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1. Introduction

1.1 Overview

The system being designed and developed can be best described as an online gym comparison and booking system. The system creates a seamless way for customers and gym's/PT's and Fitness instructors to better connect. The system will allow users to place and advertise their gyms or fitness classes to potential customers on our system. The system will allow people to search their current or requested location for gyms and classes and return the relevant gym or class that have been placed and advertised on the site. Each return list of gyms will display their facilities, prices, reviews and available time slots for booking. Classes will display the price, activities, reviews and available time for bookings. The user will have the ability to book and pay for their desired gym and then arrive at that gym and display their booking.

Our system will provide a platform for users to make comparisons for their possible gyms and fitness classes with speed and convenience without having to apply their own research and time to make these comparisons, this service will help connect gym's, PT's and fitness instructors to more customers. The application will also offer users variety in their membership if they opt into our monthly/yearly membership. This membership will allow users to make their desired bookings to all gyms signed up to the app without having to pay the inflated one time charge. This provides a new value to a customer's membership compared to an ageing standard gym membership.

For the local small scale gym owners, our app will provide a platform for their company and advertise and expand with a new larger customer base. Our application will also provide future stability and insurance for small scale gym business as the need to adapt, innovate and invest in revised business models for gyms after Covid-19 has increased massively.

For the local PT/Fitness Instructor, our system will provide a platform to connect and build a customer base. The system will also provide a secure, reliable and professional online booking and payment system. Our application provides a booking and advertisement which will become essential for these businesses to recover post-Covid.

1.2 Business Context

The system will be offered on both an online website and mobile application for free, this will allow free search and comparison of services. Revenue will be generated from those who wish to book one of these services or who desire to join GymNow membership. The Business context will be discussed in further detail in below in 2.1 Business concept

1.3 Glossary

PT

A personal trainer is an individual who creates exercise programs for their clients and helps them achieve their fitness goals.

CAGR

Compound Annual Growth Rate

IHRSA

International Health, Racquet & Sportsclub Association

MVC

Model View Controller, A software architecture pattern made up of three components: a model, a view and a controller.

MVT

Model view template, A software architecture pattern based on the MVC pattern where a template replaces the controller aspect of the architecture.

2. Business Model Summary

2.1 Business Concept

GymNow business concept is based upon the needs and wants of its two types of users. On one hand, we have the active gym customers and fitness enthusiasts who are restricted to single locations to go to their gym's, these locations restrict customers ability to travel and exercise regularly. They need to sacrifice and work around their gym's location because they can't simply exercise where they want when they want at a place and time that best suits them. Having an app that allows users to search where they are or where they are going for a class or gym will allow them to maintain their fitness goals and entice recurring usage. Offering a membership which can replace their current one location membership with over 100 and giving these customers constant choice's and releasing these restraints is of great value to customers. Gym customers will be more attracted to pay for a membership as can be seen by 76% of respondents in a survey set out to 100 gym customers. [1]

For the Local Unfranchised Gym owners, PT and fitness instructors they need to locate, advertise and acquire new customers so they can compete with competitors. These local businesses don't have the marketing teams that the franchised business have and find it difficult to reach out to new non-existing customers who are continually being swept up to franchised gyms. Many of these gym's don't have their own websites and social media following to advertise their business to a wide range of potential customers and the same can be observed for PT's and fitness instructors. Our business will provide a platform that will substitute for the lack of these features in return for a commission of any sales that occur on our platform.

2.2 Target User and Customers

GymNow contains a multi-side platform made up of two types of users and customers. On one side of the platform, we have people who have an interest in fitness and going to the gym. This can range from people who are interested in going to a plate's class one night a week in their local hall, all the way to fitness enthusiasts working out 5-6 times a week. These customers are looking for a service which is provided by the other side of the platform, the gym owners, PT's and fitness instructors who are looking to advertise their business and receive more customers.

The user's on the fitness customers side have a demographic of 18-40-year-olds, with an ever-increasing rate of 41-55-year-olds joining the fitness market. The app is ideal for those who are looking to find a new instructor, PT or gym who previously would have gone by word of mouth, leaflets and used google to search for these services much taking time or providing very little detail causing customers to pay for these services in hope for good quality and experience.

For the user's on the PT, Fitness Instructor and Gym Owners, these users are made up of single, small-sized businesses competing against the franchised gym. Instructors and Trainers usually work in their local area trying to find local clients and expand their customer base. They rely on their social media, referrals from other clients and leaflets to gather new customers, with very little advertisement done on online platforms due to costs. Our target gym owners are those competing against the biggest gyms in their area and county, these businesses struggle to acquire the customers the bigger gyms do, they don't market and advertise their services as much as they bigger gyms and also rely on word of mouth, referrals and leaflets to gain the customer base.

2.3 Value Proposition

Customer Segment	Value Proposition
Gym Owner, Personal Trainer, Fitness Instructor	Direct free advertising to target market
Gym/Fitness Customer	GymNow Membership has the highest number of gym locations in Ireland Reduce gym/class Comparison, booking and sign up time

A value proposition canvas for both customers can be seen below in the appendices.

Figure 2.3.1 Business Owner/Instructor Value Proposition canvas

Figure 2.3.2 Gym/Fitness Customer Value Proposition canvas

The application will produce value propositions for both user's of the system

Gym Owners, PT's and Fitness Instructors

Direct free advertising to target market:

Local small to medium-sized gyms marketing is mainly through local advertising mediums such as newspapers etc. and through social media platforms to the general population, but with our platform gym owners, PT's and fitness instructors will gain the benefit of advertising directly to their target market as users on our platform are only looking for the service they are providing and are their potential customers. This can reduce the market resource requirements that need to be invested by these businesses. Advertising directly to customers who are on the platform to find new businesses that will provide their service to them will also lead to more customers and hence more revenue. We can therefore offer a reduction of cost and an increase of revenue to these businesses.

Gym Customers

GymNow Membership has the highest number of gym locations in Ireland:

The current highest number of locations in any one membership in Ireland is held by FlyeFit with 16 located in Dublin and Cork [2] (FLYEfit Locations, 2021). This works well for people in Dublin but alienates the rest of the country. GymNow aims to start with 5 gyms in every county in Ireland, this will provide gym customers with variety wherever they are in Ireland and provide customers with the facilities to train where they want when they want. This gives their membership more value than any other gym membership.

Reduce gym/class Comparison, booking and sign up time:

When selecting a desired gym or fitness class to attend, users spend much of their time deciding, first by location followed by time then by quality and price. Much of this decision-making process can be reignited by the problem at the end with quality and time. This comparison can become painstaking, which then needs to be followed by booking and sign-ups which adds again to the time taken from users day. Our system will allow users to perform these comparisons together as well as booking in one convenient single platform. Annoying Sign ups will be removed as all this information is gathered as the user registers for the app. GymNow will give a quick and easy solution to this problem and give more time back to people's day.

