

## **Project Summary**

### **Idea:**

Club-Kit is a sports club admin application, that will allow club members to also interact with the platform. The idea behind Club-Kit was to build an online tool for volunteers and admins of local sports clubs around the country to use to complete administrative tasks. These tasks include taking player registrations, booking pitches, sending out training rosters and running a club shop to handle in club purchases.

The application will be built as a web-app where volunteers of clubs can register their club for use with the platform. Users can access the site to view various clubs, their information and use the services provided by each club. Each of these features will be available all together or individually, chosen by each club as a package on sign up. This project was chosen because we identified most volunteers for clubs were spending fifteen or more hours a week doing administrative work for their club.

**Player registrations:** This feature is a paid package which all sports clubs can utilise, and it will consist of a safe and secure system where players can register and pay their club fees online. This removes the need for clubs to host a registration night at the beginning of the year, as most clubs still do and will help improve and speed up the process of registrations and avoid potential errors especially handling cash payments. The system will also keep track of who is registered correctly and who is fully payed up.

**Rent-a-Pitch:** This feature allows for customers to go online and instantly book a slot on one of the particular club's pitches which are available to rent. The user will be requested to pay online or by cash on arrival for the slot before booking and this removes the need for a volunteer to constantly be taking phone calls from customers wishing to book a pitch and allows for easy payments online rather than collecting payment during that time slot. We've incorporated cash payments for clubs that are happy to accept them.

**Club Shop:** The club shop feature allows clubs to advertise and sell club jerseys, shorts, hats and other types of club gear online. Users can purchase online from the club shop, pay online and collect their purchase from the club. Club admins will be responsible for populating club shop by including photos, titles, categories, sizes, prices, number of units and descriptions of the goods.

**Training Rosters:** This allows for clubs to plan and schedule training rosters for each of their pitches online so that members can easily find and view them. Times and dates will be entered by the club admin and this information will work alongside our rent-a-pitch package for those clubs that avail of this.

## **Why we chose this as our project?**

The idea behind our project is that clubs won't have to use various different online systems or old fashion methods of doing these admin tasks and that all these features will be in one, easy to use online system. We analysed our competitors to see what they offered with their software and it helped us gather ideas from different sports management software applications and we merged the four most important features obtained through surveying that would benefit clubs the most. Our idea for the shop was given to us by a few of our survey participants.

The application will be based online as a web app. This means that it will be accessible to users on various devices including mobile and computers. This is completed using a responsive design in the application so that it will display correctly on various screen sizes. In the future we hope to create a mobile application which will be available to download on various devices so that the services offered by our software will be accessible to club admins and members on their mobile devices.

## **Value Propositions:**

The main value proposition of this project is to make life easier for admins of sports clubs. Our market research shows that some club admins could spend fifteen or more hours a week doing work for clubs as part of their volunteered time depending on the size of the club. This amount of involvement in clubs can drive people away from volunteering and without volunteers a club would not be able to run. Our application aims to drastically reduce the time spent by volunteers doing administrative work in their clubs.

For members associated with the clubs, such as players and parents, it's a place where they can access club information and other features like registration, pitch booking, training rosters and club shops. It creates an easily accessible platform for users and relieves the pains of searching the internet for these services and using various different systems which the club may have in place.

## **Target users and customers:**

This application is aimed towards sports clubs looking to improve tasks around the club and ensure the smooth running of business processes. Clubs will be able to purchase different packages and features they feel are required for their clubs. Clubs will pay a yearly fee to use the system.

Target users of the application will include volunteers, players and parents of underage players. Users will be able to access the various features available for each club in a single online platform.

### Values and fears

Values smooth running of club operations.  
Fears the amount of work will be too much

### Goals and challenges

Wants to ensure the club is ran correctly.  
Under pressure to get work done in his spare time

### Miscellaneous

Average computer knowledge.  
Volunteers for the club because his children are involved in the club.

### Communication

Good communication skills and open to new ideas

Name: John  
Job Title: Accountant  
Situation: Volunteer for local sports club with too much work on his hand



Above is an example persona of a person volunteering for a sports club. John is an accountant who volunteers for his local football club. His children are members of the club, so he wants to be involved and offer to help the club in his spare time. John sometimes finds that there is too much work to be completed each week and is considering leaving the club. He feels that the way the club runs is not very efficient and is open to ideas on how to improve how the club is run. John is an example of our target customers. Our application could help with tasks volunteers like himself and other volunteers are having to complete each week.

### Values and fears

Values the ability to find information online quickly.  
Fears that her club may be losing volunteers

### Goals and challenges

Wants to book club facilities to play with her friends.  
Unable to find out how to book a pitch with her club.

### Miscellaneous

Plays rugby for her local rugby club

### Communication

Wants to play Rugby to socialize with Friends

Name: Maria  
Job Title: Student  
Situation: Plays for her local rugby team and wants to book a pitch to play with her friends.



Above is an example persona of the typical user of the application. Maria is a member of her local Rugby club and is looking to book a pitch for her friends to play on in their spare time. She is unable to find out how to do this as the club doesn't advertise pitch booking online or have any information about the club online. With our system the club will have the ability to rent their pitches online, handle payments for registered and un-registered members to easily find and book.

## **Market Size & Current Trends**

Our target market is sports clubs looking to speed up and improve their administrative tasks which keep the club running. In Ireland alone, there are thousands of clubs ranging in sport from GAA, Football, Tennis, Rugby and more. Due to the common processes carried out by clubs across the world, there is the opportunity to expand this business outside of Ireland.

Most clubs continue to operate in a traditional manner, take for example member registration, some clubs host registration nights in order to collect membership payments other methods include members paying managers who then have the responsibility to handling cash and safely passing it onto club admins to then enter details into a spreadsheet to help organise teams and players.

Scheduling teams and pitches is a task which needs to be revamped. Currently some club admins are planning rosters each week, to then pass these details onto individual managers whose responsibility is to pass this onto each player or parent associated to that player. Implementing a roster feature will allow admins to simply add roster details to the application and members can access anytime to view the details.

Rent-a-pitch is a feature which is important to clubs but upon research we realised it's not important to all clubs. From experience we've acknowledged that this process carried out by some clubs is outdated. Currently some clubs or rental sites are still taking booking's over the phone and handling cash on arrival. Moving away from this method of booking can help avoid errors such as double bookings and accepting card payments can ensure money is handled safely.

