

T LEVEL

*Technical Qualification in
Digital Production, Design
and Development*

Guide Standard Exemplification Material

Occupational Specialism:

Digital Production, Design and Development

DISTINCTION

Version 1.0

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Digital Production, Design and Development: DISTINCTION

Introduction

The exemplar materials within this document relate to the Digital Production Design and Development Occupational Specialism and have been created using the approved Specimen Assessment Material (SAM). These exemplification materials are designed to give Providers and students an indication of the knowledge, skills, and understanding that attest to a threshold Distinction grade. Each task within the GSEM shows the students work at that level for that task at the threshold of that grade.

The Guide Standard Exemplification Material is split into two sections: Exemplar material, the exemplars provided are representative of the tasks in the SAM. It is important to note that in live assessments a student's performance is very likely to exhibit a spikey profile and the standard of their performance will vary across the tasks, unlike this exemplar material. The overall grade will be based on an aggregated mark for all tasks.

Examiner commentary includes detailed comments to demonstrate how the exemplar material attests to the minimum standard of Pass for the Occupational Specialism. This may include commentary on improvements in the work to obtain higher marks/grades.

Providers can compare the exemplar material against the mark scheme within the SAM, to give guidance on the standard of knowledge, skills and understanding that need to be met for Pass.

Task 1 Analysing the problem and design a solution

Activity A(i)

Planning and system requirements

Minimum specification required for downloading the ToKa Fitness Website.

System requirements

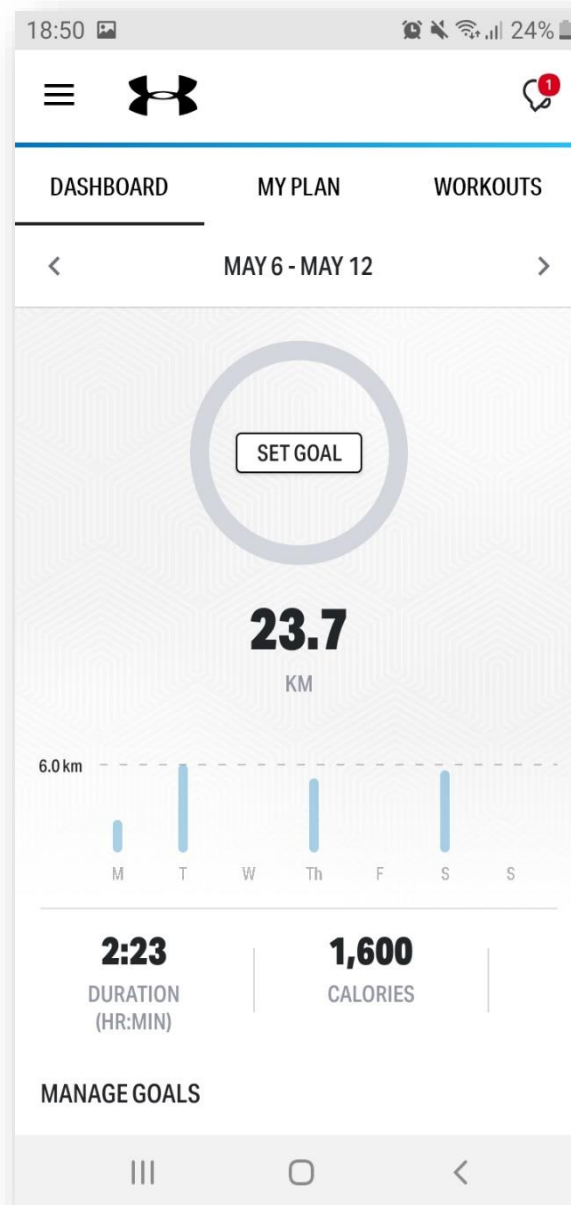
- Processor: 1 gigahertz (GHz) or faster processor or SoC.
- RAM: 1 gigabyte (GB) for 32-bit or 2 GB for 64-bit.
- Hard disk space: 16 GB for 32-bit OS 20 GB for 64-bit OS.
- Graphics card: DirectX 9 or later with WDDM 1.0 driver.
- Display: 800x600

Mobile device

- 1.3GHz dual-core processor.
- 1GB of RAM.
- iOS 6.1.4
- 1,440mAh battery

Research

There are many pre-existing websites and apps which are designed to track cardio only – UA's MapMyRun being one of the most popular, followed by RunKeeper, Strava. MapMyRun tracks your workout in real time where the user just presses start/pause/stop and then completes their workouts with the app running. This then uses location software to track your running route and therefore your speed and distance, which can be used to calculate more complicated averages over each kilometre and the entire workout. However, as this is in real-time, my personal experience is that the location services used by MapMyRun sometimes fail, especially if power saving modes are on. This is very frustrating for users who have finished their workout, only to discover that none or only some or inaccurate statistics have been recorded. Strava works similarly but is intended for cyclists. These are limited to either running or cycling only, so do not provide the facilities for users to log all types of workouts they complete



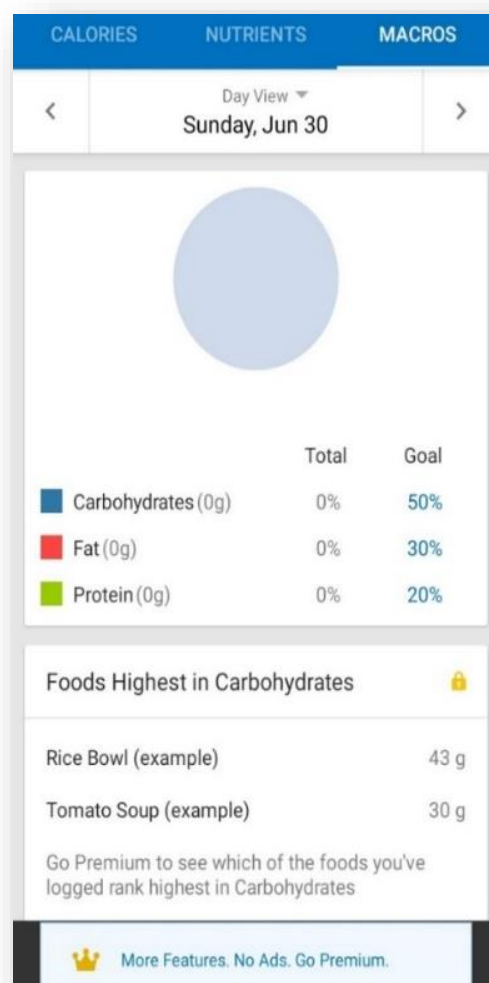
or allow users to see progress comparisons between cardio improvements and strength improvements. The client would like it to be convenient for users to track all types of workout in one place – it's a hassle to track different things in different places, often causing people to resort to non-technological solutions such as writing things down in a notebook. However, they do provide useful features, as the focus on cardio tracking allows them to calculate stats on each workout such as average pace, pace per kilometre and combine stats from workouts showing kilometres per week and potentially demonstrate progress in distance and speed over time. This statistical analysis is important to the clients as it provides useful information for the user to continue to make progress with an understanding of what has worked in the past.

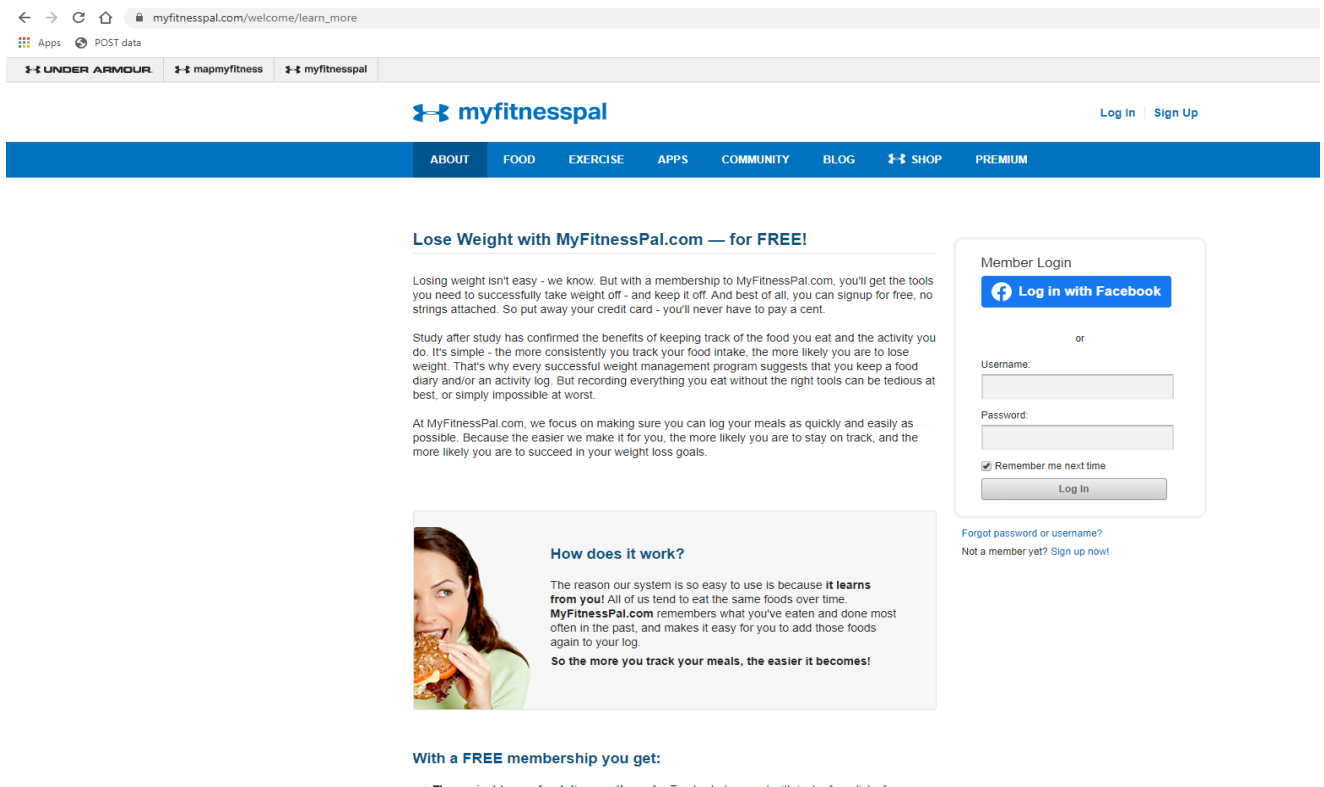
Other pre-existing fitness application include which are dedicated to fitness in general – UA's MyFitnessPal for example allows users to log their food intake as well as a range of predetermined sports, and calculates their overall calorie needs, intake and expenditure, as well as providing guidance on macros and showing complex statistics on your eating habits. However, it has no facility for users to create workouts based on

strength exercises or even just track the exercise itself, as the application is focused on calorie usage. However, it is a very popular app with a very easy to use UI, depicting each day on one screen and allowing the user to flick between, so I would like to take guidance from its interface as I have found it to be the easiest to use. Most of these general fitness application also have premium features only accessible to those who pay, usually the features which allow users to customise their experience more. MyFitnessPal also interfaces with many applications such as the preinstalled Samsung Health, other UA apps such as MapMyRun or MapMyRide, and wearable technology such as heart-rate monitors and shoes with GPS or accelerometers inside.

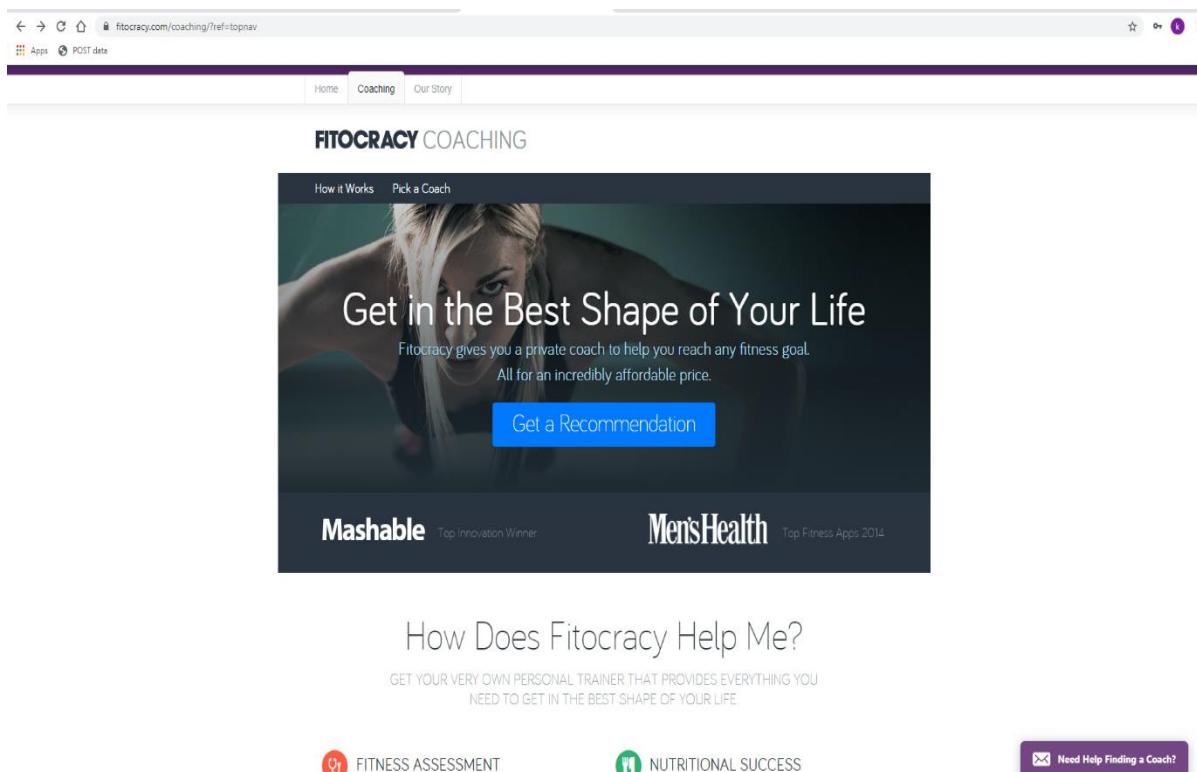
These are MyFitnessPal – the first gives an example of how a logbook could be created, with one day on each page. However, as workouts tend to be a few times a week as opposed to daily, the UI will be designed with more of an emphasis on the long-term view e.g. per week or per month as opposed to daily statistics. The second screenshot shows how MyFitnessPal uses the data input by the user to show them their habits. This screen gives a pie chart showing how much of your daily calories is used in each meal, with percentages and total calories shown in the key below.