2.4 Market Analysis

The fitness industry is one of the fastest-growing industries in the world and so taking a look first at the market size for GymNow on a global scale, we firmly believe that our application is scalable to the point of the total addressable market being any global gym customers that currently utilize a gym membership. According to the latest IHRSA report published September 30, 2020 (The 2020 IHRSA Global Report, 2020), the global market size in the fitness club or gym industry is 96.7 billion, with approximately 184,000,000 gym members worldwide.

When we then take a look at the Irish fitness industry where according to Irish examiner in 2019, the gym and fitness club market size is worth approximately 300 million with 720 gyms or fitness centres nationally and 10.4% of the Irish population currently utilizing a gym membership which is approximately 510,000 people in Ireland. The compound annual growth rate for the period 2020-2024 for this Irish market according to a recent Statista report is 5.4% (Fitness - Ireland | Statista Market Forecast, 2020), which is similar in comparison to the global gym and fitness club market CAGR for the same period which is 7.81% (Health and Fitness Club Market 2020 Size, Share Global Production, Business Growth, Industry Revenue, Demand and Applications Market Research Report to 2024, 2020).

Figure 2.4.1 Do you want to try a new gym

From carrying out our own primary market research through a questionnaire which we sent out to friends, students, work colleagues and sports teams we are involved in, we were able to gain a great insight into the scope of our target market and what we can realistically

achieve when it comes to our business idea. We received over 100 responses for our questionnaire and so were able to make a number of assumptions from our data set and their responses:

Of the people who have a gym membership or previously had one, 27.1% said they would like to try a new gym and 49.4% said they maybe would.

Taking this into consideration as well as in relation to the size of the Irish gym market as previously discussed above, we can roughly say that at a minimum our target market is 27% of the 510,000 people who are currently a gym member in Ireland, this gives us 137,000 possible gym customers on a national scale. Furthermore, combining the Yes and Maybe responses in our questionnaire for this particular question we get 76.5% which is 390,150 potential gym customers again in relation to the number of people who currently hold a gym membership in Ireland (510,000). Another response from our questionnaire we used to validate our value proposition for gym customers was that 77.9% would be open to trying a new gym if there was no extra cost on their membership, in other words utilizing multiple gyms but having only one gym membership. These figures have been backed by our survey of gym membership seen below in the appendices.

Figure 2.4.2 Would you try if there was no extra cost on your membership.

When it comes to gym owners then or PTs there are some recent trends which we believe is of benefit to our business idea and we will also take a look at the competition and what's already out there in the market. As mentioned previously the fitness industry is one of the fastest-growing in the world and this is no different here in Ireland, where there was a 167% increase from 311 to 831, in the number of gyms that have opened from 2010-2019 (Number of gyms in Ireland up 167% in 10 years as commercial vacancies rise, 2020). Outside of the current pandemic and into the future this is a clear indication that there will be a number of new gyms opening nationwide who will need help advertising, gaining customers and generating revenue, which we believe our value proposition provides.

Some of the main competitors to our application who are already established in the market in Ireland are:

	FlyeFit	Ben Dunne Gym	GymPlus	Train Away
Monthly Price	€32 + €25 sign up fee	€29	€59	Only offer day pass
Locations	Dublin & Cork	Waterford, Meath, & Laois	Meath, Dublin, Kildare Louth, Cork	(UK based) small number in Dublin
No. of locations	16	10	8	
Application	No	No	Yes (Apple & Android)	Yes (Apple & Android)
Social Media	<ul style="list-style-type: none"> Facebook Instagram Twitter Youtube 	<ul style="list-style-type: none"> Instagram Facebook 	<ul style="list-style-type: none"> Facebook LinkedIn Instagram Twitter Youtube 	<ul style="list-style-type: none"> Facebook LinkedIn Instagram Twitter Youtube
Additional Features comments	Roaming membership gives customers access to any of the 16 gyms	Best monthly price	<ul style="list-style-type: none"> FitSense App Optional use of local swimming pools/classes 	Offers day valid pass to use a gym
Online coaching/ fitness classes	Yes	No	Yes	No

Given the current situation with covid and in order to elevate our platform above these competitors, we had also planned to implement online coaching sessions provided by personal trainers which our gym customers can pay a one-time fee to join an online class which they can do from the comfort of their own home.

2.5 Revenue Streams

Our two main revenue streams mentioned in our business model canvas are the one-time fee users will pay to use a gym displayed on our platform and also the monthly membership fee users pay on our application which gives them access to every gym displayed on our platform at a reduced rate. There is also an additional feature we hope to implement in our application which is online fitness classes which PTs will be taking, our users will be able to pay a one-time fee and take the fitness class or workout from their own home. This additional feature of our application was added given the current circumstances with covid-19 but also to provide our customers with a service that many of our competitors mentioned above do not provide.

Our first main revenue stream is the one-time fee our users will pay for the use of a facility or class displayed on our platform. In carrying out the questionnaire as part of our primary research, we established that 33.3% of the people who responded said they have never attended a gym without holding a gym membership, in other words attending a gym as a guest possibly and paying a one-time fee. The rest of the respondents attended a gym without a membership from 1-2 times a year to more than 10 times a year. Keeping these figures in mind we were able to make the assumption that 66.6% of the target market is attending a gym and paying a day rate. The target market is approximately 390,150 which is 76.5% of the 510,000 who currently hold a gym membership in Ireland, we got the 76.5% figure from the Yes and Maybe responses to "Do you want to try a new gym?". We are able to then estimate that 66.6% of the figure 390,150 is 259,000 gym customers who use a one day pass at least once a year. To gain further insight into this revenue stream we then divide the expected target market of 259,000 by the number of months in the year 12, we get 21,583-day passes per month in Ireland. With our value proposition and a sufficient marketing strategy, we hope to acquire 15% of these day passes. This 15% is 3,250 one day passes, where we stand to earn €2.50 commission on each of these one time fee day passes, giving us €8,125. We hope this number will increase per month as our business grows exponentially and publicity for our service increases. However, we also have to take into consideration that we may see some drop off in growth as we estimate users may opt into our monthly membership upselling option after a positive user experience on our application.

Figure 2.5.1 How often do you visit a gym without membership

The second revenue stream generated from our application is our monthly gym membership upselling option. This allows users access to any of the gyms or classes displayed on our platform at a slightly reduced rate. We came to the conclusion that our service is willing to offer gym customers this monthly membership at a rate of €40, we were able to reach this figure due to the fact that our business is a cost given structure as we are a business start-up and will instead lean toward a value-driven price. This €40 a month gym membership is categorized in the higher rate of gym membership in comparison to our competition but from our primary research, we seen that already 30% of gym members are paying over €35 in monthly membership fees, when we then take into comparison the GymPlus monthly membership of €59 for access to eight gyms in Dublin and our membership we hope will allow users access to the highest number of gyms in Ireland, taking this all into consideration we believe it is quite a fair price. On the other hand we were also able to establish that 70% of gym customers pay less than €30 for their monthly membership, given this we hope to agree with gym owners that a day rate of €1 + €0.25 will be paid by us to each partnered gym every time a member on our platform uses their facility.