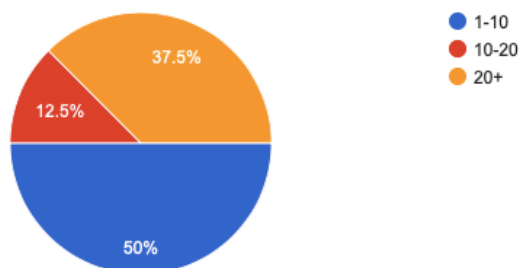
Introducing a shop into the platform will improve the satisfaction of all people involved within a club. Volunteers can have an organised ordering process with card payments. Members can simply select and pay for what they need without the fear of communication issues when ordering over the phone or passing messages to managers to order club gear.

With our system we will change the way volunteers and members of clubs carry out their day to day tasks and move clubs to a more modern way of operating.

We conducted some market research at the beginning of this project by sending out a survey's to clubs around the country. This survey consisted of questions about each club, how they currently operate and if they would be interested in using a system which they can operate some features online. We received a good response to the survey and it showed that the majority of clubs would be interested in our features.

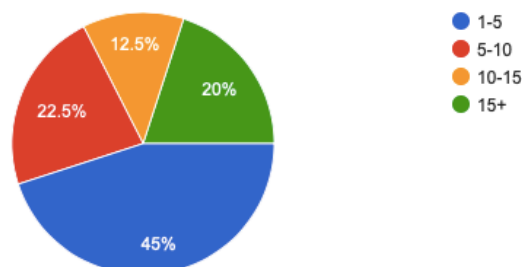
#### How many volunteers does your have club have (e.g secretaries)

40 responses



#### How many hours a week would each secretary spend on admin work (e.g creating training rosters, organising match schedules)

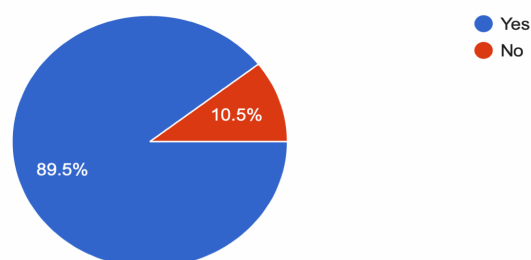
40 responses



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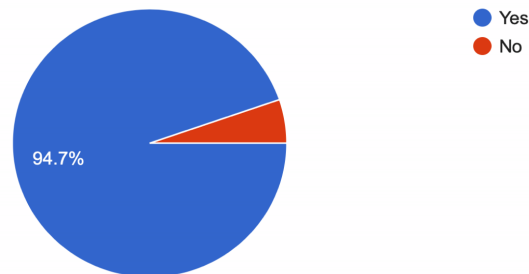
#### Would your club be interested in a system where players can pay their registration safely and securely online?

38 responses



Would your club be interested in a system where training rosters and pitch slots would be available to view online?

38 responses



These results show that clubs are interested in training rosters online and a safe online registration system but not as many clubs actually rent out their facilities. This made us rethink our business plan and we came to the solution that each individual club will be able to purchase packages with features on the system that they feel they need. This ensures clubs are only paying for what they need. We also gained an understanding that each club have different number of volunteers who all work various hours. The survey also includes responses for each club on how they think we could improve the system even further.

We gained an understanding that not all clubs carried out these processes in the same way, for example upon researching different types of registration forms used by individual clubs we came to realise that they collect all different data which can be challenging to cater for all these different types. For our prototype we just focused on the one type, with the hope to incorporate more in the future.

### **Revenue Streams:**

Our proposed revenue streams will be from each club paying a yearly fee to use our system. Upon sign-up, clubs will have the option to choose which features they would like to purchase. This ensures that clubs are only paying for what they feel is necessary for their club.

Clubs will be able to sign-up to the application free of charge. Without purchasing any packages, they will be able to create a club page where they can add information like club details, teams in the club and pitches associated to their club. We feel that once the club signs up to use the free features of the application they will be enticed to avail of the various other features we offer.

**Player registration feature:**

This part of the application allows clubs to invite members to pay their registrations fees and complete their registration forms online. This feature is available to clubs for €100 per year on a subscription basis. Once the club has purchased this feature it will be immediately available to them.

**Training rosters feature:**

This feature is allowing clubs to display their training rosters in an online platform that is easily accessible to members of the club. Clubs will be able to purchase this feature for €50 per year on a subscription basis.

**Rent-a-pitch feature:**

The rent-a-pitch feature allows clubs to rent their pitches to users online. Clubs can choose which pitches they would like to rent out and will be able to show which time slots are available. This feature is available for €100 per year on a subscription basis.

**Shop feature:**

Clubs will have the opportunity to sell club jerseys and gear online. They will be able to upload items in which users can pay for online. Users will then be able to collect the item at the club's grounds. This feature is available for €50 per year on a subscription basis.

We offer a discounted price of €250 per year when a club purchases all of these features in the one package.

## **Initial Functional Specification for the Idea**

### **What is the application supposed to be?**

Club-Kit is a web application which supports sports club day to day activities. As mentioned in the previous section we conducted surveys to reach out to various sports clubs in Ireland to try and gain an understanding of what features these clubs urge for to assist with these activities. We received many different ideas, due to time restrictions we had to limit some of these features which we'll discuss in the next part.

Sports clubs are still conducting their day to day tasks with old methods such as word docs, excel spreadsheets and surprisingly paper. Club-Kit wants to create a hub which can handle all these tasks whilst creating relationships between features to enhance a club's experience.

Club-Kit is essentially giving sports clubs a web presence with enhanced features that a typical local sports club informational website won't offer. The great thing about building a platform like this is the fact we can always build upon it with new features.

### **What is the application supposed to do?**

**Club Home:** Clubs can display information associated with their club (address, contact details etc. Options to post notices for members to keep them informed, could also be used to post scores and fixtures. We had hoped to create separate sections for scores and fixtures to make them more customizable but due to time consumed by developing other features this will have to be added into our backlog. A contact forum will also be incorporated into the club's home page.