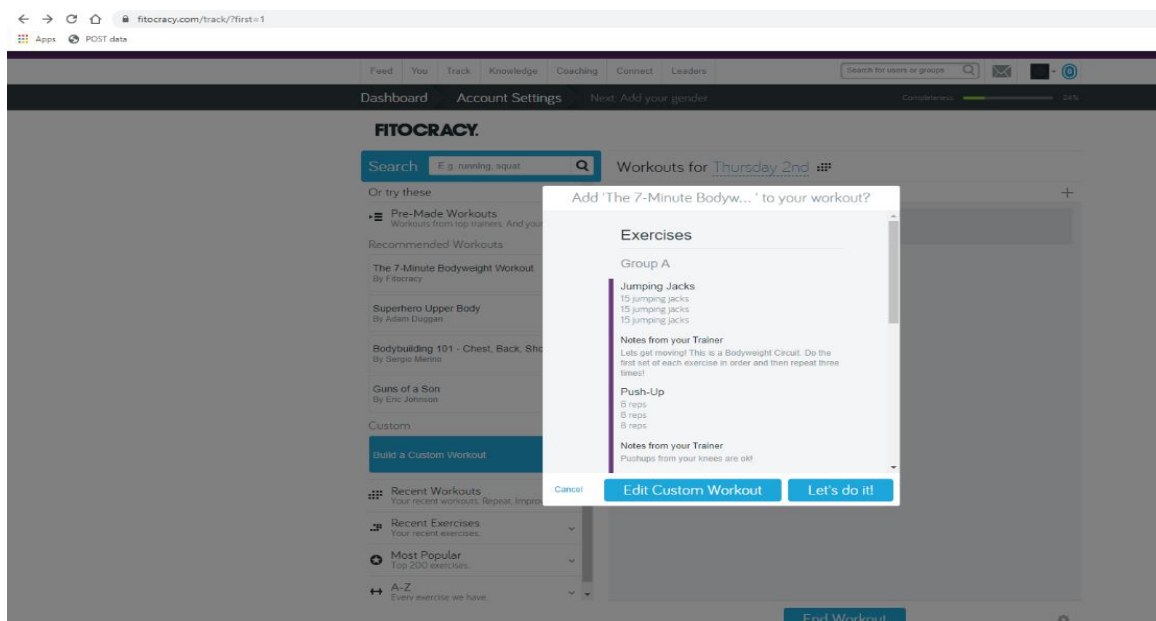
Other general fitness apps include ones which come preinstalled – Samsung Health, GoogleFit, and Health (for IOS) are the most common. As these are built and maintained by the manufacturers, they have little to no problems with them and have well-designed interfaces with lots of customer support. However, one of these apps is preinstalled on almost every mobile phone which is sold, meaning the app must be standard for millions of customs and therefore only provides very basic functions such as step/kilometres per day counters, and weight trackers. Some of these provide more features such as Google Fit's automatic activity log, but in general, as these must be applicable to millions of customs, the features are very limited.





FITOCRACY COACHING





This website was particularly impressive, you can sign up for free, and it provides you with work out programs and personal trainer you can select depending on what your goals are. Found it easy to navigate, you can also view other member's progress and what problems they have encountered on a live feed. Once you have selected you to work out session, you can then log your progress as shown below. I found this to be very valuable

Web Usability

Usability will be based on research done by Nielsen (2016), who specified 5 components which can be used to measure the success of the website.

- **Learnability:** How easy is it for the user to accomplish basic tests first time they encounter the design.
- **Efficiently:** Once the user has learned the design how quickly can they perform tasks?
- **Memorability:** When the user returns to the design after a period of not using it how easy is it to re-establish proficiency.
- **Errors:** How many errors does the user make, how severe are these errors and how quickly the user recovers from them.
- **Satisfaction:** How pleasant is it to use the design.

Using these elements, the website usability will be seriously enhanced, and therefore the elements will be embedded in the development process.

Homepages are the most valuable real estate in the world (Nielsen 2016). A homepage is fundamental to the success of the organisation, as this is the portal into the organisation. For example, you wouldn't go into the restaurant if dirty dishes were left

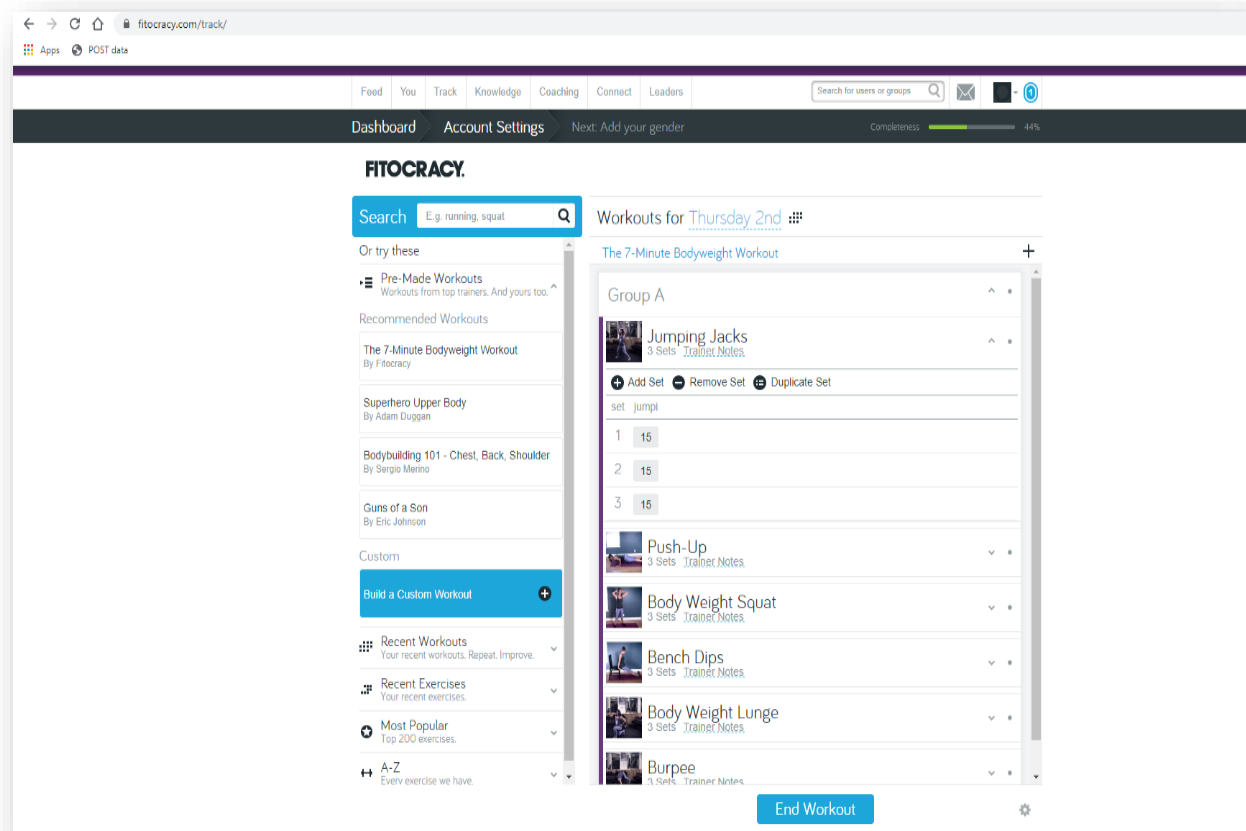
on the table, and the floor was dirty, no matter how nice it looked from the outside. Derek Powazek (2006) believes that the number one job is to ensure the homepage achieves its goal by answering “what is this place”. Powazek believes that if the visitor is unfamiliar with the site and you haven’t done a good job of answering that question the user will feel dumb, leave and never come back.

The page design is vitally important to ensure that pages are visible using any current browser technology. Most users are looking at a single page at one time. Some of the key issues that will impact on the web usability is ensuring that the structure of the page can properly help with the page identity. Important features to consider are page title, subheading, and areas sectioned off so that each component is easily identified but still within the context of the website.

Navigation is one of the hardest elements of the page and site development, this is partly because it is very subjective as everyone has their own opinion on how it should work. This is a difficult issue to solve, but it is hugely important from a usability perspective. If the navigation isn’t doing what it should, we risk losing visitors. A navigation system should work easily and allow the user to flow from action to action and from place to place. For example, on the homepage it is important to avoid scrolling from left to right, as scrolling can cause accessibility problems and can be difficult for users with motor skill impairment, low literacy users and elderly users who often have trouble getting to the right spot in scrolling menus.

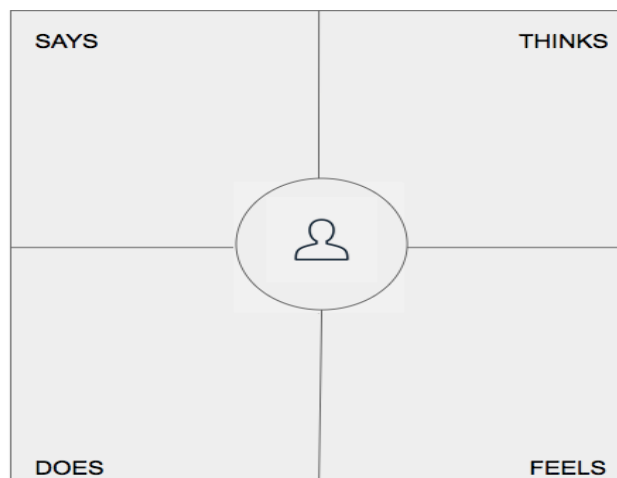
Another important challenge is for the site to cater for repeat visitors who already know what they are doing, as well as catering for new visitors. Powazek (2006) suggests that one technique that conquers this is to make one area of the page dynamic. Once we have catered for new people and repeat visitors it is important that we then ensure that the site remains impressive with something attractive for both new and repeat visitors. An idea to cater for this is to add a forum in. It is worth noting that, according to Powazek, too many sites fail before achieving these first two fundamental goals.

Content within the page is also important. However, users look at headlines before deciding if the content is likely to be of interest to them. They will scan areas of the page for ideas that indicate where to go (Nielsen 2000). With this in mind, both headlines and content are pivotal to website success, and having the ability to understand how web user's access user content is very important but according to Nielsen is easily underestimated. It is important to remember that 79% of web users scan rather than read, which may be due to time constraints, to tiredness as eyes are



25% slower than reading on paper, and to the nature of user driven medium where the user feels the need to click on to new things.

Empathy Map



Empathy mapping was an efficient tool used to understand user behaviours, but also help visually to communicate the findings.

When conducting user research, we learnt a lot about the users—through what they say and do, as well as through more subtle clues like body language and facial expressions. Using an empathy map to help visualise all these findings; it presented the data gathered about your users during the research phase in a condensed, easily digestible format.

The information gathered from interviews, product reviews, surveys, and then sorting it into the four sections of the map. So research conducted looked at the following areas;

- Who is the ideal customer?
- What are the current behaviour patterns of my users?
- What are the needs and goals the users?
- What issues and pain-points do they currently face within the given context

The results will be used to formulate the design in task 2.

Activity A (ii)

Description of the proposed system

We are all on a fitness journey in one way or another. With life's hectic schedule, it's easy to lose track of where you are and where you want to be regarding your fitness. No matter whether you are trying to lose weight, put on mass, or maintain where you are, tracking fitness progress is an essential piece of your ongoing success. I have been asked by the owner of ToKa Fitness to develop a digital system that will:

- provide information about fitness training
- provide information on healthy living to help customers improve their own health and fitness
- provide access to digital content to support customers with their training
- provide access digital content on healthy lifestyle
- encourage existing customers who have access to digital devices to use more of the services provided by ToKa Fitness

ToKa fitness would like to help its customer track every single workout, all gains, and all food consumed in their fitness journey. These are some of the reasons mentioned during the interviews.

- People have extremely busy time schedules and it is hard for them to find slots to fit in running or other forms of workout.
- Lack of motivation is another significant reason.
- Finding people with similar goals is extremely difficult, and mostly people end-up with inactive or over-active company, if found at all, which does not serve as an effective motivation booster. Not being able to track your progress is a huge roadblock in many cases.
- No proper schedule to be followed, sometimes you have the time but don't know how much and how to go about it
- What's more, after a formidable exercise, people would get lazy or boring without any rewards or recognition. Expensive tracking and other health monitoring gadgets leave the interested people with either a big credit or without any equipment
- Complex user interfaces and systems.
- No real data on the systems, only web fed data
- Very little or no data analysis, as to how much calories burnt, how much time to run improve the stamina
- No simple helpful application.

For those who regularly log and track their progress maybe using paper or some way of recording, by using some form of electronic tracking system they would achieve some of the following aims;

- Makes it more likely to reach and surpass their goal.
- Allows them to be more efficient in your time and workouts.
- Lends accountability to themselves and their goals.
- Allows for easier modifications and shows when and where changes need to be made.
- It can be motivating and reinforcing to remind them why you are doing what you are.
- Keeps you committed to their plan.

This project lends itself to a computational approach, partly because of the convenience of tracking details on the website after workout (removing the need to carry pen and paper, and allowing users to track the details immediately, reducing the risk of errors), and partly because a computational solution will allow automatic progress tracking as it can automatically calculate and display your progress from the previous input data. This will make users' gym progress much easier and provide them with details of their progress which would be very difficult and time-consuming to recalculate themselves every week.