Figure 2.5.2 How much do you pay for your membership

On average from our research, we could see that a gym member goes to the gym $\frac{3}{4}$ times a week. Taking this into account we are saying 4 times a week a gym member goes to the gym, which is 16 times a month and therefore on average we will pay out €20 a month to the partnered gyms in the cases where the customer is a member on our platform. This gives us €20 profit per member, where we plan to obtain 2,000 members (2,000 at €20 profit each will give €40,000) within the first month of its launch, we feel this is an adequate

number given the resources we plan to place in our marketing strategy. For the second month after launch then given the exponential growth of our company and the increase in the network of gyms we estimate 3,500 members and then for month three we hope to reach 5,000, by ramping up marketing and advertising efforts. At the end of the year, we plan to reach 10,000 members on our platform, which is 2.56% of our 390,000 total gym members nationwide. The rates in which gym customers go to the gym was asked in our Customer Survey seen below in the appendices.

Figure 2.5.3 How many times do you go to the gym.

3. Functional Specification

3.1 Product/System Function

Below is our initial list of the product/system functions, these are the core functional requirements of the system which address the main functionality of the system. Each system function has its own individual function for the user and the system, dependencies and technical issues which are discussed further in part 4.

Registering

The user has to register their information to GymNow in order to make any bookings. Users need to create a username, password and enter their first and last name, date of birth, phone number and address.

Login

This function will allow users to login to their own account securely, here they can then make bookings and view their bookings.

Search Location

The user will have to enter a location into a search bar. This will return all available booking in the given location for both gym and fitness classes.

Filtering Search

Some locations may return an excess of available bookings, in this instance users can filter their search to find only gym's, only PT's and only Fitness instructors to find their wanted advertisements more quickly.

Enrol your business

Users who wish to advertise their services can apply through an application which will be sent to the GymNow team for review. GymNow's team will then contact users on successful applications and also unsuccessful applications and reasons why.

Updating Advertisement

User's logged into a business account can update the advertisement information being displayed on our apps such as available space, available dates and times, pricing, pictures and descriptions.

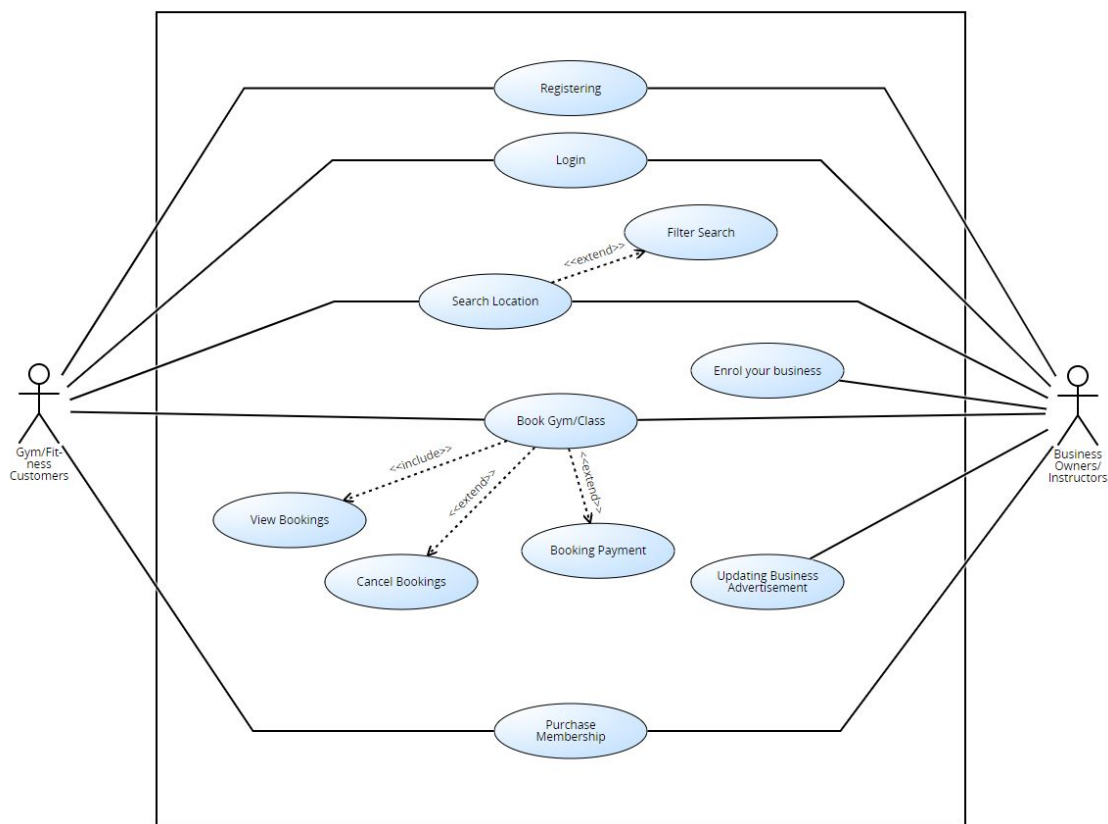


Figure 3.1 UML use case diagram

Booking Gym/class

Users can select their desired bookings/classes, this will create a booking confirmation on the system which can be then viewed in the user's wallet.

Booking Payment

After selection user's need to pay for their bookings if they do not hold a GymNow membership, once payment has been completed the booking confirmation will be available in the user's wallet

View Bookings

Here a user can view all bookings conformations along with an option to cancel any bookings.

Cancel Bookings

If a user wishes to cancel their booking made on the app this can be completed within their wallet.

Membership Payment

Here a user can opt into a monthly membership, this will give users access to all partnered gym's under one monthly rate.

Database

The database will hold the user and bookings data, this needs to be connected to our site to update, retrieve, process and display this data to the users.

3.2 Operational Scenarios

When entering our website users can browse selected "hot" gyms, PT'S and classes on the homepage, users can also enter a location into a search bar. This will return all gym's PT's and fitness instructors that are available in that location. This is displayed top to bottom based on the current time. To find the right time and booking user's can filter by hour, booking form i.e. gym, PT or Fitness instructor. Users will be presented their filtered results, these results will display time, price and stard review for quick compassion to the user. When selecting a booking if not already done so users will be prompted to login/sign up. If they select sign up the user will be asked to enter some information i.e. a username, password, first name, last name, date of birth, email address and address. If the user selects log in they will be requested to enter their username and password, If log in details are entered incorrectly an error message will appear until the correct details have been entered by the user. The user has now the availability to make a booking, the user will be requested to pay for this booking to confirm it. To view any booking confirmations the user can click view bookings, this will display all their current bookings. To cancel a booking the user will click view booking, select their desired booking the wish to cancel then click cancel. This will remove these bookings from their wallet. If a user is a gym owner, PT or fitness instructor and wishes to enrol their business to GymNow they can click enrol business, this will display an application form, when all required details have been entered the user can submit the application. This will be sent and reviewed by a GymNow employee and the user will be contacted with a response. There will be a contact us page for any issues or questions users may have.