**Player Registration:** One of the biggest requests we've received back from survey's was a way to handle play registration, clubs are still carrying out conventional ways of paying cash in hand to clubs. It leads to the risk of untracked or lose of payments. Clubs are eager to find a more safe and secure method to handle this. Of course, there is payment methods such as PayPal, but clubs still require some sort of registration form to be filled out, which Club-Kit can accommodate whilst handling payments.

**Roster / Scheduling:** Club-Kit will incorporate training scheduling to help club better organise availability of pitches. Clubs can enter the date, time, pitch and team which will be rostered in for a specific day. This will all link to their teams and pitches they've created within their club page.

**Rent-a-Pitch:** This feature will allow clubs to outsource pitches/courts which are not in use. Offering them another source of income. This feature can work standalone or in sequence with the roster / scheduling feature. Payment's will be handled through this feature or options for cash on arrival is also available.



**Club Shop:** This feature is something we had not thought of in our initial idea, due to the helpful feedback from our survey we decided to incorporate this feature. This is something our competitors have not included in their software. We plan to handle all in club purchases, from speaking with some clubs they advised their current procedures for this type of purchase is for managers to hand out sheets with club items to players. Have them fill out what they wish to purchase. Bring back the sheet with payments. This is then given to club volunteers who acquire the goods then organise a day for players to come and collect their gear. Club-Kit aims to make this more pain and error free.

Something we came to realise during our market research is that not all clubs need all these features. Many of our competitors simply have a set price for a package which includes all their features. Club-Kit moves away from this sales technique and offers clubs specific packages based on their needs. Clubs can add or remove packages when they want.

### Who is going to be using this application?

Club-Kit is built for sport clubs. Employees and volunteers can benefit from our platform to help reduce time spent carrying out day to day activities. Clubs can organise their pitches, teams and players. Club-Kit will handle payments for registrations, pitch rentals and in club purchases.

Our focus is not just targeted at employee and volunteers within clubs we want members of these clubs to gain benefits from Club-Kit. Providing them with informative details regarding their clubs whilst offering a more secure way of making payments. In the next section we will expand on the functionalities offered to these potential users.

### Is there a precedence for this application?

Features	Club-Kit	MemberGrip	Sportlomo	Book-A-Pitch	BMCSports	PlayyOn
Registration	Yes	Yes	Yes	No	No	Yes
Communication & Messaging	No	Yes	Yes	No	No	Yes
Promote Activities & Events	Yes	Yes	No	No	No	Yes
Game, Competitions & Tournaments	No	No	Yes	No	No	Yes
Team & Players	Yes	No	Yes	No	No	Yes
Referees, Umpires & Officials	No	No	Yes	No	No	No
Live Scoring	No	No	Yes	No	No	No
Team Rosters	Yes	No	Yes	No	No	Yes
Build Personal Website	No	No	Yes	No	No	No
Mobile App	No	No	Yes	No	No	Yes
Renting Facilities	Yes	No	No	Yes	No	No
Club Shop	Yes	No	No	No	Yes	No

## **Functional Requirements**

### **Main Website**

**Description:** This will be our official website. Detailing what we do, the packages we offer, pricing for our service, contact details to for potential customers to get in contact. We will display the clubs registered with us and provide links to access those club pages.

**Criticality:** Moderate – this is an important aspect to our business but does not require much functionality so time to develop is not a huge concern. Of course, it is the first thing potential customers will see so it is important to make a good first impression.

**Technical Issues:** This raises no technical issues as it is just basic front-end development to portray our platform. This will be completed and populated once we've built the back-end functionality.

**Dependencies with other requirements:** This is an optional path to access specific club pages. Whilst it does provide a simple way to access these pages it is still possible to access through the URL of the clubs.

### **Club Registration**

**Description:** We allow for any club to register an account for free, simply to avail of our club home page feature. They can display club information and add posts. Additional features do require purchasing.

**Criticality:** High – This is one of the most important as it allows clubs to set up and potentially pay for our packages. It gives them a feel for the platform. Packages can be purchased during initial registration or after.

**Technical Issues:** This will require a lot of restrictions to packages. We need to have a plan in place to help automate availability of packages depending on user purchases. Options to allow specific users part of the same club to avail of these same features.

**Dependencies with other requirements:** All packages rely on this requirement to take place in order for them to be functional.

## **Registered Users Functionality**

### **User Profile / Login / Logout**

**Description:** As a user they will need to be able to update personal details. Change or reset password. Login and logout of their profiles.

**Criticality:** High – this is important to help reduce queries coming into the business requesting these updates when the process can simply be automated. Logging in and out are essential for security and convenience reasons.

**Technical Issues:** There is Django libraries available to help accomplish this so there should be no issues involved in implementing these requirements.

**Dependencies with other requirements:** This is required in order for registered users to update club details and avail of packages.

## Club Home

**Description:** Registered users will be able to display informative details regarding their club. They can post updates and notifications to inform club members. Registered users will need to have an option to add, update and delete club information.

**Criticality:** Moderate – Not implementing options to make changes isn't crucial but it is convenient to allow users to manage their own pages. It will avoid queries coming into the business.

**Technical Issues:** CRUD operations will need to be implemented to carry out this functionality. With the help of Django Rest Framework this should not raise too many issues.

**Dependencies with other requirements:** This does not impact other requirements as it is just information based and changes are just displayed within this page.

## Club Player Registration

**Description:** Clubs will be able to see which members have registered for the club. This is important to check membership payments and organise teams. Updating player details is important for the clubs e.g. Contact and address details.

**Criticality:** High – This feature is a big aspect to our application. We will focus on the basics and time depending we may add more functionality as to what clubs can do with these details.

**Technical Issues:** Creating relationships between all these tables is a task which is constantly being updated. Due to the wide variety of models in our database we need to focus on the relationship between them.

**Dependencies with other requirements:** Club-Kit aims to create packages that don't have to be dependent on other packages. As mentioned, previous our sales strategy is to offer packages based on the club's needs. If we made certain packages dependent on each other this simply wouldn't work. But options are there for clubs that wish to merge data between packages.

## Club Roster

**Description:** Registered users can create schedules to help manage times pitches are occupied by members. Users will need to add, delete and update time slots where necessary. Depending on the club, we may set as days rather than dates for clubs which don't update their rosters frequently. We aim to include cancelling features to advise members if pitches are unavailable.