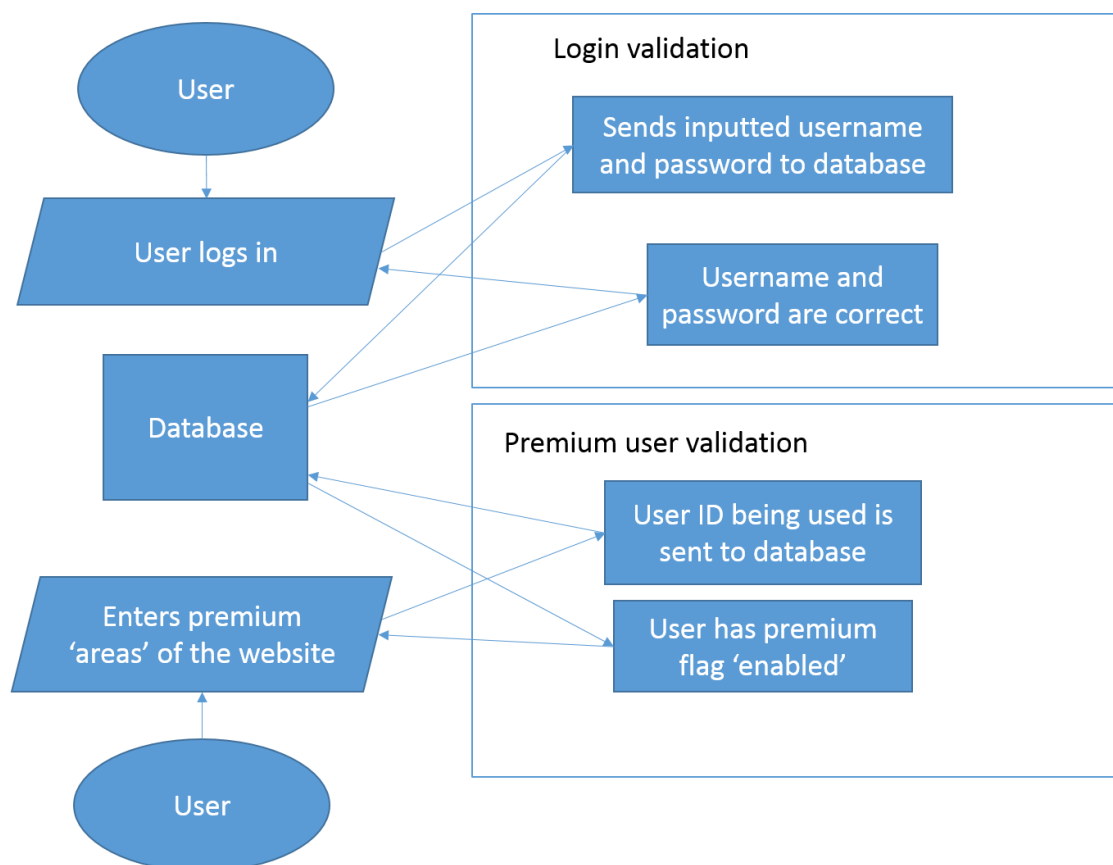
The Key Performance Indicators (KPIs) and user acceptance criteria for the proposed ToKa Fitness offers personal training sessions and advice on fitness training and healthy living to its customers and would like a Website for their specific requirements. ToKa Fitness specific requirements are that the proposed solution:

- Must have a membership system that allows the user to access extra content
- Must allow my client to add new content without touching the code
- Must be compatible with various devices, such as a desktop, a tablet and a smartphone
- Should have different page layouts based on the user (e.g. client can add content, but members can only watch content)
- The layout should be simple and easy to navigate, so, information should be diluted across the page (no clutter to confuse the user), also, text information should be balanced with images and other media
- Could use external services to provide content (e.g. use YouTube for display free videos)
- Could add advertisements to monetise the free content without making the user pay

The system was split into sub systems which interact among each other or with the user. Also provide the aim of each of the many components our system is split into. The interaction between the various components will elaborate in later sections. The system can be seen to have 6 components that work in unison to produce the results which help the user the best results.

- Mobile Interface
- Web Interface
- Database
- Location Data acquisition
- Accelerometer data collection and analysis
- Profile Monitoring

For the purpose of this project we will produce the first prototype which will be the web interface



The Website can be accessed via mobile device or a desktop computer and will have the following functionality.

Non-functional requirement is used to specify the criteria of system operation, which should be contrast to functional requirement that define specific behaviours and function. In order to clarify software quality attributes, we will use the FURPS model. FURPS is acronym for functionality, usability, reliability, performance and supportability, which is founded at Hewlett-Packard and elaborated by Grady and Caswell.

Usability: Usability is used to determine the ease of using and learning for human-made object. First, we use PHP, JavaScript and SQL as our developing platform which is accessible and widely used. Secondly, to make our software and website easy to use, user interface design would play a very important role. User design should make information more accessible for user, such as, a help option can be found at once when the customer encounters some problems, a traceable history for users to review their progress of previous period in their account. Also, inform users of their condition while they are working out real-time updated information.

Reliability is defined by the system's availability and how long it will take to recover from a failure. It is very important to our program, since our system is based on a huge amount of data. If failure occurs, it always accrues loss of data. In order to maintain high reliability, we should try our best to keep a low appearance of error in our system, and also, if there's a failure encountered, the system should have the ability to figure it out, send it to the programmer and then reset giving a reasonable explanation to the users. Performance is closely related to how fast our system can perform. As user is training, they may want to know his calories burnt. So, it requires the system with a high performance of computer's calculation.

Supportability includes a variety of elements, such as maintainability, sustainability, testability and so on. As requirements above, we should make our program easier to use, not only for users, but also for people who want to modify it or add new functionality to it. In order to make sure that code can be fixed and reused easily, we should separate the whole system into several independent functions. As for several independent parts, people can find the main problem more quickly and rewrite the one with a problem without changing others, which will save a lot of time and manual work. Based on the above abstract information a more discrete set of requirements can be tabulated as follows.

Functional requirements:

- send email to a customer when they open a ToKa account
- User form-based authentication
- system for daily calories and movements, sleeping, fitness training and any other activates
- historical data to show trends
- transaction corrections, adjustment and cancellations
- external interface
- customer payment portal – secure considering all regulatory and legal requirements
- blog or forum for group support

Non-functional requirements:

- Performance good response time, throughput and utilization
- Scalability
- Readability so should be able to view on any medium e.g. tablet, mobile phone or Desktop
- Security ensure login details are secure and any important data used by the user or client
- Usability

Link to:

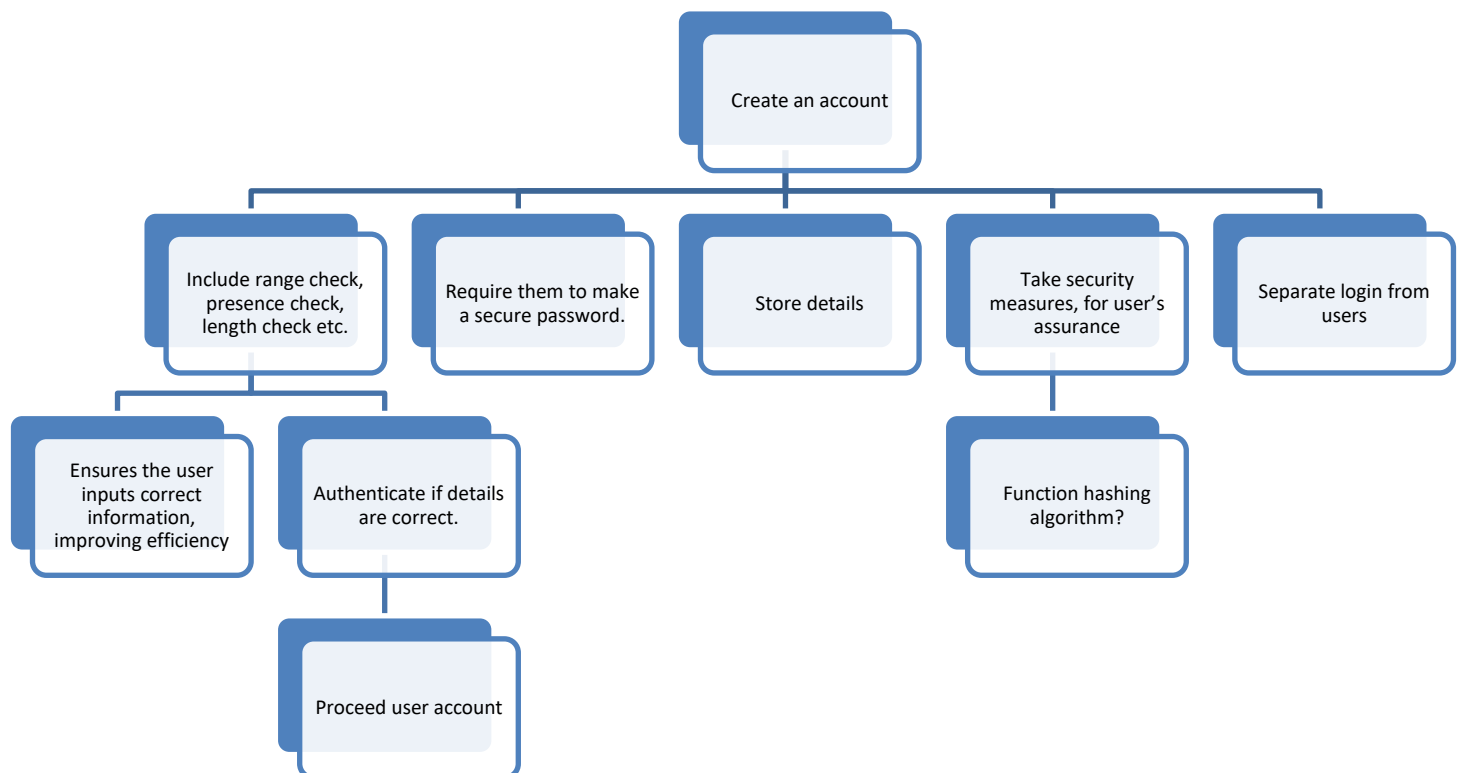
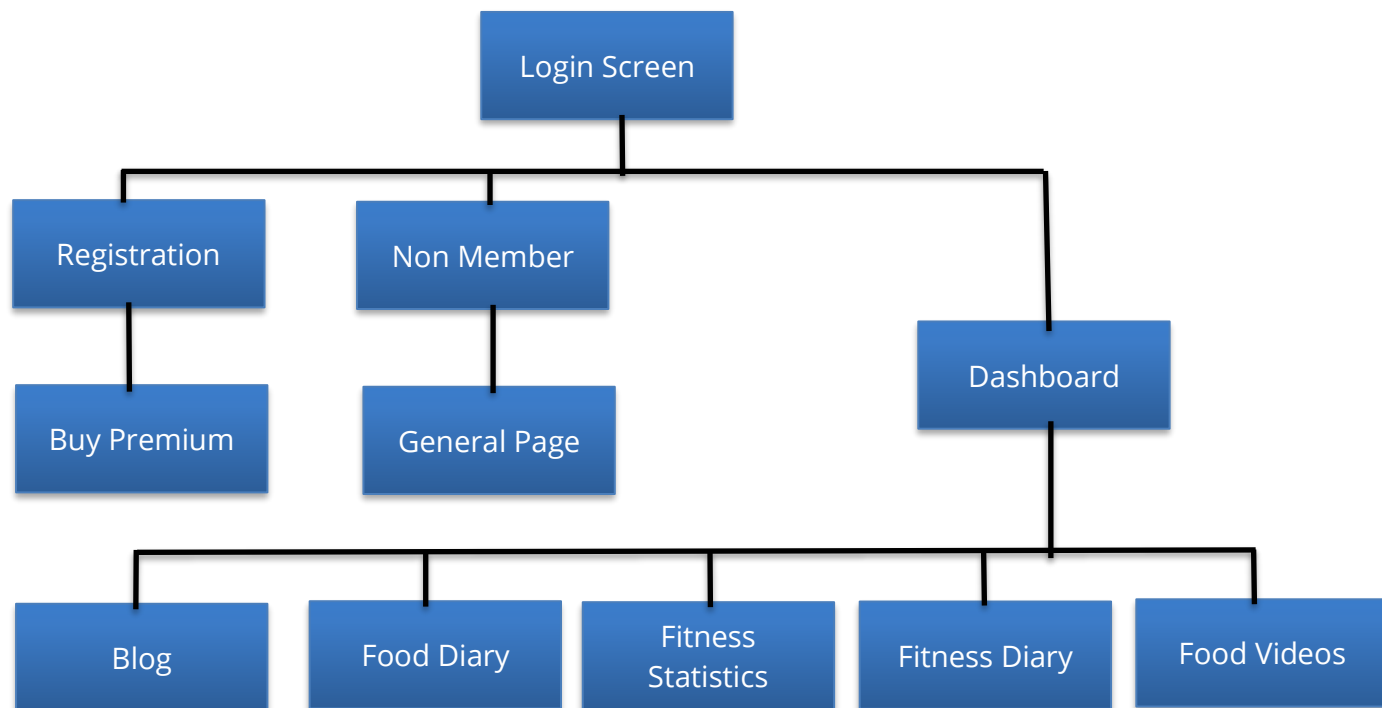
- fitness training videos
- recipe videos
- social media
- chat facility
- blog / forums
- help files on Website use
- Facility to record personal food notes

Accessibility issues to be considered:

- keyboard accessibility
- colour contrast
- copyright of the use of images and videos

- colorblindness and the partially sighted user
- error messages to also have an error icon
- headings
- alternative text
- forms
- downloading materials

Hierarchy Diagram



My proposed solution should provide ToKa Fitness with professional and easy to use system that promotes their business and encourage customers to use it. All customers would have their own account. 'Free member' will have a basic level of accessibility and 'Full member' with a monthly fee for more complex features and functions.

UI/UX

My stakeholders had various requests for the design of the site, including that a minimalist design would be preferred for the website, as well as indicating how many custom options they would like, and how much they can change what is visible on the main screen. There was a unanimous response that a minimalist design would be preferred over a more detailed or perhaps cluttered design. This will be implemented by taking general minimalist principles into the first prototype, such as utilising large amounts of whitespace with relatively small amounts of screen taken up by clickable options, simple flat coloured background and clear labelled options.