3.3 Constraints

Listed below are some of the possible constraints that may arise as part of our project:

Time:

Taking into account studying for the January exams and other relevant assignments that need to be submitted in January, as well as meeting the completion deadline for this mid-term delivery of Monday 18th January 2021

Usability:

Our application has to be user friendly for all ages so users have a simple process in making a booking.

Fitness Industry Knowledge:

Neither of the group members have any relevant experience in the fitness industry or working in the industry so we are relying heavily on our primary and secondary research in this area.

Django/Python:

Limited experience in constructing an application/ implementation of a website application

Booking advertisement data:

Information on each Gym, PT, Fitness instructor are not unlimited and may be difficult to find.

4 Function Requirements

4.1 Register

Description:

This is the first step for any GymNow users in the process of making a booking. Users can access registration through a hyperlink button in the navigation bar or a redirect URL when browsing bookings and not being logged in. This will bring users to a registration form where they are requested to enter a username and password, their first name and last name, date of birth, address, email address and phone number. If a user selects a business account they will be requested in addition the business name, address, email address and phone number.

Criticality:

This is an essential functionality to our system, It allows us to present the value of comparing and booking on one convenient app and introduce upselling of paid membership to our registered user. Registering also ensures users are of the right age so we Adhere to Child Protection legal policies, we have their contact details and can reliably and securely allocate bookings to accounts.

Technical issues:

The registration form will be designed and developed using HTML and CSS, it will be hyperlinked from the navigation bar of any page and from booking buttons of non-logged in users. These links need to be redirected to the correct URL and also be able to differentiate between logged in and non-logged in user, a possible issue is redirecting already logged in user back to the registration page. The forms will be handled by python functions in the Django framework. The data entered into the form will create new entries in the PostgreSQL, under the user table, mapping the wrong data to the wrong column in the database will cause complete failures when this data is retrieved in other functions such as login and view bookings.

Dependencies:

Registration function is dependent on a connection between the website and a relational database. This function needs a location to store the data that is being entered by the user.

4.2 Log In

Description:

This login script requests the application user for their account username and password, the user then inputs this information when logging into their account, this is where we utilize our customer database in looking for the relevant user who is attempting to login. In the case where a user may forget the password to their account, we offer a solution in the form of selecting the hyperlink available which says "forgot username or password?".

Criticality:

This is an essential functionality of our service as it allows us to keep track of the users on our platform and enables the users to make a booking.

Technical issues:

Our application may need some form of security to protect a users account from unauthorized access such as two-factor authentication.

Dependencies:

This whole function depends on the previous function of users actually registering to use our platform, before they can be able to log in.

4.3 Search Location

Description:

Users are presented with a search bar in which location of counties and within counties of Ireland can be entered. This will return a list of gym's, PT'S and fitness instructors who have available bookings in that area. Users will be displayed with booking form i.e. gym, PT etc. , location, time, price and star rating.

Criticality:

This is another key functionality of the website and is essential to the overall concept of the application of searching for gyms, PT's and fitness instructors, comparing these results to make a quick and informed decision on a time and place that suits them.

Technical issues:

This search bar will be designed using a bootstrap search bar along with J Query. When entering a location into the search bar the user will be returned results, possible issues may occur when retrieving the available bookings if the location foreign key is not correctly

placed in the bookings table in the database. This can lead to bookings from incorrect locations being placed in the returned list or possibly no available bookings being returned for the location.

Dependencies:

This function is dependent on a PostgreSQL containing a Locations table, Bookings table to return results when searches are entered.

4.4 Filtering Search

Description:

When users are searching for a gym or class using our application one of the functions involved in the search gym location is filtering these searches after a user has specified the location. These searches can be filtered by the different forms of bookings such as PT, class, gym etc.

Criticality:

This is key for efficiency during a users experience with our application when using the search. Without this functionality users would have to browse through a huge number of returned search results on gyms, PTs or classes when they may just be looking for information on one. This function attempts to fast track users to their end goal of making a booking.

Technical issues:

Some issues that may arise with this function would be that not all the relevant filtered choices are displayed to the user and also to ensure that no search result is somehow lost in the filter that should be displayed.

Dependencies:

This function is dependant on the search location feature mentioned above

4.5 Enroll your business

Description:

When logged into a business account, users will be displayed to enrol your business in the navigation bar. Here the business can apply to join the GymNow network, the application will ask for the business details, their credentials and any certifications. This will then be sent to GymNow for review, in which after successful applications businesses can now advertise their services on the site.

Criticality:

This function is essential to ensure we can grow our network of gym's, PT;s and fitness instructors. This will help build our network more quickly and cost-efficiently as we can still gain the business our travelling sales team miss out on. This is critical as the more services GymNow has the more we can offer our customers in one area and the better the service we can provide, resulting in more customers and therefore revenue. Application review is also critical so we can ensure safe and qualified advertisements for the customers of our app.

Technical issues:

Ensuring the validity of the content added by applicants will be a key technical issue, this may request a scanning feature of certificates to be provided, developing such a tool may cause issues. To reduce the level of unsuccessful applicants and a negative experience for business users it is vital what information goes where in the form is made abundantly clear.

Dependencies:

This function is dependent on the register and log in function, as users must have registered as a business for "enrol your business" to be displayed to the user.

4.6 Updating Business Advertisement

Description:

Here a business user will be able to add changes to their business advertisement. They can add new photos, delete old photos, add new service descriptions, update their prices and update their available times. These updates will be displayed on their advertisements on GymNow.

Criticality:

This function is critical for business users, as their circumstances may change day to day like their available dates, times and prices can vary. Also to keep their advertisement looking fresh it will be key to provide this aspect to the users.

Technical issues:

Developing a process which is simple and quick for any to input these changes with little to no technical skills may be challenging, ensuring that the process will then automatically update these changes upon the site and also change the data within the database to represent the user changes may cause issues.

Dependencies:

This function is again dependent on a user being registered and logged in on a business account. This function is also dependent on this logged account being linked to an advertisements table in PostgreSQL.

4.7 Book Gym/class

Description:

In this function after searching and finding their desired service users can select and make a booking. After payment, this booking will then be displayed on the user's wallet under view bookings.

Criticality:

This is the core functionality of the entire GymNow project idea, it will allow users to book services after they have made their comparisons and chosen what suits them the best. Having this function allows GymNow to offer a convenient end to end process which once used users are likely to replicate. This function also allows GymNow to take in commission and generate revenue.

Technical issues:

Ensuring all bookings are time-relevant may present issues i.e. bookings should not be presented for times that have passed, also ensuring these bookings are removed when the quote of bookings paid has been reached.

