>

## PROJECT REPORT

Date-Time:	16/03/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Jack Douet*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• Literature Review - William Barnes</li><li>• UML diagram - Jack Douet</li><li>• All player static pages - Sude Fidan</li><li>• Team static pages - Troy Akbulut</li><li>• Testing input validation - William Barnes</li><li>• Testing viewpoints - Fiorella Scarpino</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• New Leader - Sude Fidan</li><li>• Testing prediction algorithms - Sude Fidan</li><li>• Costin - Fiorella Scarpino</li><li>• All players static pages - Sude Fidan</li><li>• Team static pages - Troy Akbulut</li><li>• Literature Review - William Barnes</li><li>• UML diagram - Jack Douet</li><li>• README.md - Jack Douet</li></ul>

## PROJECT REPORT

Date-Time:	20/03/2023 – 15:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Sude Fidan*

## STATUS OF PLANNED ACTIVITIES

<b>Planned accomplishments in this period:</b>
<ul style="list-style-type: none"><li>• New Leader - Sude Fidan</li><li>• Testing prediction algorithms - Sude Fidan</li><li>• Costing - Fiorella Scarpino</li><li>• All players static pages - Sude Fidan</li><li>• Team static pages -Troy Akbulut</li><li>• Literature Review - William Barnes</li><li>• UML diagram - Jack Douet</li><li>• README.md - Jack Douet</li></ul>

<b>Planned actions for the next period:</b>
<ul style="list-style-type: none"><li>• Testing prediction algorithms - Sude Fidan</li><li>• All players static pages - Sude Fidan</li><li>• Team static pages - Fiorella Scarpino</li><li>• Implementation and testing report - Fiorella Scarpino</li><li>• Literature Review - William Barnes + Troy Akbulut</li><li>• UML diagram - Jack Douet</li><li>• README.md - Jack Douet</li></ul>

## PROJECT REPORT

Date-Time:	23/03/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	

*Project Leader: Sude Fidan*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• Testing prediction algorithms - Sude Fidan</li><li>• All players static pages - Sude Fidan</li><li>• Team static pages - Fiorella Scarpino</li><li>• Implementation and testing report - William Barnes + Fiorella Scarpino</li><li>• Literature Review - Troy Akbulut</li><li>• README.md - Jack Douet</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• New leader - Fiorella Scarpino</li><li>• Test cases - Fiorella Scarpino</li><li>• Player comparison static page - Jack Douet</li><li>• Login static page - William Barnes</li><li>• README.md - Sude Fian</li><li>• User database design - Troy Akbulut</li><li>• Literature Review - William Barnes</li></ul>

## PROJECT REPORT

Date-Time:	27/03/2023 – 15:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	William Barnes 21031340

*Project Leader: Fiorella Scarpino*

### STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>● <i>New leader - Fiorella Scarpino</i></li><li>● <i>Test cases - Fiorella Scarpino</i></li><li>● <i>Player comparison static page - Jack Douet</i></li><li>● <i>Login static page - William Barnes</i></li><li>● <i>README.md - Sude Fian</i></li><li>● <i>User database design - Troy Akbulut</i></li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>● <i>Implementation and Testing - Fiorella Scarpino</i></li><li>● <i>Evaluation and Lesson Learned- Sude Fidan</i></li><li>● <i>Literature Review - Troy Akbulut</i></li><li>● <i>Player comparison static page - Jack Douet</i></li><li>● <i>Login static page - William Barnes</i></li><li>● <i>Database population and Implementation - William Barnes</i></li></ul>

## PROJECT REPORT

Date-Time:	30/03/2023 – 9:30	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Fiorella Scarpino*

### STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• Implementation and Testing - Fiorella Scarpino</li><li>• Evaluation and Lesson Learned- Sude Fidan</li><li>• Literature Review - Troy Akbulut</li><li>• Database population and implementation - William Barnes</li><li>• Player comparison static page - Jack Douet</li><li>• Login static page - William Barnes</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• Implementation and Testing - Fiorella Scarpino</li><li>• Evaluation and Lesson Learned- Sude Fidan</li><li>• Literature Review - Troy Akbulut</li><li>• Player comparison static page - Jack Douet</li><li>• Login static page - William Barnes</li><li>• Database population and implementation - William Barnes</li><li>• New leader - Troy Akbulut</li></ul>

## PROJECT REPORT

Date-Time:	17/04/2023 – 15:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Troy Akbulut*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>• New leader - Troy Akbulut</li><li>• Implementation and Testing - Fiorella Scarpino</li><li>• Evaluation and Lesson Learned- Sude Fidan</li><li>• Literature Review - Troy Akbulut + Jack Douet</li><li>• Player comparison static page - Jack Douet</li><li>• Login static page - William Barnes</li><li>• Database population and implementation - William Barnes</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>• Literature Review - Troy Akbulut</li><li>• User use case diagram - William Barnes</li><li>• User class diagram - William Barnes</li><li>• User sequence diagram - William Barnes</li><li>• Favourites page - William Barnes</li><li>• Admin page - Jack Douet</li><li>• Testing navbar functions - Fiorella Scarpino</li><li>• Test cases - Sude Fidan</li></ul>

## PROJECT REPORT

Date-Time:	20/04/2023 – 9:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: Troy Akbulut*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>● Literature Review - Troy Akbulut</li><li>● User use case diagram - William Barnes</li><li>● User class diagram - William Barnes</li><li>● User sequence diagram - William Barnes</li><li>● Favourites page - William Barnes</li><li>● Admin page - Jack Douet</li><li>● Testing navbar functions - Fiorella Scarpino</li><li>● Test cases - Sude Fidan</li></ul>

<b><i>Planned actions for the next period:</i></b>
<ul style="list-style-type: none"><li>● Finalising diagrams - Troy Akbulut + William Barnes</li><li>● Finalising literature review - Jack Douet</li><li>● Introduction - Fiorella Scarpino</li><li>● Testing player comparison page - Fiorella Scarpino</li><li>● Testing user login - Sude Fidan</li><li>● Finalising test cases - Sude Fidan</li><li>● Finalising README.md - Sude Fidan</li><li>● New leader - William Barnes</li></ul>

## PROJECT REPORT

Date-Time:	24/04/2023 – 15:00	Location:	2N24/40
Attendance:	Sude Fidan 21068639, William Barnes 21031340, Fiorella Scarpino 21010043, Jack Douet 21025153, Troy Akbulut 21015976	Absent:	-

*Project Leader: William Barnes*

## STATUS OF PLANNED ACTIVITIES

<b><i>Planned accomplishments in this period:</i></b>
<ul style="list-style-type: none"><li>● <i>New leader - William Barnes</i></li><li>● <i>Finalising diagrams - Troy Akbulut + William Barnes</i></li><li>● <i>Finalising literature review - Jack Douet</i></li><li>● <i>Introduction - Fiorella Scarpino</i></li><li>● <i>Testing player comparison page - Fiorella Scarpino</i></li><li>● <i>Testing user login - Sude Fidan</i></li><li>● <i>Finalising test cases - Sude Fidan</i></li><li>● <i>Finalising README.md - Sude Fidan</i></li></ul>