**Criticality:** High – the club roster is one of 4 of our paid packages so this is crucial this is implemented. Areas of improvement can be incorporated into this, but we aim to get the basic concept developed.

**Technical Issues:** For clubs which have both the roster and rent-a-pitch packages, the difficulty here will be to monitor actions carried out on either will be portrayed on one another. E.g. Roster shows pitch is being used at 18:00, rent-a-pitch should not show this as an available time to book.

**Dependencies with other requirements:** As mentioned previously this package can work standalone but integrating with rent-a-pitch is required if both packages are used.

### **Club Rent-a-Pitch**

**Description:** Registered users will be able to add or remove pitches available for rental. Set times and dates available. Payments will need to be saved and processed.

**Criticality:** High – is another important package our platform provides. Removing and adding pitches is needed for this feature to work. Clubs if they wish should have the option to collect cash on arrival or received payments digitally.

**Technical Issues:** Merging the club's roster and rental feature is challenging then incorporating payment features is another technical issue as there are many options which can be implemented to accomplish this, issue is picking the most suitable one.

**Dependencies with other requirements:** This is a standalone package but can be incorporated with the club roster package.

### **Club Shop**

**Description:** Registered users will need to upload clubs' items to a shop. Include images, titles, descriptions, categories, sizes, prices, units etc. Clubs will need the ability to add, update and delete club items when necessary.

**Criticality:** High – this feature is important for registered users to handle in club purchases. Within incorporating these requirements, clubs will encounter issues with members purchasing out of stock items.

**Technical Issues:** Rendering updates items in the browser should not be a difficult task but a lot of testing we be required for this feature to ensure it works as expected.

**Dependencies with other requirements:** This feature will not depend on any of the other packages but will depend on the members purchase details to ensure when an item is bought it updates the units on the items.

### **Un-registered Users Functionality**

#### **Club Home**

**Description:** Un-registered users will have the ability to read information within a club's home page. Contact forum will be available for members to contact clubs.

**Criticality:** Moderate – This is a simple implementation it is not critical to our overall platform packages but due to the lack of time required to add this in we will include it.

**Technical Issues:** There is no real technical issues involved in this, it simply renders club details on a html page with an addition of a contact forum.

**Dependencies with other requirements:** This depends on club providing their details for un-registered users to see.

## Club Player Registration

**Description:** Members will need to fill out registration forms and provide payment in order to complete the registration process. Confirmation will need to be provided to members to should registration is complete.

**Criticality:** High – this is an important part of this package. Due to the large number of different registration forms clubs have implementing different types is quite time consuming for our prototype we will just implement the one with options to include more in future development.

**Technical Issues:** Designing a form is a simple process for this but handling payments and sending confirmation once payments have been processed will prove challenging.

**Dependencies with other requirements:** This will have to work alongside club member details. When new members are registered for clubs these details will need to render on the club's admin page.

## Club Roster

**Description:** Un-registered users will only have access to view roster information provided by clubs.

**Criticality:** High – this is important for clubs that wish to share rosters with members. No real requirements are needed for the un-registered user's point of view other than displaying this information.

**Technical Issues:** There is no real technical issues involved in accomplishing this requirement.

**Dependencies with other requirements:** This will need to work alongside the club's functionality for this package and if rent-a-pitch package is used it will need to render the updated information.

## Club Rent-a-Pitch

**Description:** Un-registered users will have the option to rent a pitch for a specific date and time depending on the availability of the pitch. Payments on arrival or transfer should be optional for the user.

**Criticality:** High – this functionality if required for the rent-a-pitch functionality to work.

**Technical Issues:** Handling updates between the different packages for this is a technical issue we have considered. Failing to do this successfully can result in double bookings and unhappy customers.

**Dependencies with other requirements:** Depending on the package used by the clubs and the availabilities provided by the clubs will all depend on what the user can book.

## Club Shop

**Description:** Un-registered users will need to select items, add them to a cart, process payments and receive confirmation. We believe a lot of local clubs who have members visiting on a weekly basis should not require a logistics set up to transport orders. Clubs will have to organise collection processes. Possibly further down the line we could incorporate this.

**Criticality:** High – Members must be able to purchase club items. This is an essential part of our packages. Developing an ordering system to simply click and pay on arrival was a possible solution but we've decided to incorporate an e-commerce site onto the platform.

**Technical Issues:** Handling orders within an e-commerce store isn't something we've worked on before so it will be a learning curve for us to implement but many clubs requested for this feature and it is something other similar applications don't provide.

**Dependencies with other requirements:** This will all depend on what items the club provides to their members. Clubs need to ensure shop is kept up to date.