Dependencies:

This function is dependent on a user being logged in, a location having been searched, and a connection between the site and the bookings table in PostgreSQL.

4.8 Booking Payment

Description:

Once a booking has been selected by a user they will then be requested to pay for this booking on the app. The user will enter their debit/ credit card details and if payment is successful, the booking will be confirmed to that user and a confirmation will be created and placed in the user wallet.

Criticality:

This function is critical to ensure the production of revenue from the Company.

Technical issues:

This function may introduce issues with the implementation and incorporation of a payment gateway, ensuring reliability, security and traceability will be key issues that need to be addressed in this function

Dependencies:

This function can only be completed after a user has completed the logged on the process, search a location and then made a booking.

4.9 View Bookings

Description:

When a user has made and paid for a booking, a confirmation of their booking will be displayed in their wallet this function allows them to access their bookings by clicking "view bookings". The confirmation will be displayed in the form of a QR code and the confirmation details. This will allow users to see their confirmation and display this when arriving at a gym, PT or fitness instructor. The user will also be given the option to delete their bookings with view bookings

Criticality:

This function is required so users can see their bookings within the app, this ensures we maintain an end to end process keeping the user on the app in order to display more advertisement and also this removes the pain of searching through emails for confirmations improving customer satisfaction. Using a QR code will allow user's and employee's to quickly confirm booking on arrival to bookings generating ease of use a major customer satisfaction on both sides.

Technical issues:

Incorporation of a QR code generator which reliably displays the correct conformation data when scanned may prove difficult for both potential costs and time constraints.

Dependencies:

This function is dependent on the Logged in, make booking and booking payment functions before view bookings can be invoked. It will also be dependent on both the user's table and booking table within PostgreSQL.

4.10 Cancel Bookings

Description:

This function gives the user the ability to cancel a booking that has been made on our platform. Cancelling a booking will involve selecting a booking within their wallet and clicking cancel and confirm, the user will then be able to be refunded for the booking once the cancellation has been made within our 2-hour policy. The business owner will then be informed of this cancellation and the booking will be added onto the system as available bookings to be rebooked by another user.

Criticality:

To ensure a positive customer relationship a cancellation function is vital for GymNow, as often the case scenario's present themselves which may cause users to be unable to attend a booking they have made. This can occur very very frequently and such many cancellations may have to be made, an inability to do so and still being in charge will create an extremely negative experience for users and will be unlikely to keep their business.

Technical issues:

The system will need to automatically send repayments to users upon successful cancellation, along with the ability to remove bookings from booked and place them back available for re-booking, this need to be done reliably to maintain successful paid bookings and added business for the service provider customers.

Dependencies:

This function is dependent on the user completing the booking process and viewing their bookings.

4.11 Purchase Membership

Description:

This function allows users to purchase the up-sell membership to GymNow, giving access to all partnered gyms under one monthly membership cost. This will remove the payment process required after making a booking. Purchasing Membership will require the user to select the length of membership and enter their debit/credit card details similar to the payment process for booking.

Criticality:

This function is critical to GymNow revenue as it is our main revenue stream.

Technical issues:

As previously stated ensuring a secure and reliable payment system is a key technical issue to be addressed in this function.

Dependencies:

This function requires the registration and log in process to be completed.

4.12 Database

Description:

All user data including registration details and login details along with all booking and advertisement details need to be stored in an organized database for quick and convenient access. Any updates to make booking or advertisements needs to update the details with the database also.

Criticality:

For the system to have good performance and be useful for both customers and developers it is essential that the data can be stored, accessed and updated quickly and reliably.

Technical issues:

In order to access and query the database a python script within a Django framework will need to be developed with the ability to also edit, update and delete data from tables.

Dependencies:

Database Function is dependent on a connection between GymNow application and website and PostgreSQL.

5. Initial Software Architecture

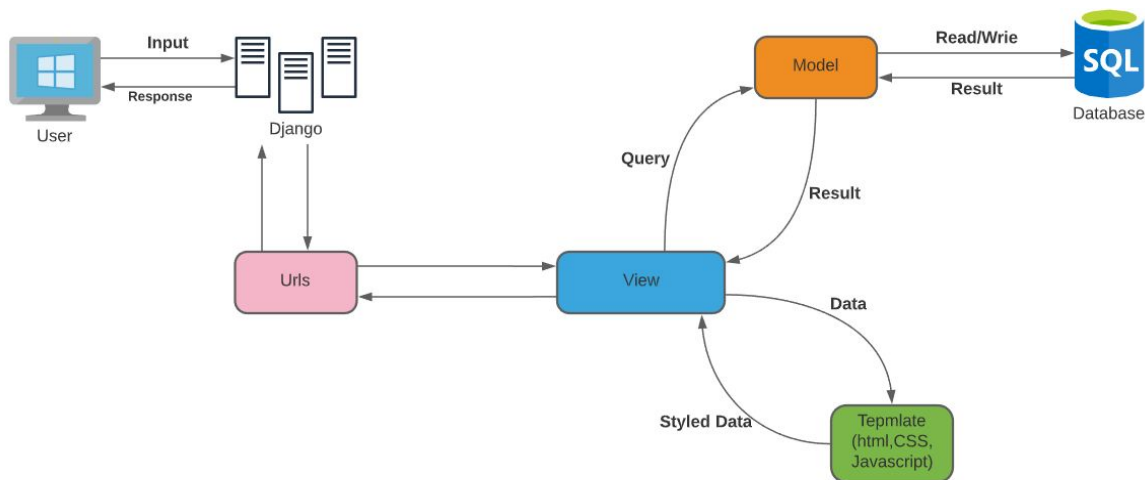
Our software architecture will be an adoration of the MVC architecture pattern called MVT.

With the use of the Django framework, the code needed to fetch data from the database and mapping it to URLs is handled by the framework so this component can be removed. This then leaves the system three components which make up the system architecture.