The decision on the type of options available is less obvious, as there was no clear consensus from my stakeholders on what would be the most preferable option, as the results were quite evenly split between having all options customisable, having some hidden by default and having most hidden by default. Because of this divide I have chosen to go with most commonly chosen option, as this will hopefully provide the best experience for users, before asking the initial question again to see if any opinions have changed. If they do not then the other options will be used in the next prototypes in order for all solutions to be tested until either a consensus is reached, otherwise a middle ground option will be used for the final release.

Another slightly vaguer set of responses to do with the UI/UX was also a focus from the stakeholders, and included the site having a fast and intuitive design, as well as providing easy access to the features that it offers. While these are harder to measure and implement, as it cannot easily be said that the site definitely offers these things, the features mentioned earlier, as well as including decisions to label fields so that they are more obvious to first time users e.g. labelling buttons 'backup files' or 'Enter Username' will aid in making the site more easy to use. As well as this, using commonly used icons for non-labelled options (such as using a cog to represent the settings for the site) will also help to make the site more intuitive to use. Feedback will be collected after each iteration of prototypes in order to improve these features and create the best possible experience for the stakeholders, and eventually users.

These decisions should allow for a good initial UI and UX, but these features are very liable to change as stakeholder feedback is given during the prototyping. Any suggestions for changes will be logged during the development phase, suggested to the other stakeholders and then finally implemented into the next version.

Free member	Member
<p>Unregistered users should be able to:</p> <ul style="list-style-type: none"> • See information about the system including guidelines and developer information. • View general information available for diet, exercise regimens and blog site. • Only view (not post on) existing forum topics • View the community of existing users • Sign-up for an account 	<p>Registered users should be able to</p> <ul style="list-style-type: none"> • Check in their current body measurements • View and modify their goals • View progress reports – daily and overall • View BMI based on last check in information (add in requirements) • View Current day's progress • Produce log reports • Logout at any stage in the session

Customers would have access to a daily fitness training planner and videos that have been verified by sports professionals and doctors. It is important that the videos and planners are safe to use and provide the correct advice and guidance.

The setup of the customised eating plans will also have to be verified by a nutritionist as they must meet the correct and current nutrition guidance. If the nutrition guidance is incorrect, the member could get very ill as the result of following the customised eating plan, and ToKa Fitness could be sued and get a bad reputation and go out of business.

Members should be able to view different workouts and monitor daily food diary statistics, depending on the customers' membership level. If the customers' experience of using the Website is good, they will continue to use it and promote its use to their friends and on social media.

The Website will have to be secure because of the member's privacy and security of user data to comply with legal requirements such as Data Protection legislation and food and nutrition regulatory guidelines. Customer details must be secured by password protection and clear terms and conditions. The interface should be easy to use and navigate, be accessible across different devices and have accessibility features for users with sight loss. The password will be encrypted to prevent unauthorized access to the database.

Since there's a lot of spam and frauds. The artifact will include email verification service it identifies any issues and possible problems. Built into the validation should be script to prevent wrong format but can't prevent misspelled email address. The service checks your mailing list for spam traps – email addresses which have been created with the intention of capturing senders who aren't following proper practices. Email verification makes sure that these addresses are removed from your mailing lists. Otherwise, if you

send an email to a spam trap, you'll either be asked to remove that address from your list, or you'll be blacklisted.

For example, if someone put in this email address: john@john@dd, this is where email verification would catch it.

This project exhaustively covers many aspects of customers' requirements but there are certain limitations.

These can be summed up by the following points:

1. The ranking system is going to display the top 10 users, not all of them. However, the user can view his personal ranking.
2. Users cannot reply to others in forum. They can only make new comment.
3. Data of calories you burned will not be calculated exactly according to the actual situation, but statistically. Time data is being collected for these parameters and they would be calculated based on algorithms.
4. Accuracy of workout is relative.
5. There is a limitation to the "push factor", the alerts can only motivate and inform users, it is their responsibility to actually achieve targets.
6. Personal weight and body measurements must be updated by user, the system cannot get this information.
7. User data would be available on the community section after permissions and cannot be shared otherwise. Data on the user's personal device would never be shared directly.

User requirements

ToKa Fitness has commissioned my software development company to develop a digital system. ToKa Fitness offers personal training sessions and advice on fitness training and healthy living to its customers and would like a Website for their specific requirements. ToKa Fitness specific requirements are that the proposed solution.

- has free access with some accessibility to services
- customers section for paid content to full services

- accessibility features for users with sight loss
- link to 'social media' features
- ability to view graphs and daily statistics for monitoring
- Visualisation of the data to help user easy understand patterns

The target user group are adults, male and females. Due to legal and ethical nature of Websites, it might be difficult for under-18s to follow the exercise and enter the correct details and follow the food and recipes correctly. To comply with age restrictions and guidelines, clear advice will be given to reduce health issues or injuries.

The Website will be accessed via mobile devices and a computer and compatibility across different devices, Android and iOS. It is important that the Website is easy to use with on screen guidance and prompts so that the user experience is excellent in all areas of the Website to promote company image, for example, using website appropriate high-quality visual assets and content. All areas of the Website will comply with relevant legal regulations and guidelines.

The customer area will be secure accessed via a password and payment made in a secure platform. This will comply with legal requirements. The privacy and security of user data is important for each member to have access to their area via a secure login.

Each customer will be able to customisable workout and eating plans and generate a report on their progress for specific periods, and the level of detail of instructions in a fitness training plan will vary to allow the customer to meet their identified goal.

All links to external sources will take consideration of Copyright and intellectual property and Licensing requirements.

Functional Requirements			
No.	Features	Priority	Justification
1	Users are able to sign up and create profiles with a username and password	HIGH	This will allow many different features to work such as the booking process as this will allow the tutor to know which student has booked the session and will allow the user to access the videos he has paid for on any device as cookies cannot transfer on all the devices the student has.
2	Users are able to log in to their own profile	HIGH	Important that user can view their own profile details
3	Users can view the dashboard	HIGH	This will allow the tutor to upload his timetable so that student can choose which slot they want without waiting for the tutor to confirm if he is free or not.
4	The system should contain information about the calories, weight, carbs intake, fat intake, exercise regime	HIGH	This will ensure that client will trust the organisation and make the website more reliable.
5	Users are able to pay online for membership	MEDIUM	This will allow the payment process to be much easier and less manual this means there can be no altercation in the student not paying as it will all be recorded.

6	The system should be able to send payment confirmation to the user	MEDIUM	This will act as a receipt for the payment to the gym user and client
7	System should have user form authentication	HIGH	This is to ensure that the user does have the email address and verifies the ID
8	System should send a confirmation email once signed up	LOW	This will make that the client has all details for signing up
9	New system should have a blog or forum	MEDIUM	This will allow for user to raise questions and communicate with others gym members
10	historical data to show trends	MEDIUM	Important to generate report that allow the gym user to view historical data and demonstrate progression
12	external interface	HIGH	The gym user should be able to view the website on any device which allow them to see all the relevant information and perform any functionality

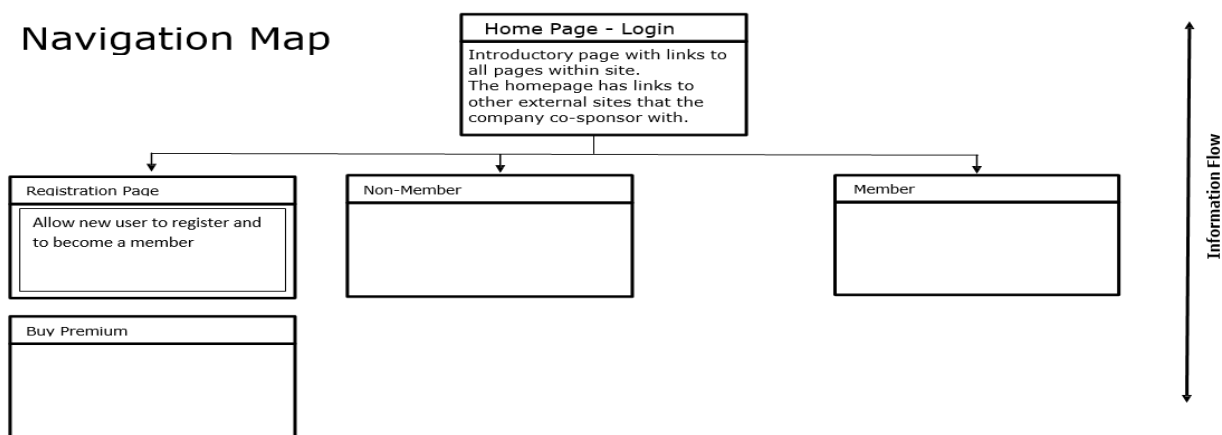
Non-Functional Requirements			
No.	Features	Priority	Justification
1	The system should be reliable.	HIGH	This will mean that it is more trusted which will mean more people will use the service.
2	The system should be accessible by everyone.	HIGH	This will mean that anyone can access the service, which will mean that the service will be advertised to more people.
3	The system should be secure.	HIGH	This will help users trust the service as they will be using their payment information on the website.
4	The system should be available at all times.	HIGH	If this was not the case it would mean less people would buy the service as they cannot access
5	PHP sessions should make the website customised to the user	MEDIUM	This will make it more customised to the user as it could be used for a faster login and it would be more personalised to the user.

Visual/interface designs

Log in page



Navigation Map



Flow Summary

Registration Page	External Links URL's	Information Flow
Summary of objective	Labelled the name Appropriately. Use of Facebook and Google	Two way flow using the hierarchal approach Ability to get home

Image 1

Create an Account!

Input fields: First Name, Last Name, Email, Password, Confirm Password

Buttons: Green, Red, Blue

Page Specification

Interface

- Text Only- labels
- Global Hyperlinks – Google and Facebook for sign in
- Colour and typography: use company branding
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas
- Image Size
- Text boxes:
 - First Name
 - Last Name
 - Email
 - Password
 - Confirm Password
- Buttons:
 - Login
 - Google
 - Facebook

Dashboard

Buy Premium

Billing Address

Full Name

Email

Address

City

Payment

Acceptable Cards

Credit Card Number

Expiry Month

Security Number

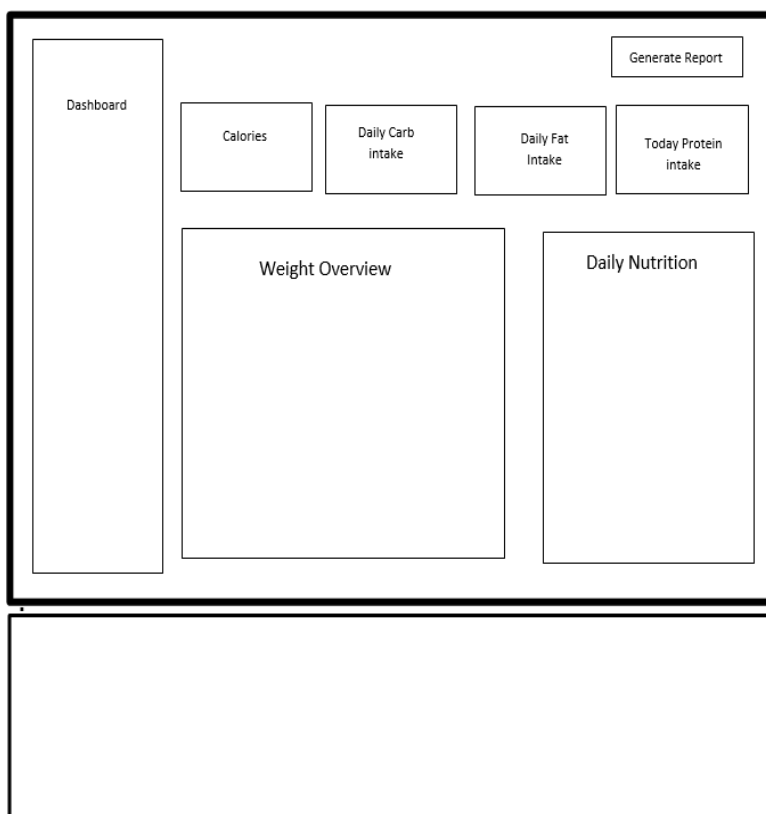
Page Specification

Interface

- Text Only- labels
- Global Hyperlinks – Dashboard
- Colour and typography: use company branding
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas: None
- Form:
 - Text area 1
 - Text area 2
 - Popular Post



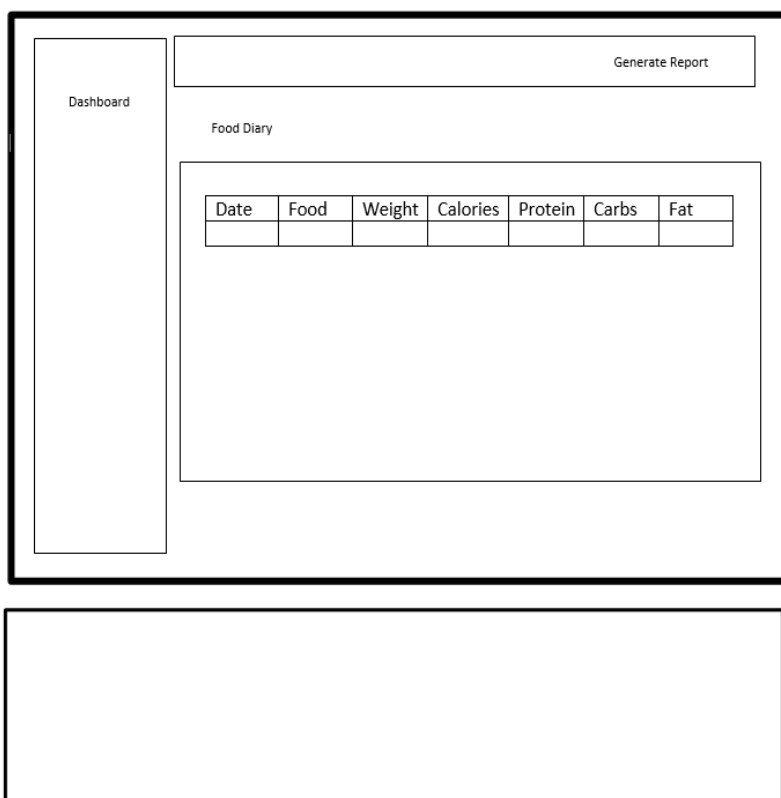
Page Specification

Interface

- Text Only- labels
- Global Hyperlinks –Dashboard
- Colour and typography: use company branding
 - Font type
 - Font colour
 - Background