## Admin Functionality

### Superuser

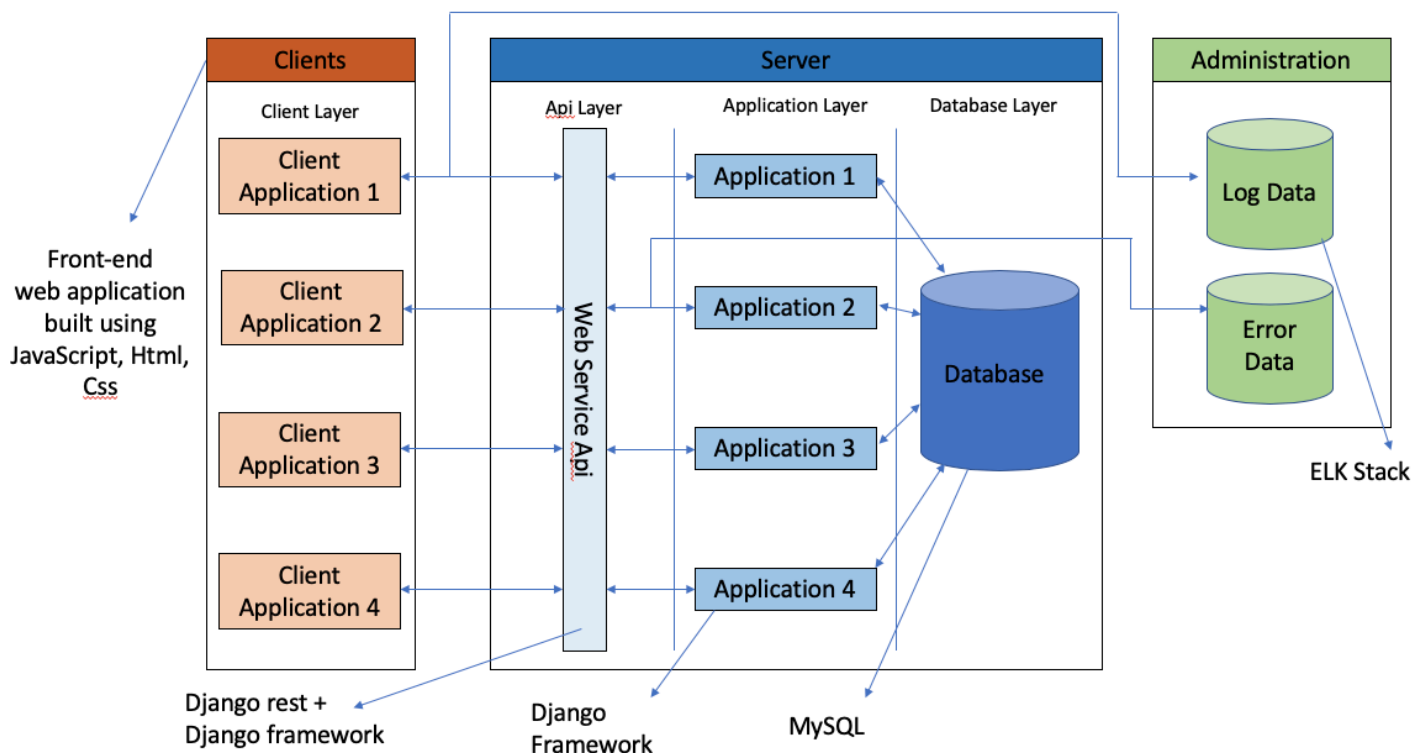
**Description:** As an admin we can oversee all tables within our database, we can add, update or delete any records when necessary.

**Criticality:** Low – This functionality can be achieved through the database. Implementing this simply provides a more user-friendly interface to make these changes.

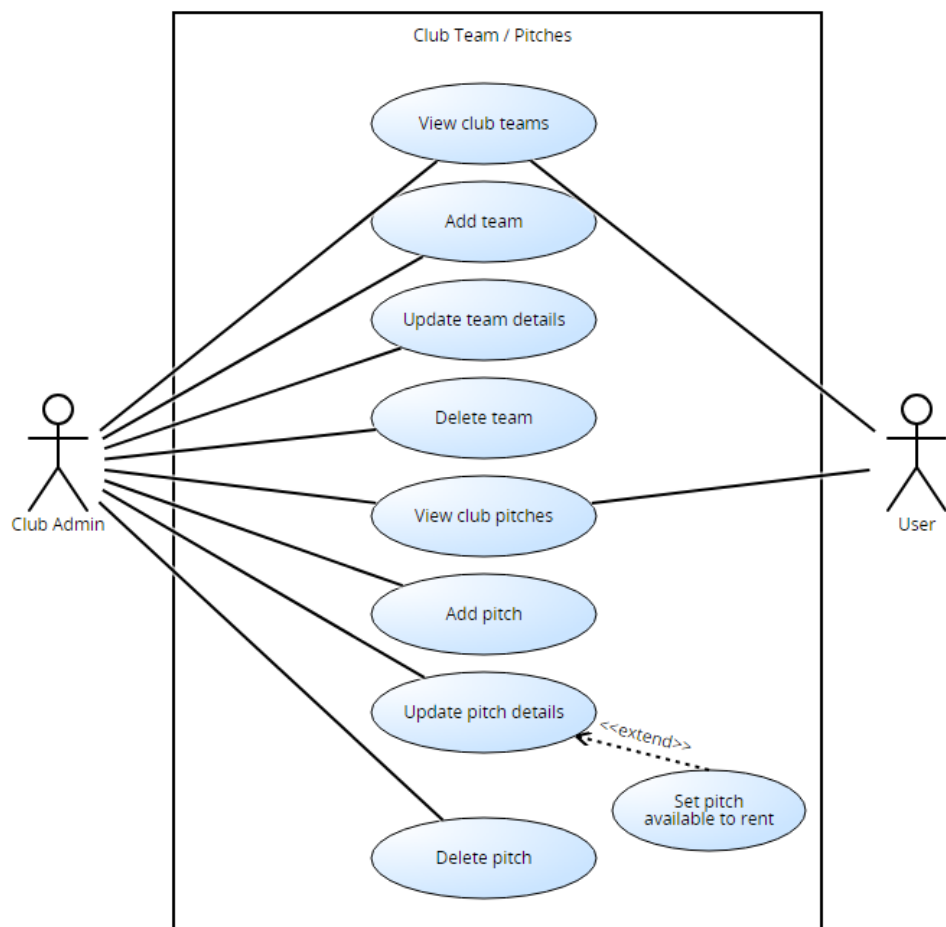
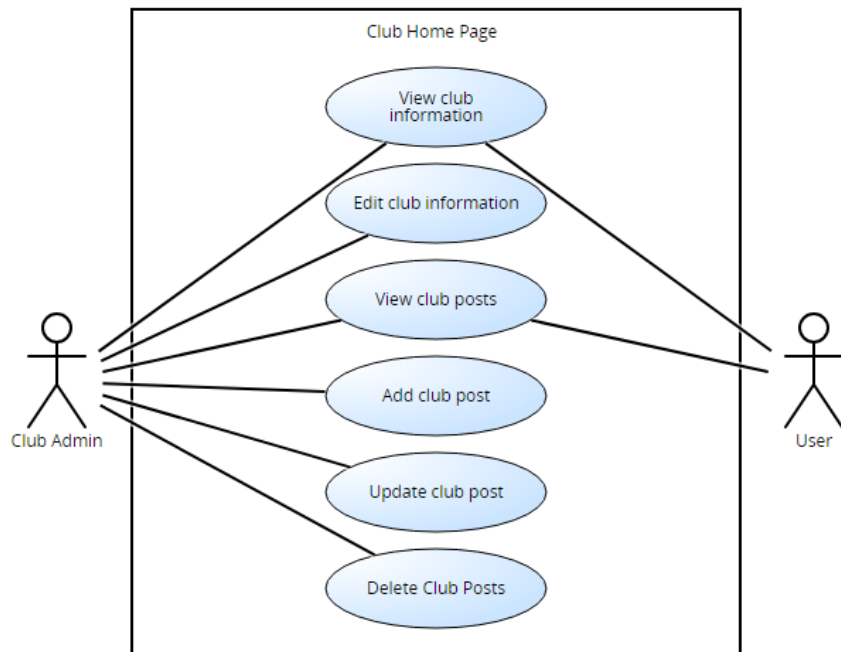
**Technical Issues:** This is no technical issues involved in this as Django creates this interface when models are created.