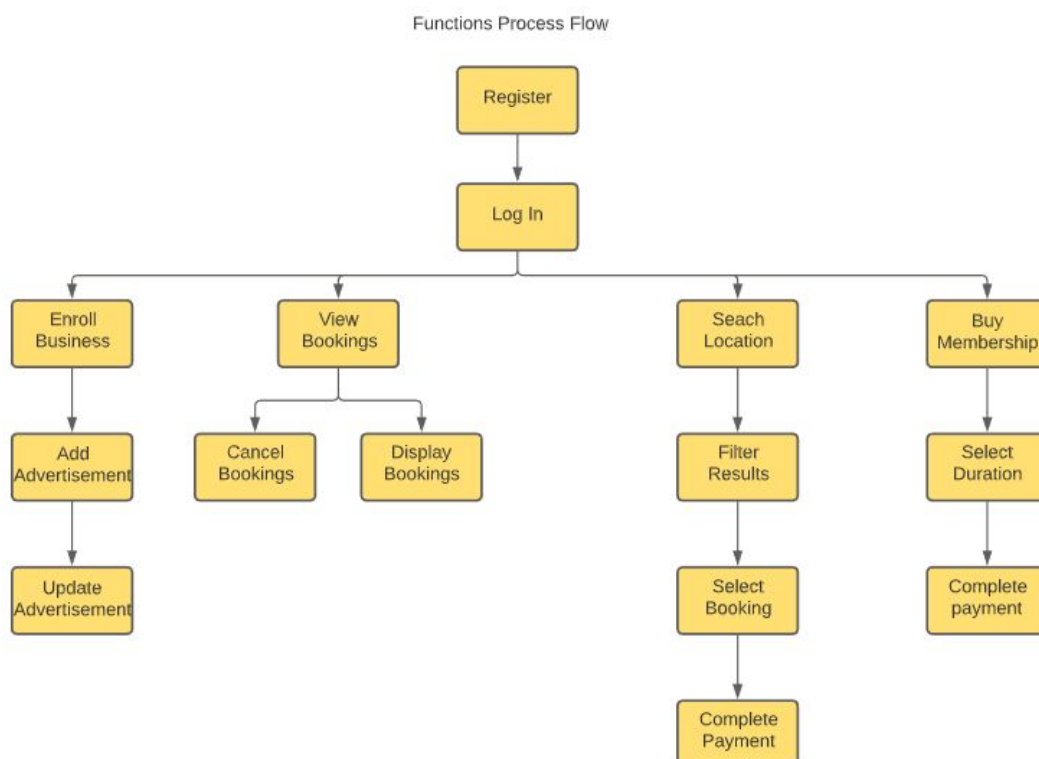
Model - This component is responsible for dealing with the system's data and each user's data stored in the database. The model will be queried from the view, translate these queries to read or write commands, receive these results and return these results to the view component.

View - The view component deals with the inputs made by the user on the application. The view component takes these inputs and then decides what pages and data should be displayed. The view will then query the model for the data, capture the response and then send this response to the template component.

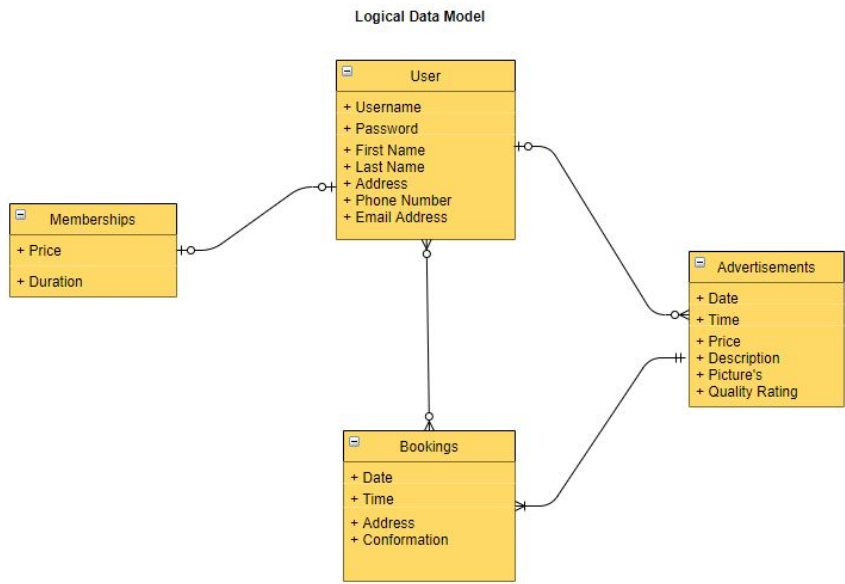
Template - The template component specifies how the data will be presented to the user. It takes the results from the view, applies its styling and then sends it back to the view who renders the template response.



6. High-Level Design



6.1 Logical Data Model



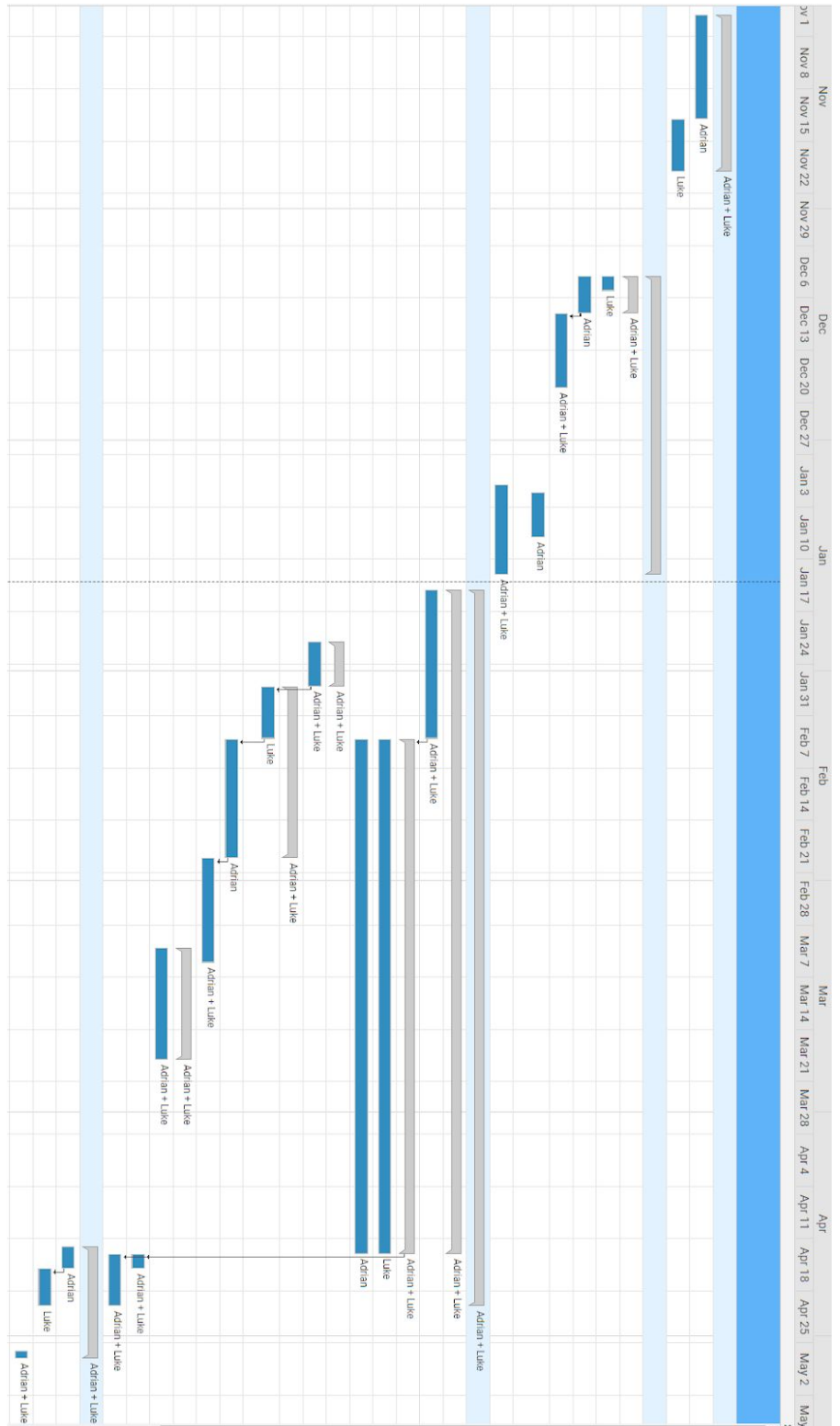
7.Project Timeline

7.1 Gantt Chart

Link: <https://app.smartsheet.com/b/publish?EQBCT=313c887a87924796af291426d46f302b> Under Grid view Select Gantt View to get full Gantt Chart