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas
- Image Size: considered
- Bar Graphs
 - Calories
 - Carb
 - Fat
 - Protein
- Weight Overview
 - Y = Weight
 - X = Months



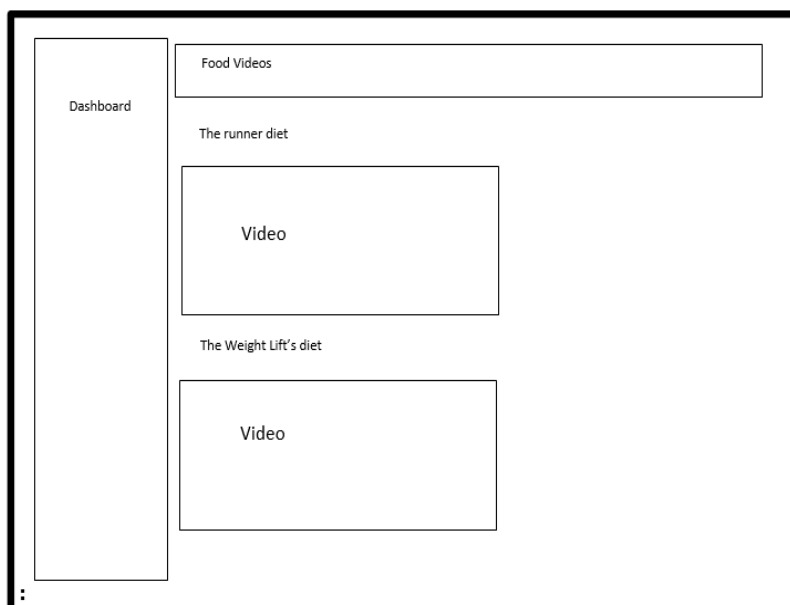
Page Specification

Interface

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- Colour and typography: use company branding
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas: None
- Table: history
 - Date
 - Food intake
 - Weight(g)
 - Calories
 - Protein(g)
 - Carbs(g)
 - Fat(g)



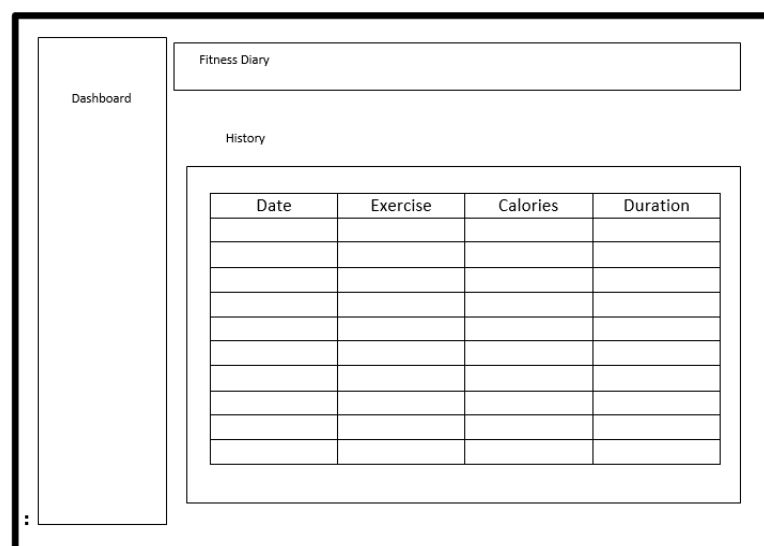
Page Specification

Interface

- Text Only- labels
- Global Hyperlinks – Dashboard
- Colour and typography: use company branding
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas: None
- Multimedia:
 - Video 1
 - Video 2



Page Specification

Interface

- Text Only- labels
- Global Hyperlinks – Dashboard
- Colour and typography: use company branding:
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas: None
- Tabular Data
 - Date
 - Exercise
 - Calories
 - Duration



Exercise Data:

Dashboard

Add Exercise data

Exercise

☐ Running
 ☐ Walking
 ☐ Swimming
 ☐ Other

Duration (minutes)

Drop Down

Page Specification

Interface

- Text Only- labels
- Global Hyperlinks – Tracker diet
- Colour and typography: use company branding
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas: None
- Drop down:
 - Profile
 - Settings
 - Activity Log
 - Logout
- Add Exercise
 - Labels: running, walking, Swimming, other
 - Radio Button
 - Text Box
 - Button - submit

Add food Data:

Food intake

Dashboard

Add Exercise

Food:

Amount (grams)

Drop Down

Page Specification

Interface

- Text Only- labels
- Global Hyperlinks – Tracker diet
- Colour and typography: use company branding
 - Font type: TBC
 - Font colour: Grey
 - Background: White & Green

Page Elements

- Use crumb trails
- Page dimension: considered
- Textual Areas: None
- Drop down:
 - Profile
 - Settings
 - Activity Log
 - Logout
- Add Exercise
 - Labels: food, amount
 - Text boxes

Front-End Needs:

- Different icons which are easy for the user to use
- Attractive
- Clear link to the backend (not for the user but for management to ensure that they can receive data that user's input)

Back-End Needs:

- Data storage
- Reading/writing to and from this.
Stored in an efficient way.
- Security (hashing, encryption)
- Link to the frontend.

Security and data analysis

System security will be an important issue for the management, just as it will be for the customers. Overall some of the management's needs do overlap with other stakeholders although the management will be the ones who have to face the consequences of any breaches of the system. This means that it's their responsibility to ensure that the system they're providing to their customers is safe to use. Organising the data will make benefit the management when it comes to producing reports and carrying out queries. This is important because during periods where there are lots of customers, the management will be able to quickly carry out queries and find out the information they need. The data analysis section will make up parts of the report as well as a different section of the solution. This part is supposed to aid decision making about the whole restring process and it will impact, because it will impact which workout they choose to use. From the management's perspective the reason behind this data analysis is to help them reduce their costs and to improve the overall efficiency of the system.

Algorithms:

```
if(first time entry)
{
    Load registration form
}
else
{
    Res_userID = check whether input userID is unique

    res_pwd    = check whether input password1 and input password2 are the same

    res_email  = check whether input email is of correct format

    res_profile = check whether input profile is not empty

    res_name   = check whether input name field is not empty
```

```
if ( all check results == true)
{
    SQL insert queries

    connect to database

    pass queries to database

        if (any query fails)
            display error msg

    else display registration complete msg
    endif
}

if (res_userID == false)
    display message reselect unique user id
endif

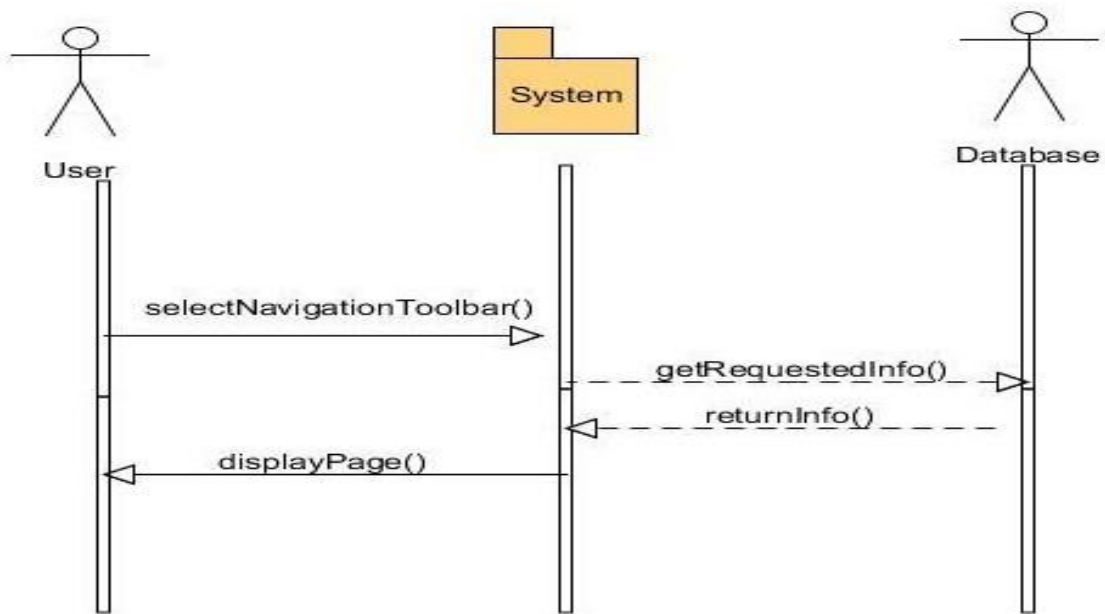
if (res_pwd== false)
    display message retype password
endif

if (res_name== false)
    display message retype name
endif)

if (res_email  == false)
    display message retype a valid email
endif

if (res_profile  == false)
    display profile is empty msg
endif
}
endif
end Registrations module
```

Test case	Path	Variable Value	Expected result
1	1	first time entry == 1	<ul style="list-style-type: none"> - load registration form - exit
2	2	first time entry == 0 && all check results == 1 && any queries == fail	<ul style="list-style-type: none"> - execute node 4 - generate error msg - exit
3	3	first time entry == 0 && results = true && query == true	<ul style="list-style-type: none"> - execute node 4 - display registration complete message - exit
4	4	first time entry = 0 && all check results = 0	- load registration form
5	5	userID == false	- display error msg
6	6	User ID == true	- go on
7	7	Password == false	- display error msg
8	8	Password == true	- go on
9	9	name == false	- display error msg
10	10	name == true	- go on
13	13	Email == false	- display error msg
14	14	Email == true	- go on



Login Screen:

START

```

clear username textbox
clear password textbox
    
```

INPUT Username

INPUT Password

```

count = 3
    
```

WHILE count is not equal to 0

```

print 'the number of attempts left is' count
    IF username = username in vault file
    
```

AND

```

    IF password = password in vault file
        open index
    else print 'username ort password is invalid'
        count = count -1
    
```

REPEAT until no more counts available

```

    message 'please contact administrator'
    
```

SQL statements:

```

SELECT * FROM customer WHERE Username = "username" AND Password =
"password"
    
```

Justification: The start clears the username and password to allow the user to login to the website. As it progresses, the while loop is used to prevent an automated robot from logging into random accounts. If the password and username is correct they are allowed to the main page, if not then the session will time out.

Validating Email:

```
Function ValidateEmail;  
If local length <1 or >64  
    Output Invalid email  
If domain length <1 or > 255  
    Output invalid email  
If character (0) equal to "." Or character (-1) equal to '.'  
    Output invalid email  
If email contains '..'  
    Output invalid email  
If email contain characters other than (A-Z,a-z,0-9) Output invalid email  
Else email is valid  
end function
```

The reason to validate the mail is to ensure that the user inputs the correct format, so that the details are correctly put in. A key will be sent to the email address to validate, that this is there email, so if they put the wrong email address in they can't access it and therefore won't be able to get the passcode.

Validating Password:

```
Function ValidatePassword  
If length greater or equal to 6  
    Output 'password must be over 6 characters'  
If password not equal to (0-9)  
    Output 'password must contain a number'  
If password not equal to (A-Z)  
    Output 'password must contain a capital letter'  
If password not equal to (a-z)  
    Output 'password must contain a lowercase letter'  
If password is not equal to Confirm password  
    Output 'the password entered doesn't match'  
Else password is valid  
End function
```

Validation of the password is to ensure the user creates a password. To make sure the password is sensible and strong is by making sure the password is over 6 character's long. There must be number in the validation as well as a capital and lowercase letter, increasing the strength of the password. The validation also compares the password to the confirmed password to make sure they are the same. This makes sure the user has entered the correct password therefore if the user has made an error typing in the password it won't be loaded into the database incorrectly.

Hashing Password:

```
Alphabet = ['ABCDEFGHIJKLMNOPQRSTUVWXYZ'] //List of characters to replace password with.
Numbers = [0123456789] //List of numbers to replace password with.
CREATE PROCEDURE hashPassword

    WITH CONNECT ('Accounts.db') AS Database //

    CreateAccount () //Calls this function because this is where the password is initially created.

Submit.onclick() //When the create account form (password) is submitted to the

    FOR I in range 0 to len (Password) //Checks length of password, which is retrieved
    from the create account function.

N = 0
WHILE N != len(Password) //Keeps replacing characters until the length of the password is met.

    HashedPassword = Password.ammend (randomchar[alphabet, numbers]) //Replaces characters with
    either letters or numbers.

N = N+1 //Increments n, repeats until length of password has been

    ELSE BREAK //Ends the loop once fully hashed.

    INSERT INTO Accounts

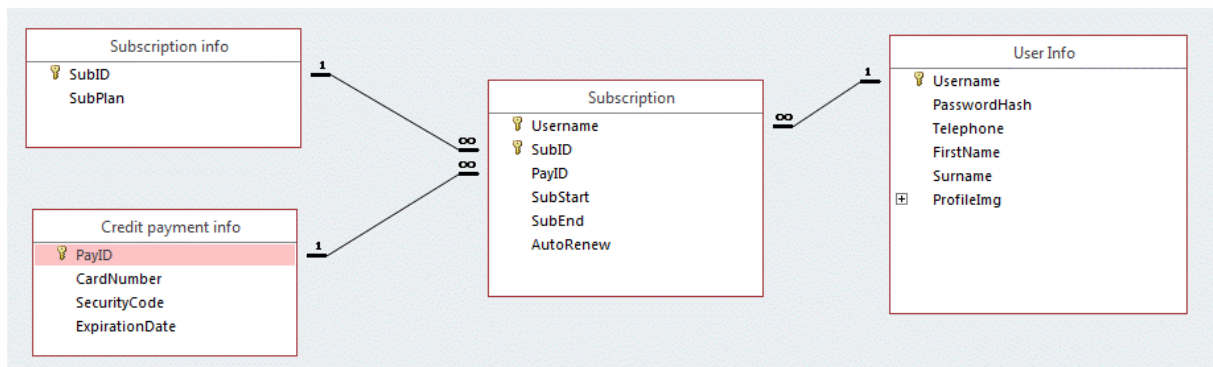
        Values (FirstName, Surname, Mobile, Email, HashedPassword); //Stores
    these values inside the table.
END Procedure


CREATE Procedure loginWithHashedPassword()
Login () //Allows the user to login with their plaintext password.
HashPassword (Password) //Hashes the input in order to see if they match.
```