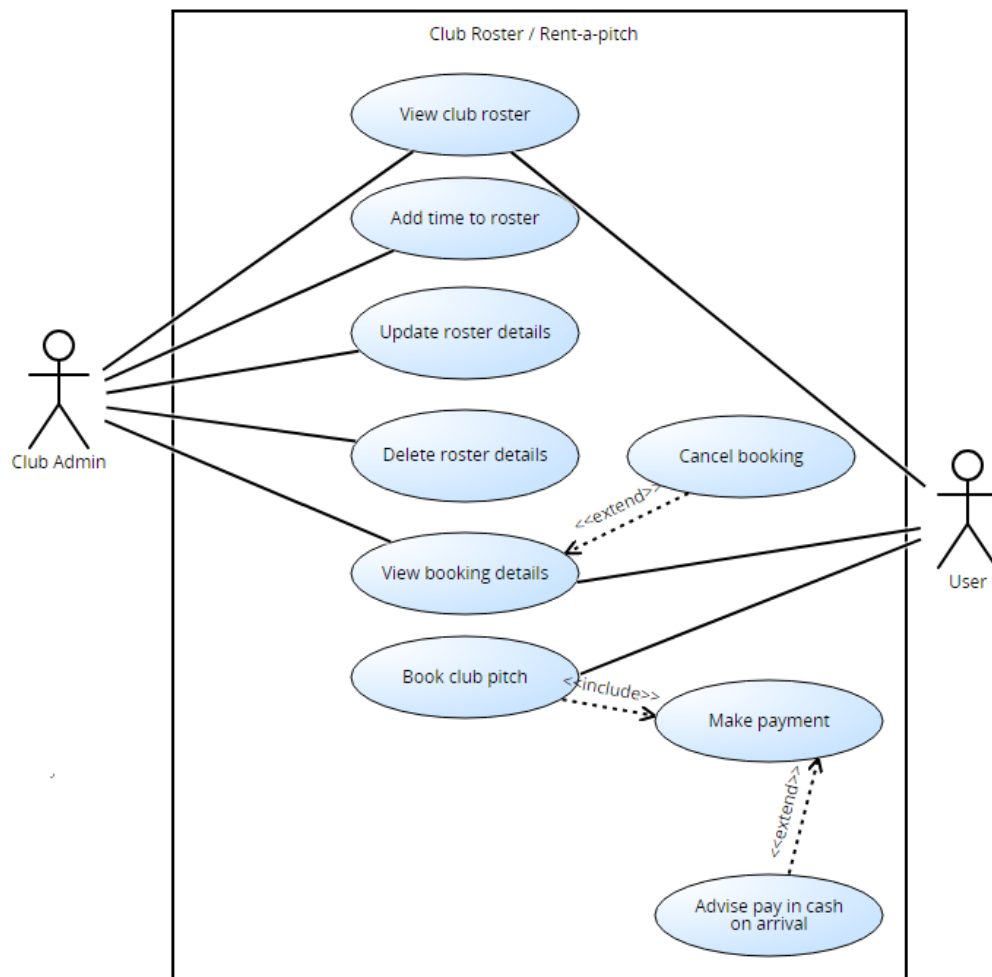
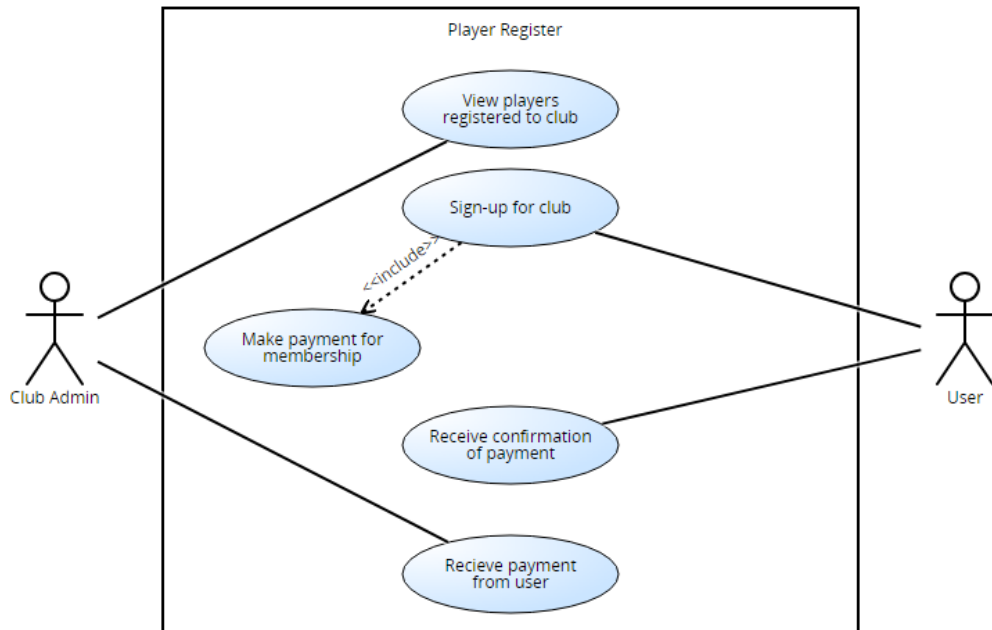
**Dependencies with other requirements:** This interface is dependent on models we create throughout this application.