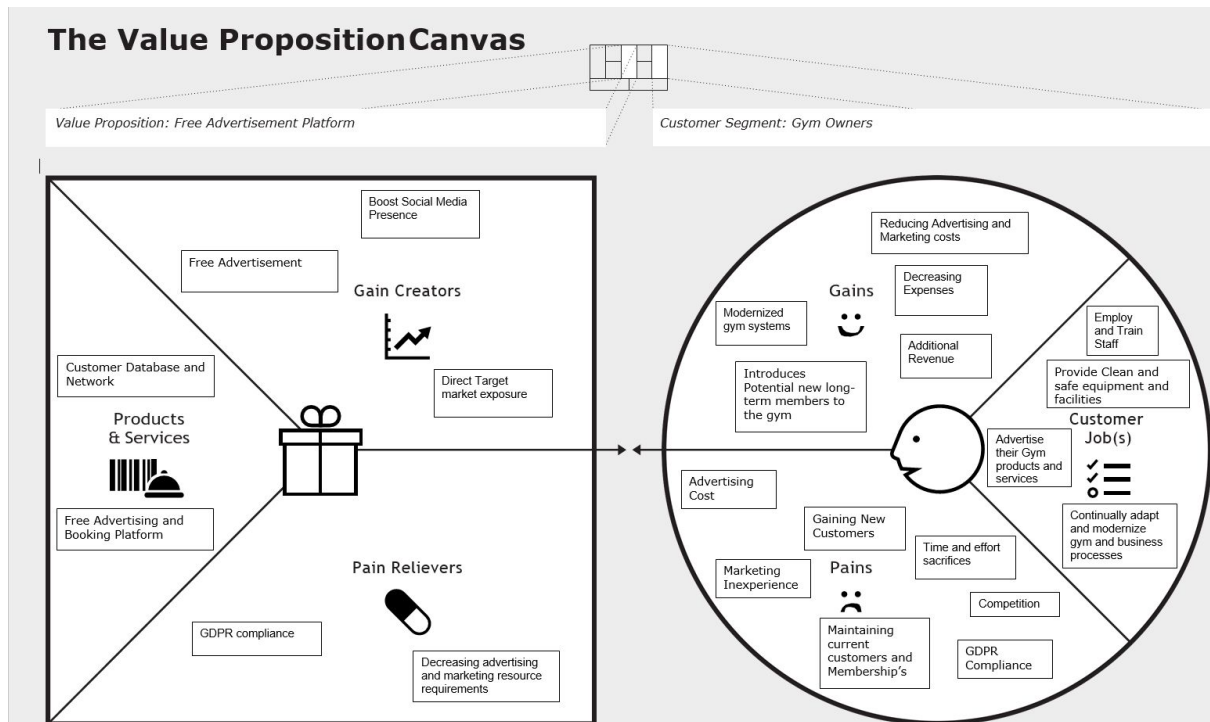
	Task	Assigned To	Start	Due	Duration	Predecess...
1	GymNow Project Proposed Timeline					
2	Idea Proposal	Adrian + Luke	05/11/20	25/11/20	15d	
3	Proposal Document	Adrian	05/11/20	18/11/20	10d	
4	Proposal Presentation	Luke	19/11/20	25/11/20	5d	
5	Mid Term Delivery		10/12/20	18/01/21	22d	
6	Research commercial potential	Adrian + Luke	10/12/20	14/12/20	3d	
7	Discover potential Competitors	Luke	10/12/20	11/12/20	2d	
8	Research market size	Adrian	10/12/20	14/12/20	3d	
9	Analyze Viability of the proposed solution	Adrian + Luke	15/12/20	24/12/20	8d	8
10	Complete overall project timeline & work plan	Adrian	08/01/21	13/01/21	4d	
11	Develop Initial functional specification	Adrian + Luke	07/01/21	18/01/21	8d	
12	Final Documentation	Adrian + Luke	21/01/21	13/04/21	58d	
13	Develop Technical Prototype	Adrian + Luke	21/01/21	30/03/21	48d	
14	Analysis of technology	Adrian	21/01/21	25/01/21	3d	
15	Requirements gathering	Luke	21/01/21	27/01/21	5d	
16	Design MVP	Adrian + Luke	26/01/21	05/02/21	9d	14
17	Devlop MVP UI	Adrian + Luke	08/02/21	30/03/21	36d	16
18	Frontend development	Luke	08/02/21	30/03/21	36d	
19	Backend Development	Adrian	08/02/21	30/03/21	36d	
20	Business Case Documentation	Adrian + Luke	28/01/21	13/04/21	53d	
21	Revise Business Model and case	Adrian + Luke	28/01/21	02/02/21	4d	
22	Update and Restructure BMC + VPC	Adrian + Luke	28/01/21	02/02/21	4d	
23	Gather and anylise background research	Adrian + Luke	03/02/21	02/03/21	20d	
24	Discover technical challenges of bringing it to market	Luke	03/02/21	09/02/21	5d	22
25	Analyse data and develop data graphs	Adrian	10/02/21	16/02/21	5d	24
26	Develop Financial plans	Adrian + Luke	17/02/21	25/02/21	7d	25
27	Organisation Summary	Adrian + Luke	26/02/21	02/03/21	3d	26
28	Revised software specifications	Adrian + Luke	10/03/21	24/03/21	10d	
29	Devlop Process flows + UML Diagrams	Luke	10/03/21	15/03/21	4d	
30	Software Architecture Diagrams	Adrian	10/03/21	15/03/21	4d	
31	Develop Zackman framework	Adrian + Luke	16/03/21	24/03/21	6d	30
32	Deploy MVP	Adrian + Luke	31/03/21	06/04/21	5d	17
33	Test MVP	Adrian + Luke	31/03/21	13/04/21	10d	17
34	MVP Demo and final Pitch	Adrian + Luke	19/04/21	03/05/21	11d	
35	Devlop MVP demo Structure	Adrian	19/04/21	21/04/21	3d	
36	Create Pitch Presentation	Luke	22/04/21	26/04/21	3d	35
37	Pitch Project MVP	Adrian + Luke	03/05/21	03/05/21	1d	

In the task list's we have broken down each deliverable into their key components which are needed to complete the project. They have all been given an estimation of duration which in turns lets us know when a task needs to be completed in order to keep on schedule.