Data Requirements:


Variable name	Function	Data type	Reason
\$isValid	To determine if email entered by user is valid	Boolean	As email entered is either valid(true) or not valid(false)
\$atIndex	As a form of validation to make sure the email entered has an @ in	String	To locate position of @ sign.
\$domain	To do a length check on the domain of the email.	String	To assign the whole email to a variable
\$local	To assign the part of the email before the @ sign to a variable.	string	To help validate the first part of the email
\$localLen	Counts the number of characters in the local part of the email	string	To validate the length of the \$localLen
\$domainLen	Counts the number of characters in the domain	string	To validate the length of the domain
\$password	Assigning the users	string	To allow for validation

	input for password to a variable.		to the password.
\$cpassword	Assigning the users input for confirm password to a variable	String	To allow for validation of the password.
\$passwordErr	To output a message when validation of password isn't met	string	If there is an error then it outputs a message.
\$confirmpErr	To output a message when confirmed password is check against password	String	To output an error when confirm password doesn't match password
\$nameErr	To check if the field "name" is filled	string	To make sure there is a present value
\$name	Assigns the input to the field "name"	string	To assign a value to the variable name
\$surnameErr	To check if the field "surname" is filled	string	To make sure there is a present value
\$surname	Assigns the input to the field "surname"	string	To assign a value to the variable name
\$data		string	



UserInfo	
Field	Data Type
UsernameID 	int (6)
Surname	varchar (25)
First Name	varchar (20)
Telephone	Varchar(13)
Profileimg	

Subscription	
Field	Data Type
Username	Int(6)
SubID	Int(15)
PayID	Int(15)
SubStart	Date/time
SubEnd	Date/time

CreditPaymentInfo	
Field	Data Type
PayID 	int (10)
CardNumber	Int(16)
SecurityCode	Int(3)
ExpirationDate	Date/time

Approach to testing:

To test my solution, I will be using white box testing (where I test the internal structure of the website) and black box testing (where I only test the inputs and outputs).

Test strategy	White box testing
Purpose	This test strategy is a form of structural testing. The testing is dependent on the code logic, and assesses the program structure rather than the program function. The program will be analysed, and tests will be devised to test every possible pathway at least once. In simple terms this tests that each part of the code itself functions as intended.
Who performs the test	Developer
Test data set	All possible inputs. Outputs to each input will be recorded.
Test criteria	The output should be as intended by the programmer (me) for each input
When to test	White box testing will be included in nearly all testing phases
Estimated time required	Individual inputs can be tested in less than a minute. Depending on stage of development, full white box testing and documentation of results for whole program could be more than 1 hour

Test outcome	Outcome data will be compared to intended outcome for each coding path, the results will be used to guide any alterations and improvements to each code that are required to ensure that each code pathway leads to the required outcome
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Task 2 Developing the System Prototype

From the examination of the sources and assets gathered, I have considered my options.

As the user requirements are clear and, due to legal and ethical implications of using the identified assets, all of the images are to be sourced from free imaging providers or providers that allow use for non-commercial: "License: Non-commercial Use". Some of these providers require you to set up an account to download the images and some ask you to reference the source of the image.

Care was taken when selecting the images to use due to the legal and ethical implications of the assets.


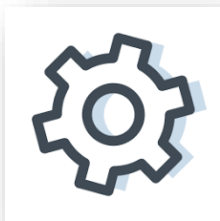

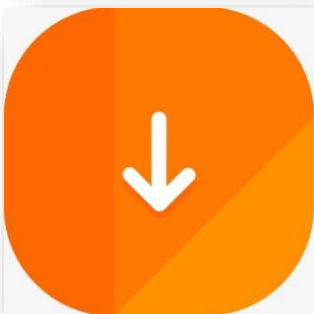
Great care was taken when selecting the external links to the health and fitness and food external links. All of the recipes were from a reputable source and promoted healthy eating and most identified the nutritional value of the meal. They were easy to follow with clear images of the prepared dishes.

The health and exercise video and information links were sponsored medical and personal trainers and supply website help and guidance as the customers will be using these videos unsupervised by health and medical experts. All of the links hosted fitness videos of a very professional quality and level. From the research of possible code snippets, the only code that I am going to modify is "chat room and blog example code" by using bootstrap which is excellent for events and layouts.

Legal and ethical consideration are important during the development of this artefact. The dilemma can be displaying people who may be overweight which reinforces that overweight means unhappy, eating lots of food and no exercise. And while this may be true to some extent, the different ways people view overweight is shocking, and this is most prevalent in the way the media portrays celebrities. Even that thin is therefore healthy. So, it is important that ethical and moral issues are thought of before selecting the images and videos.

There is a close relationship between law and ethics but not everything that is legal is ethical. Frequently law ... attempts only to set the minimum acceptable standard. The aspirations of ethical practice are higher ... It can never be appropriate to defend proposed practice solely on the basis that it is legal

Assets selected and rational:

Image	Source	Rational
	https://www.freepik.com/free-icon/search_788138.htm	Users see this search image more than the other option and it is also uses less colours.
	https://icons8.com/icons/set/settings	Will use the traditional settings icon as all users know what it is.
	https://imgbin.com/png/wfLgfRPc/computer-icons-mobile-phones-png	This is my option for "no access to member's area". Users may find the other option confusing and it has too many colours.
	https://imgbin.com/png/Jm6mwH7T/a-logo-png	Decided to use this icon as it's free for non-commercial use as the other option needs an extended license. It also stands out.
	https://www.flaticon.com/free-icon/facebook-logo-button_69407	Used this social media logo as users will be able to identify it quickly.

	https://www.stickpng.com/img/icons-logos-emojis/tech-companies/whatswebsite-logo	Used this social media logo as users will be able to identify it quickly.
	https://www.stickpng.com/img/icons-logos-emojis/tech-companies/twitter-logo	Used this social media logo as users will be able to identify it quickly.
	https://www.stickpng.com/fr/img/icones-logos-emojis/societes-de-technologie/logo-youtube-play	Used this social media logo as users will be able to identify it quickly.
	https://www.flaticon.com/free-icon/instagram-logo_69366	Used this social media logo as users will be able to identify it quickly.

Contact us example code bootstrap	This is the only code that I am going to modify. I am going to develop my code for the Website to ensure that it efficient and robust.
-----------------------------------	--

Possible

Links to external sites:

https://www.bbcgoodfood.com/recipes/collection/healthy-dinner	BBC good fool link	Decided to link to these external resources, they are all verified by the medical profession and have excellent reviews on social media.
https://lovefoodhatewaste.com/	Love food healthy recipes	
https://www.ketocustomplan.com/	Kenco diet plan	
https://www.foodsavvy.org.uk/	Foodsavvy healthy recipes	
https://www.delish.com/cooking/	healthy recipes	
https://ifoodreal.com/clean-eating-recipes-dinners/	healthy recipes	The recipes featured have an image of the

https://bitesofwellness.com/	healthy recipes	food and clear recipe and methods. Most also have user reviews for each of the recipe. They are reliable sources of information to link to.
https://www.everydayhealth.com/	Health and fitness websites	
https://www.health.com/fitness	Health and fitness websites	
https://www.health.harvard.edu/topics/exercise-and-fitness	Health and fitness websites	
https://www.pinterest.com/reachyourpeak/health-fitness-topics/	Health and fitness websites	

Blogs:

https://www.quora.com/What-are-your-top-5-favorite-health-and-fitness-topics	Fitness blog	Will provide further options for the customers to select their own topics
https://www.wix.com/	Wix blog	These are the top 3 blogs in the sector and have been established for some time and have a good following and lots of posts.
https://bitesofwellness.com/blog/	Bites of Wellness	
https://blog.feedspot.com/uk_fitness_blogs/	Top 10 blogs	

Prototype for the proposed digital system:

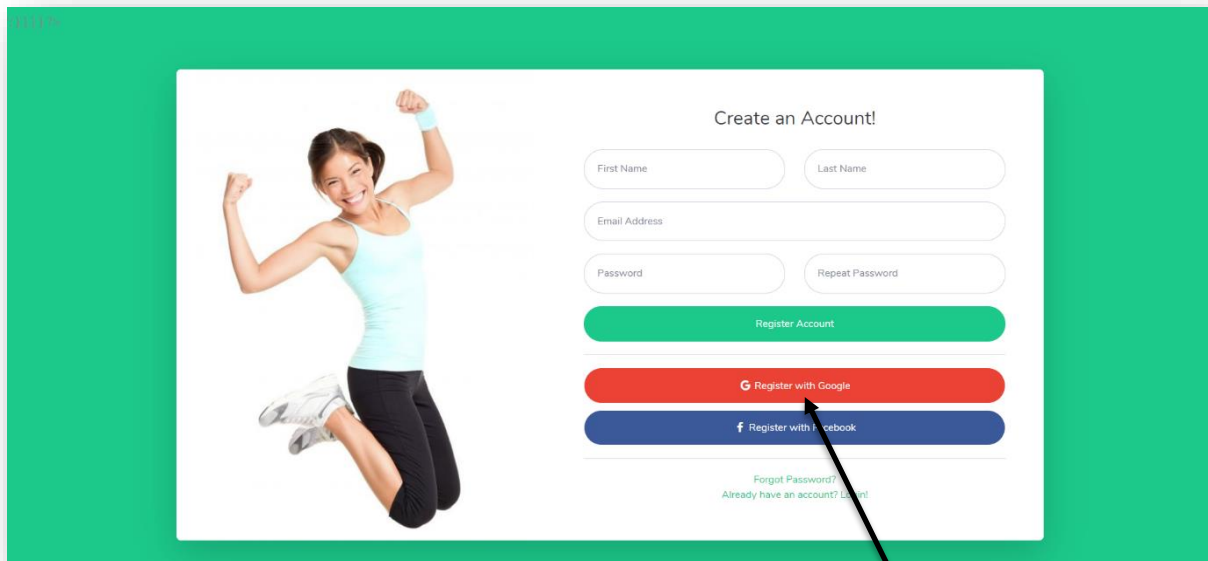
ToKa Fitness system prototype has commissioned my software development company to develop a digital system. ToKa Fitness offers personal training sessions and advice on fitness training and healthy living to its customers and would like a Website for their specific requirements.

ToKa Fitness specific requirements are that the proposed solution.

- has free access with some accessibility to services
- customers section for paid content to full services
- accessibility features for users with sight loss
- link to 'social media' features
- ability to customizable workout and eating plans
- Access to various graphs to view stats on;
 - Calories

- Fat
- Weight
- Food
- Comparisons and logs for day, week and Month

Log in page



001275

Create an Account!

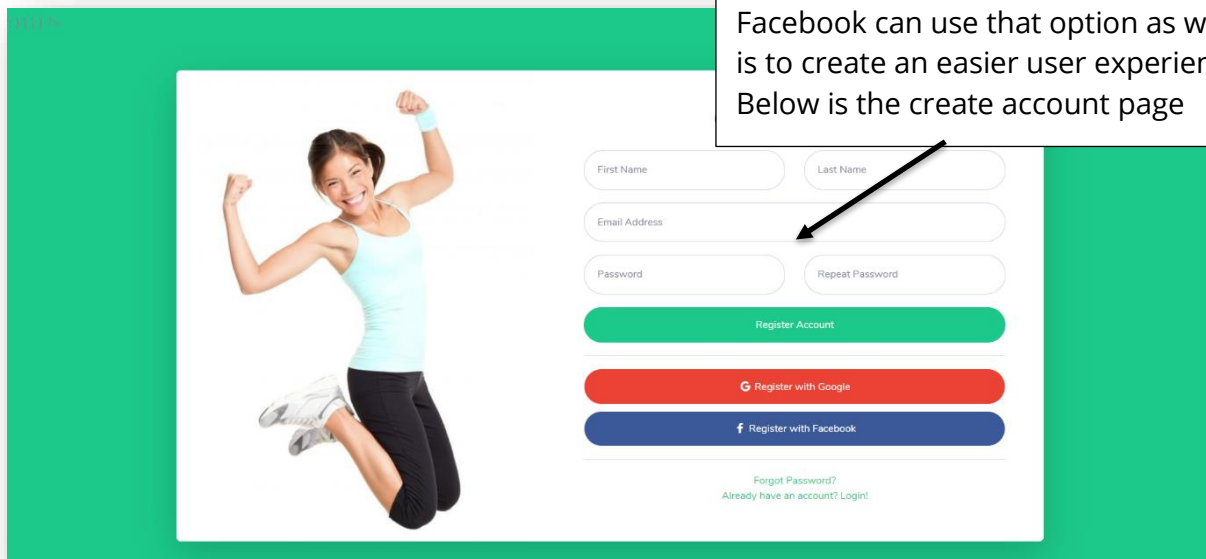
First Name Last Name

Email Address

Password Repeat Password

[Forgot Password?](#)
[Already have an account? Login!](#)

This is the login screen; you can use created username and password or if you originally registered using Google or Facebook can use that option as well. This is to create an easier user experience. Below is the create account page



001275

Create an Account!