## Architecture Overview

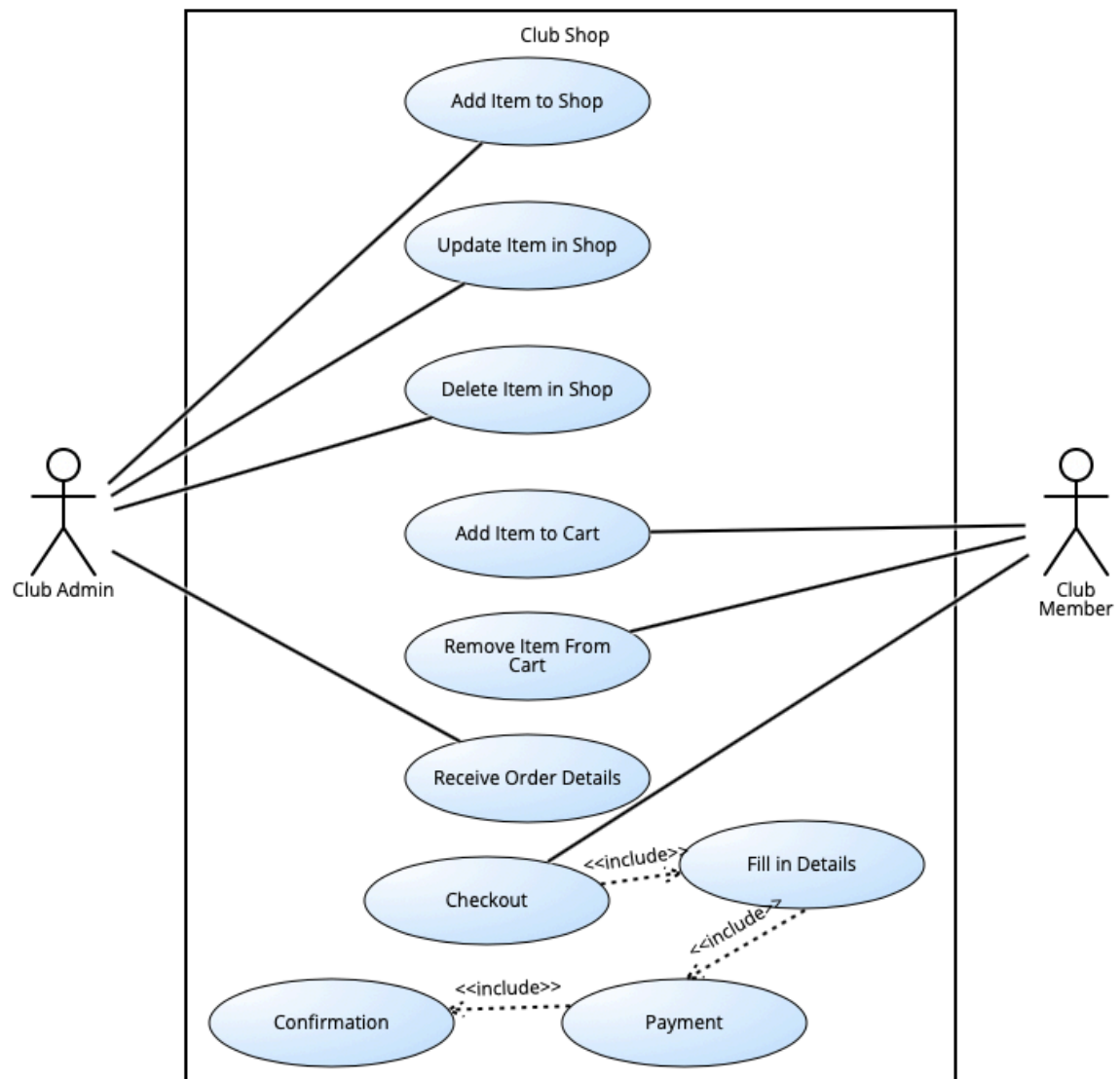


## System Models









## **Technologies Used**

**Application Platform:** Our application will be built as a web-app, but we will modify the front-end to be mobile friendly. We believe there is no need to develop a mobile application for our software as the main functionality is for admin work which is not suitable to be carried out on a smart phone, but we believe it is necessary for it to be compatible on smart phones for our features such as pitch rental and club shops.

**Project Management Application:** In order to manage our project, we decided to use Trello a web-based project management application. It is a collaboration tool which incorporates a scrum framework which will in turn help our project move along as productively as possible. We will use the dashboard to plan our iterations and tasks.

**IDE (Integrated Development Environment):** For our IDE we chose PyCharm due to it being highly recognised within the python community and built specifically for python.

**Database:** MySQL is the database of our choice as it is faster, more reliable and cheaper than other database options out there. There is also a lot of documentation online to support our database needs. MySQL works well with many programming languages which is important and includes all the necessary features we need to develop our application system.

**Git Repository:** GitLab is our web-based git-repository of choice. GitLab allows us to collaborate on code, to help safely create and edit code on our project. It is free and open-source.

**Back-End:** Python is our preferred object orientated programming language which we have experiencing using. Using python, we will build our back-end functionality and API's. Using Django, with prior experience using this framework we decided to try and learn something new. We touched on Django Rest Framework in our development of the back-end, but did not use it thought-out the design as we had more experience using Django and felt more comfortable using this framework more.

**Front-End:** We had initially hope to build our front-end using Angular unaware of the high learning curve associated with it. Due to this we've decided to develop our front end using basic Html, CSS, and JavaScript with no framework to support these. It is our goal to learn this in the future but we just felt tackling this required learning will slow down our developing process for our outlined features.

**Testing:** Using Postman to test our API's. We also will utilise integration testing and hopefully some beta testing from one of our local football club volunteers.

**Logging:** Depending on time we will hope to incorporate ELK(Elasticsearch, Logstash, Kibana) stack to handle our logging. With the help of Kibana dashboard we can visualise our log data clearly and identify errors.

## **Technical Summary**

### **Description of what parts of the overall idea / functional specification will be prepared for the prototype.**

All of the functionality specified in the previous section will be implemented. There is many other features we had wished to include in the platform but due to timing for the deadline we've had to cut back. Currently we have taken on a huge amount of features, player registration, club rosters, rent-a-pitch and club shop. All of which are an application on their own. This is not a simple task but we needed to provide something which our competitors don't offer.

We've agreed to build a prototype for each feature with allows room for improvement later down the line. Our player registration feature will be a standard form with payment processing involved. Throughout our research we acknowledged many different clubs look for different information when members register. This is something we can build upon and possibly include different types of registration forms catered to certain types of clubs. But for the prototype we will focus on just the one.

Our club roster feature as mentioned previously will simply display club scheduling. For our prototype clubs will be able to set, update or delete times to their schedules showing what pitches are occupied by which teams. This information will be rendered on this page.