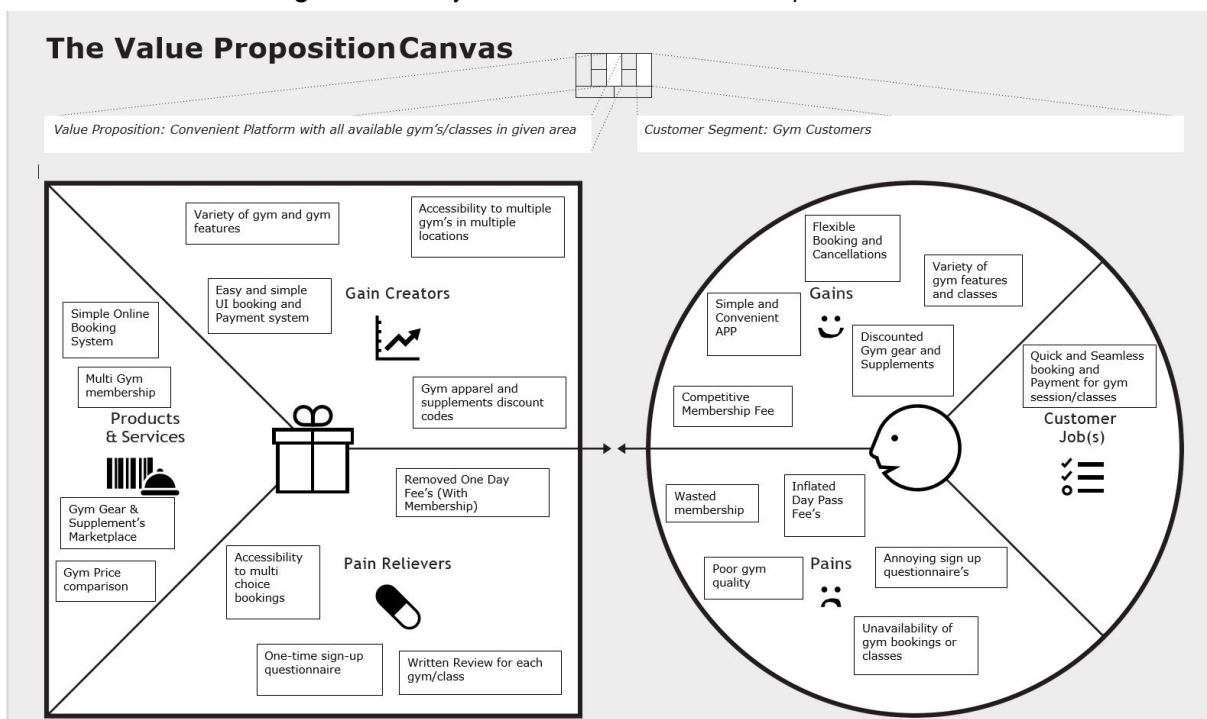


8. Appendices:

- Figure 2.3.1 Business Owner/Instructor Value Proposition canvas



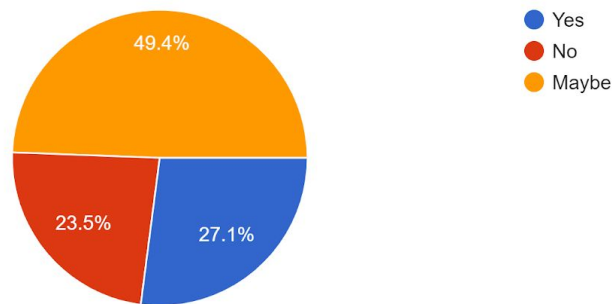
- Figure 2.3.2 Gym/Fitness Customer Value Proposition canvas



- Figure 2.4.1 Do you want to try a new gym

Do you want to try a new gym

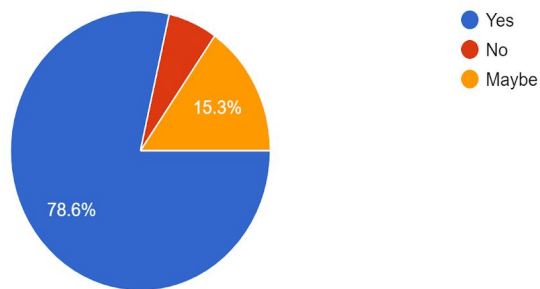
85 responses



- Figure 2.4.2 Would you try a new gym if there was no extra cost on your membership

Would you try new gym's if there was no extra cost on your membership

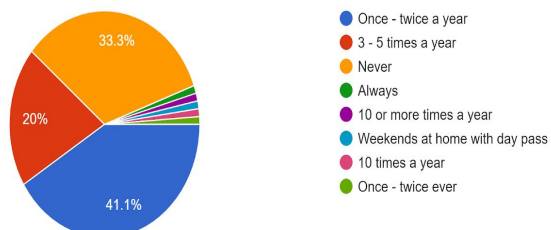
98 responses



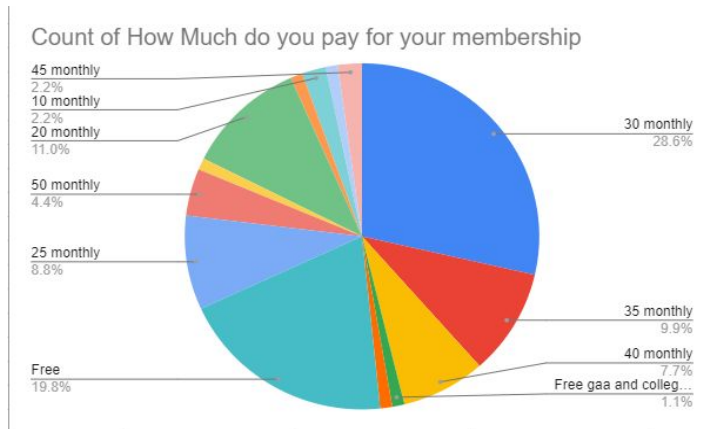
- Figure 2.5.1 How often do you visit a gym without membership

How often have you visited a gym without membership

90 responses

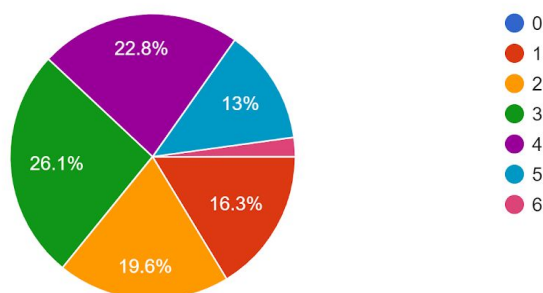


- Figure 2.5.2 How Much do you pay for your membership



- Figure 2.5.3 How many times a week do you go to the gym.

How times a week do you go to the gym
92 responses



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