First Name Last Name

Email Address

Password Repeat Password

[Forgot Password?](#)
[Already have an account? Login!](#)

TOKA FITNESS

Dashboard

YOUR HEALTH

Fitness

Diet

SOCIAL

Follow us

Blog

Chat

HELP

Training Videos

Food Plan Videos

How to use Toka Fitness

Get Premium

Buy premium

Billing Address

Full Name
John M. Doe

Email
john@example.com

Address
542 W. 15th Street

City
New York

State
NY

Zip
10001

Payment

Accepted Cards
VISA, MASTERCARD, AMERICAN EXPRESS, DISCOVER

Name on Card
John More Doe

Credit card number
1111-2222-3333-4444

Exp Month
September

Exp Year
2018

CVV
352

☒ Shipping address same as billing

Cart

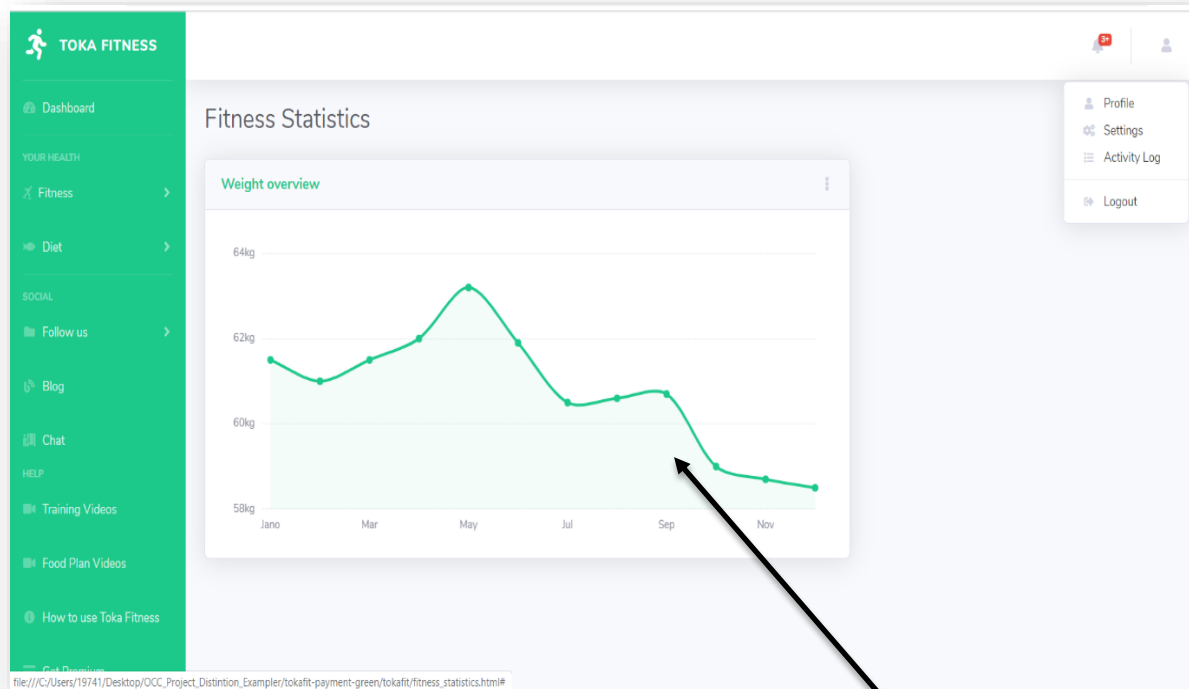
1

Premium £10

Total £10

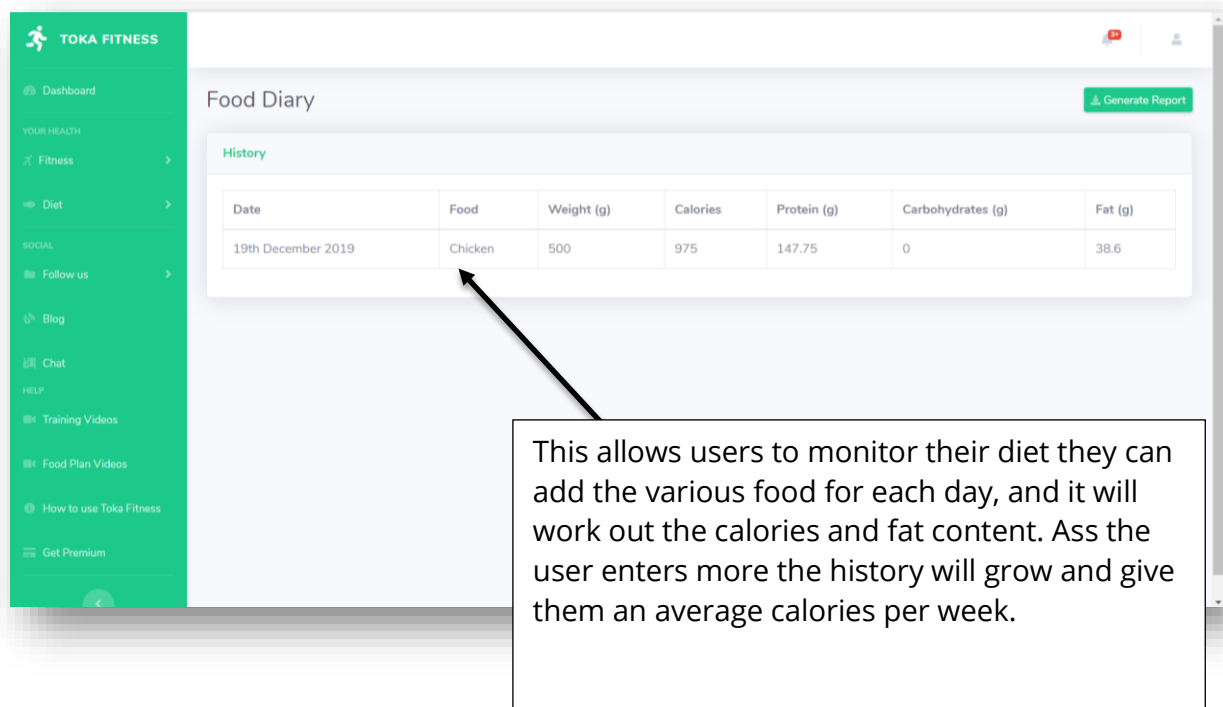
This is the payment page which allows clients to pay for the members sections which gives them access to various extra parts which are not available to standard users

Client information Table



This allows users to view fitness stats to help measure success and to see how there training is progressing.

Food diary is to capture how they monitor the food intakes. Evidence suggest that by viewing what they eat daily will help with keeping their diet in place



TOKA FITNESS

Dashboard
YOUR HEALTH
Fitness
Diet
SOCIAL
Follow us
Blog
Chat
HELP
Training Videos
Food Plan Videos
How to use Toka Fitness
Get Premium

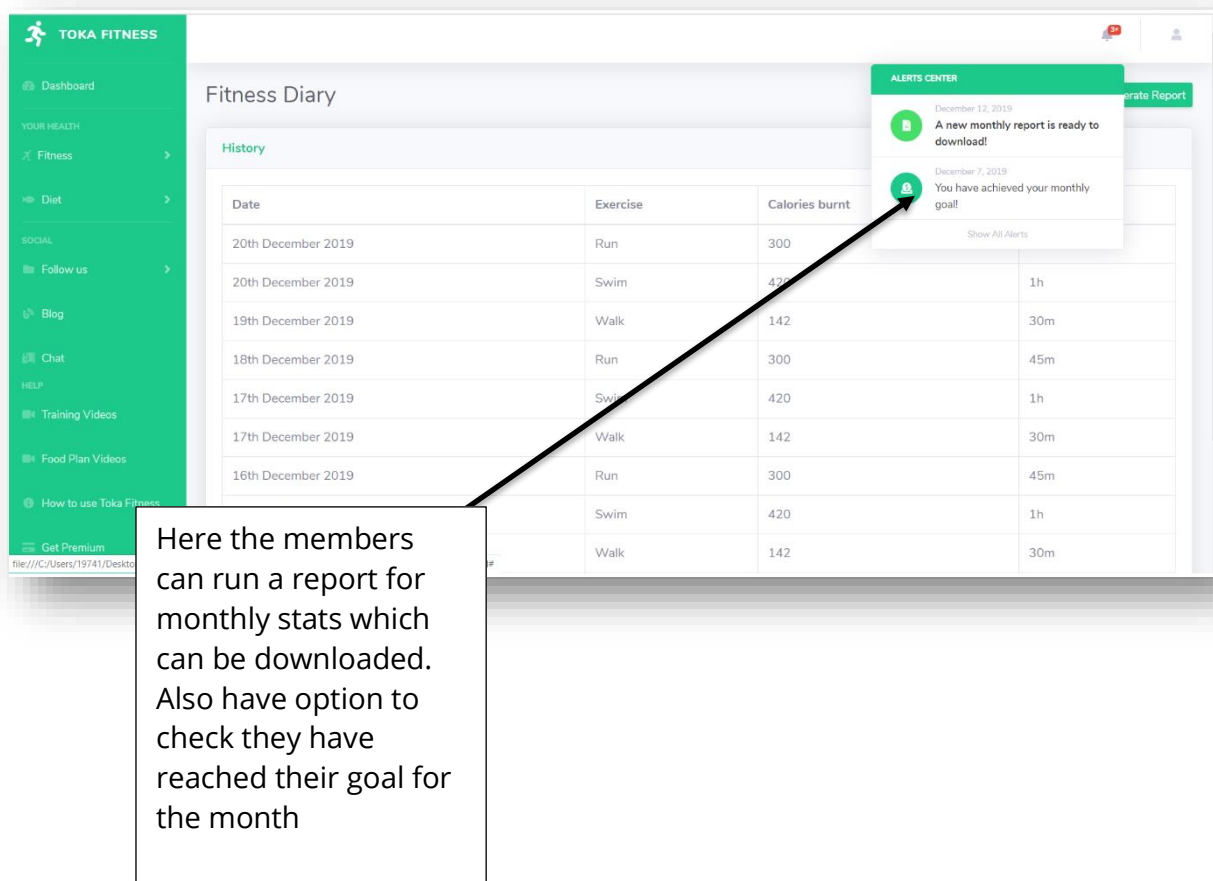
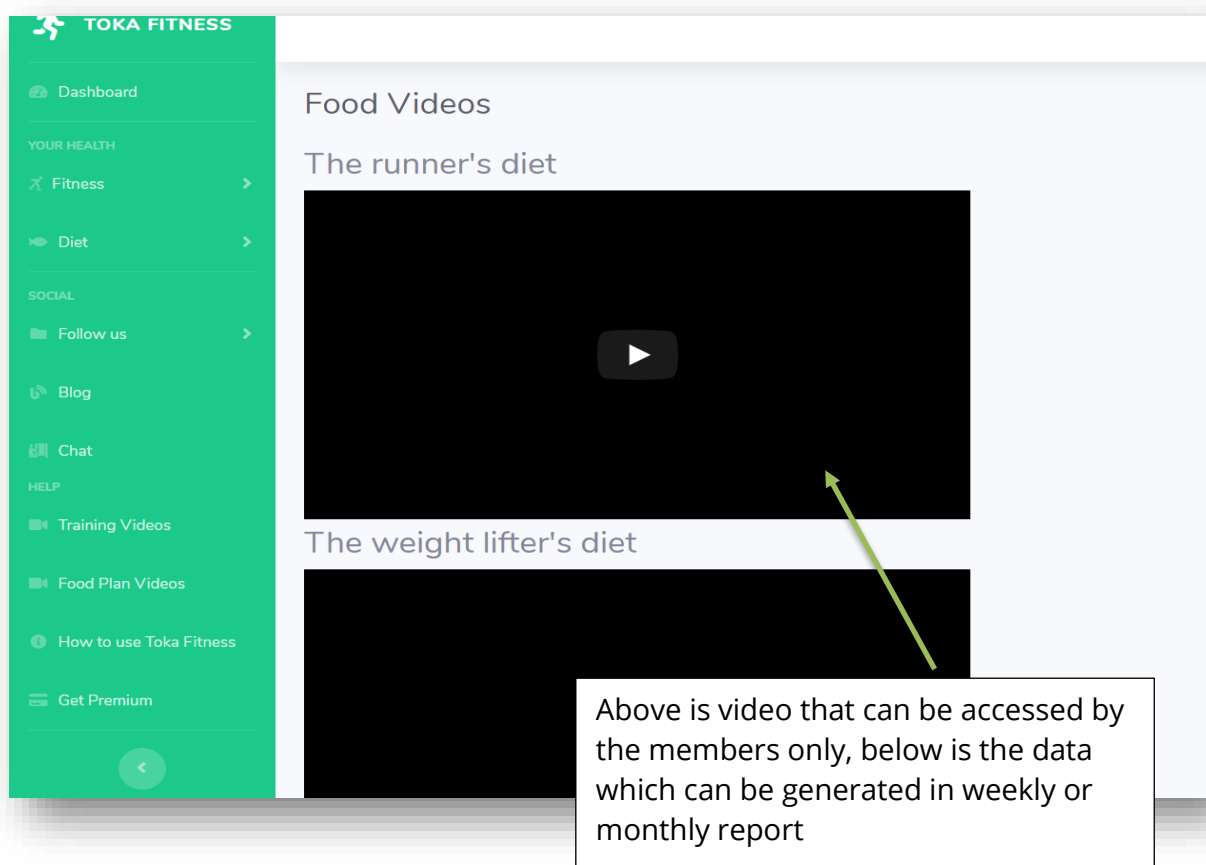
Food Diary