Our Rent-a-Pitch feature for the prototype will allow users to select pitches based on the clubs available times. This will work in coherence with the clubs roster if they have this feature purchased. Users will be able to process payments in order to make a booking and receive confirmation.

Our shop feature for the prototype will allow clubs to add, update or delete clubs items to a shop dashboard. Users will then be able to select items, add them to a cart and finalise payments. We will not be implementing a delivery set-up for the prototype most members of local clubs would live within the area. Arranging a courier to collect items within a town to bring them back to a processing centre just to be brought back to this town seems needless. Of course this can be incorporated later down the line but we aim to leave this out for the prototype.

### **A description of the technical challenges that would need to be overcome during software development of your prototype.**

Enhancing our knowledge of Django and being newly introduced to the Django Rest-Framework, has proven time consuming. Due to the lacked of back-end development during our internships and no programming modules in our final year. We've had to spend a lot of time doing courses to help us achieve our goal. We've purchased courses on Udemy to help us gain a better understanding of Django than that of what we learnt in third year. It has

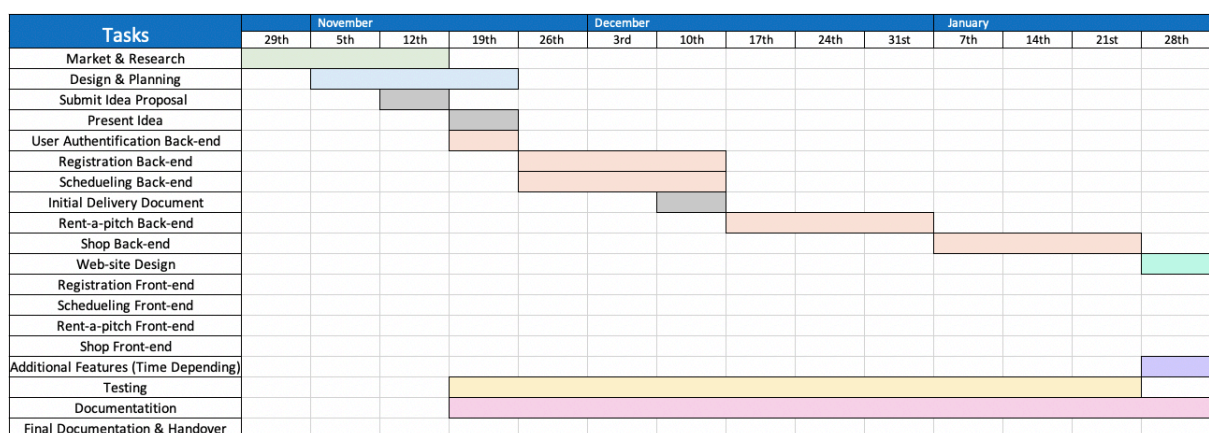
been challenging and it is something which we had not originally factored into our Gantt chart.

Unfortunately we could not spend too much time doing courses and have been learning as we go whilst developing the back-end. It has been difficult at times but also very rewarding. We've come across many errors and issues which we've learned from and know how to tackle them if faced with them again.

For our front-end development we decided to move away from learning Angular. As we've no prior experience using a front-end framework this will prove too challenging. We have carried out some courses in order to gain a better understanding of how Angular works and how to integrate Django into it. But due to the lack of time to gain the required knowledge to carry out this implementation we've had to leave it out with the hopes of learning it after the completion of the project as we learned how beneficial it can be to a web-application.

## Timeline

At the beginning of this project we created a Gantt chart outlining which parts of the application we were going to develop and by when. While developing the project we felt that this Gantt didn't correctly outline when we would complete certain parts of the application. Due to learning curves associated with specific parts of the project we had been slowed down a times and unfortunately, we've had to re-organise it for the last few months. Below are our initial Gantt charts set out at the beginning of the project.





Tasks	February				March				April				
	4th	11th	18th	25th	4th	11th	18th	25th	1st	8th	15th	22nd	29th
Market & Research													
Design & Planning													
Submit Idea Proposal													
Present Idea													
User Authentication Back-end													
Registration Back-end													
Scheduling Back-end													
Initial Delivery Document													
Shop Back-end													
Rent-a-pitch Back-end													
Web-site Design													
Registration Front-end													
Scheduling Front-end													
Shop Front-end													
Rent-a-pitch Front-end													
Additional Features (Time Depending)													
Testing													
Documentation													
Final Documentation & Handover													

Our updated Gantt chart shows that we plan to do the web site design over a couple of weeks. This will ensure that the site is made to a high standard and displaying correctly for users on all types of devices. The various front ends will also be completed over a few weeks to ensure that the user interface of each of the features is appealing, efficient and easy to use for our users.

We plan to complete the development of the application towards the start of April, testing of the front-end can commence as we start to get most of the design completed. This gives us plenty of time to ensure everything is done correctly and up to a high standard. Testing of the application and documentation for the application will be done continuously over the timeline of the project. The final documentation and handover of the application will be over the weeks of April 22<sup>nd</sup> and 29<sup>th</sup>.

The workload will be distributed between the two team members, Gavin Boyle and Conor Ward. Tasks will be completed both separately much different than what we initially hoped for. The workload is distributed as follows:

Gavin Boyle	Conor Ward
Marketing & Research (Contacting GAA & Tennis Clubs)	Marketing & Research (Contacting Football & Rugby Clubs)
Database Design	Models of Our Systems
User Authentication	Routing & Urls
Player Registration Back-end	Structure of Site
Roster Back-End	Error Handling
Rent-a-Pitch Back-End	Initial Testing of My Code
Validation's on Forms	Testing of Peers Code
Initial Testing of My Code	Shop Back-End
Testing of Peers Code	Website Design Front-End (Multiple Pages)
Player Registration Front-end	Shop Front-End
Roster Front-End	Implementing Payment Feature
Rent-a-Pitch Front-End	Club Home Front-End
Documentation of My Code	Documentation of My Code

We felt working on each feature together was needless and time consuming. Once we had completely part of the project, we would collaborate to show one another how things work. This method turned out to be more beneficial to the development speed of our project. Our hope is that we will strictly stick to this proposed timeline and workload distribution in our application development whilst helping one another when needed along the way.