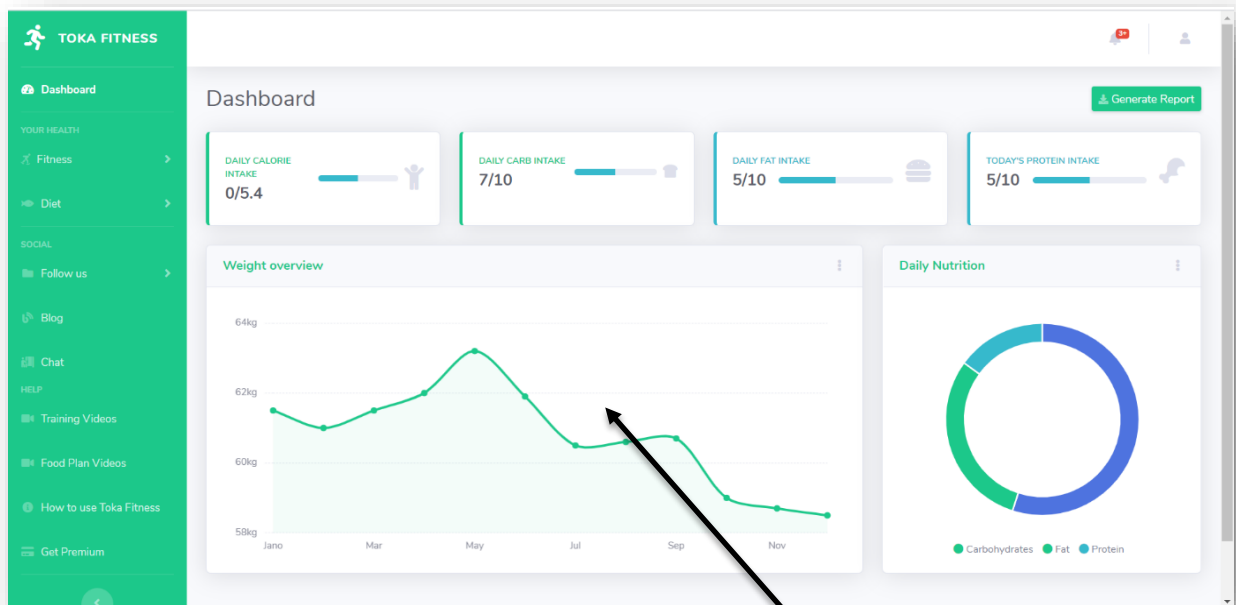
Generate Report

History

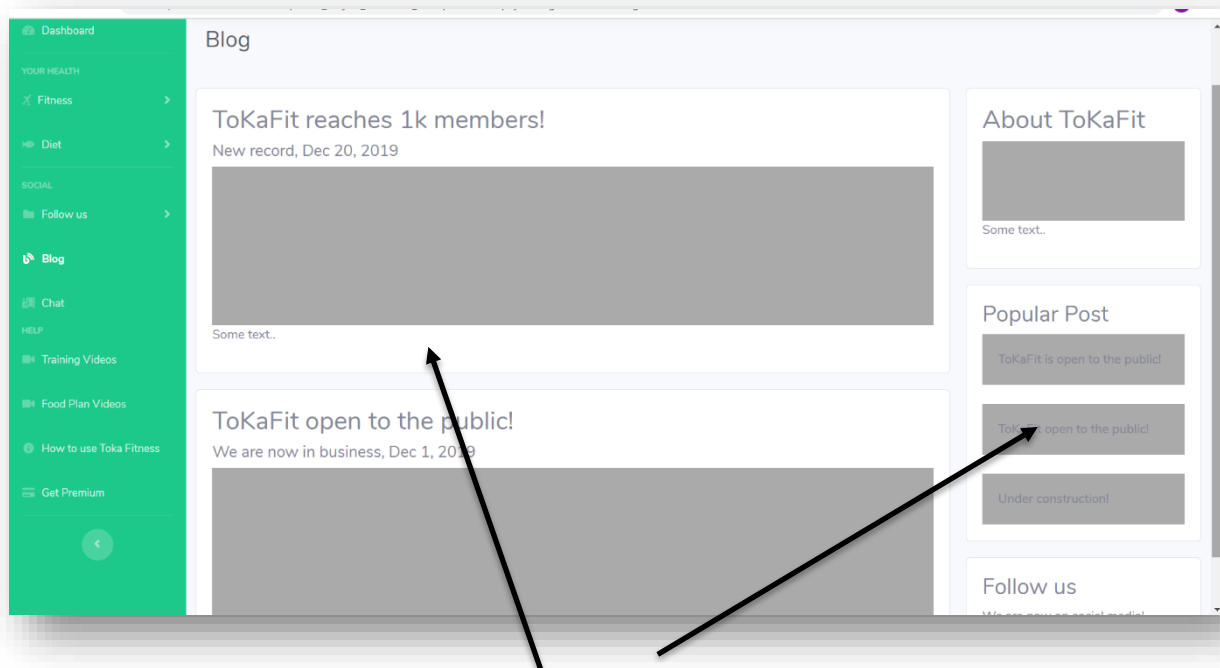
Date	Food	Weight (g)	Calories	Protein (g)	Carbohydrates (g)	Fat (g)
19th December 2019	Chicken	500	975	147.75	0	38.6

This allows users to monitor their diet they can add the various food for each day, and it will work out the calories and fat content. Ass the user enters more the history will grow and give them an average calories per week.





This is the dashboard which allows members to access various parts of the site, here we can view weight overview for the months. This was selected as it better and more motivational when they can see a decline over time. If it was day to day it wouldn't show much significant changes and, in some cases, may show weight been added on.



This is the blog page this allows has member and no member's access. The member can see both and return messages to other members.

Also includes popular post and links to Facebook, and twitter accounts.

The screenshot shows the Toka Fitness web application. On the left is a green sidebar with navigation links: Dashboard, Fitness, Diet, Your Diet Pages (Food Diary, Statistics, Tracker), Social (Follow us, Blog, Chat), and Help (Training Videos). The main content area is titled 'Diet Tracker' and features a form to 'Add exercise data'. The form has two input fields: 'Food:' and 'Amount (grams):', followed by a 'Submit' button. In the top right corner, there is an 'Alerts Center' widget showing two notifications: 'A new monthly report is ready to download!' dated December 12, 2019, and 'You have achieved your monthly goal!' dated December 7, 2019, with a 'Show All Alerts' link.

This page is used for Diet tracking, the user inputs food eaten and the amount in calories. Once submitted it will keep a record of the different amount of food eaten each day. A monthly report is generated which then can be compared to various element such a protein, carb intake and calories.

The screenshot shows the Toka Fitness web application's 'Fitness Tracker' page. The green sidebar is identical to the previous page. The main content area has a title 'Fitness Tracker' and a green button 'Import from fitness tracker' in the top right. There are two forms: 'Add exercise data' and 'Add current weight'. The 'Add exercise data' form includes radio buttons for 'Running', 'Walking', 'Swimming', and 'Other', a 'Duration (minutes):' input field, and a 'Submit' button. The 'Add current weight' form has a 'Weight (kg):' input field and a 'Submit' button.

The fitness tracker page relies on adding exercise data, this could be for the four most common options. The button at the top allows this you to import the data from a fitness tracker.

Website code

PHP code for member page

```
1 <?php
2
3 include('config.php');
4 session_destroy();
5 session_start();
6 if (isset($_POST['login'])) {
7     $email = $_POST['email'];
8     $password = $_POST['password'];
9     $query = $connection->prepare("SELECT * FROM users WHERE email = ?");
10    $query->bindParam("email", $email, PDO::PARAM_STR);
11    $query->execute();
12
13    $result = $query->fetch(PDO::FETCH_ASSOC);
14
15    if (!$result) {
16        echo '<script>alert("Invalid username and password combination");'
17    } else {
18        if (password_verify($password, $result['password'])) {
19            $_SESSION['user_id'] = $result['id'];
20            $_SESSION['first_name'] = $result['firstname'];
21            $_SESSION['last_name'] = $result['lastname'];
22            header("Location: index.php");
23            die();
24        } else {
25            echo '<script>alert("Invalid username and password combination");'
26        }
27    }
28 }
29
30 ?>
```

This is the PHP code for the login. Link to include another page. Uses a nested if statement

Session set up to do the following:

- makes user data available across the whole website
- makes a temporary file in a server temporary directory which saves session data
- atomically destroys when user close the browser

Super global variable with session data after session started

Select the user details

Binds the parameter to PHP variable in SQL statement

Produces a message if password invalid

```
1 <?php
2
3 include('config.php');
4 session_start();
5
6 if (isset($_POST['register'])) {
7
8     $firstname = $_POST['firstname'];
9     $lastname = $_POST['lastname'];
10    $email = $_POST['email'];
11    $password = $_POST['password'];
12    $repeatpassword = $_POST['repeatpassword'];
13    if($password != $repeatpassword) {
14        echo '<h1><font color="white"><center>Password and repeat password do not match!</center></font></h1>';
15    } else {
16        $password_hash = password_hash($password, PASSWORD_BCRYPT);
17
18        $query = $connection->prepare("SELECT * FROM users WHERE EMAIL=:email");
19        $query->bindParam("email", $email, PDO::PARAM_STR);
20        $query->execute();
21
22        if ($query->rowCount() > 0) {
23            echo '<h1><font color="white"><center>The email address is already registered!</center></font></h1>';
24        }
25
26        if ($query->rowCount() == 0) {
27            $query = $connection->prepare("INSERT INTO users(FIRSTNAME, LASTNAME,PASSWORD,EMAIL) VALUES (:firstname, :lastname,:password_hash,:email)");
28            $query->bindParam("firstname", $firstname, PDO::PARAM_STR);
29            $query->bindParam("lastname", $lastname, PDO::PARAM_STR);
30            $query->bindParam("password_hash", $password_hash, PDO::PARAM_STR);
31            $query->bindParam("email", $email, PDO::PARAM_STR);
32            $result = $query->execute();
33
34            if ($result) {
35                echo '<h1><font color="white"><center>Your registration was successful!</center></font></h1>';
36            } else {
37                echo '<h1><font color="white"><center>Something went wrong!</font></center></h1>';
38            }
39        }
40    }
41 }
42
43 ?>
44 <!DOCTYPE html>
45 <html lang="en">
46
```

To collect the data from the form, used the PHP super global variable.

Used bindParam with the SQL statement

```
1 <?php
2 session_start();
3
4 if(!isset($_SESSION['user_id'])){
5     header('Location: login.php');
6     exit;
7 }
8
9
10 if(!$_SESSION['premium']){
11     echo 'You need to be a premium member to access this part of the website!';
12 } else {
13     ?>

```

Isset function is used to check whether there is a value entered. If there is no value, it echoes a message back to user to go to the login in page. Then it checks if the value entered is equal to the value in the database in this case

If userID valid it will allow the use to access the training video. In other words, they are a paying customer. Echo a message if they are not

```
CAUsers\Administrator\Desktop\ToKaFit\YoKaFit\Fitness_statistics.php - Notepad++ [Administrator]
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
index.php login.php sb-admin-2.min.js gulpfile.js config.php del_statistics.php register.php fitness_statistics.php

268 <!-- End of Page Wrapper -->
269
270 <!-- Scroll to Top Button-->
271 <a class="scroll-to-top rounded" href="#page-top">
272 <i class="fas fa-angle-up"></i>
273 </a>
274
275 <!-- Logout Modal-->
276 <div class="modal fade" id="logoutModal" tabindex="-1" role="dialog" aria-labelledby="exampleModalLabel" aria-hidden="true">
277 <div class="modal-dialog" role="document">
278 <div class="modal-content">
279 <div class="modal-header">
280 <h5 class="modal-title" id="exampleModalLabel">Ready to Leave?</h5>
281 <button class="close" type="button" data-dismiss="modal" aria-label="Close">
282 <span aria-hidden="true"></span></button>
283 </div>
284 <div class="modal-body">Select "Logout" below if you are ready to end your current session.</div>
285 <div class="modal-footer">
286 <button class="btn btn-secondary" type="button" data-dismiss="modal">Cancel</button>
287 <a class="btn btn-primary" href="login.php">Logout</a>
288 </div>
289 </div>
290 </div>
291 </div>
292
293 <!-- Bootstrap core JavaScript-->
294 <script src="vendor/jquery/jquery.min.js"></script>
295 <script src="vendor/bootstrap/js/bootstrap.bundle.min.js"></script>
296
297 <!-- Core plugin JavaScript-->
298 <script src="vendor/jquery-easing/jquery.easing.min.js"></script>
299
300 <!-- Custom scripts for all pages-->
301 <script src="js/sb-admin-2.min.js"></script>
302
303 <!-- Page level plugins -->
304 <script src="vendor/chart.js/Chart.min.js"></script>
305
306 <!-- Page level custom scripts -->
307 <script src="js/demo/chart-area-demo.js"></script>
308 <script src="js/demo/chart-pie-demo.js"></script>
309
310 </body>
311 </html>
312
313
314
PHP Hypertext Preprocessor file length: 11,679 lines: 314 Ln: 1 Col: 1 Sel: 0 | 0 Unix (LF) UTF-8 INS
```

Used bootstrap JS with some of the functionality on the pages. Menu, graphs and login screen.

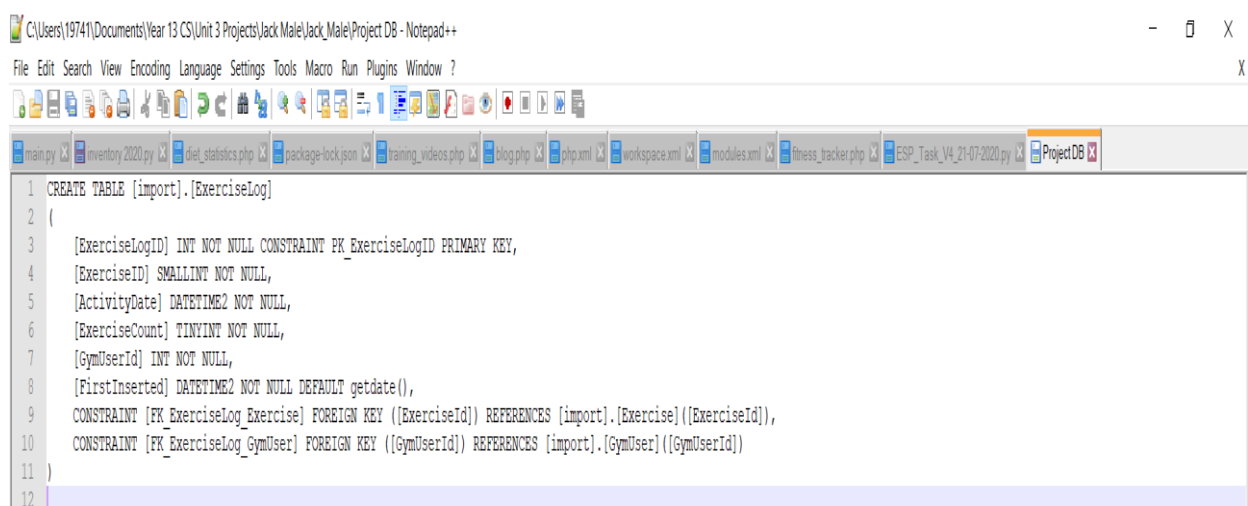
```
1 * {
2   margin: 0;
3   padding: 0;
4 }
5
6 html, body, #navbar {
7   min-height: 100%;
8   height: 100%;
9 }
10
11 body {
12   background: rgb(38,38,38);
13   font-family: 'Open Sans', sans-serif;
14   font-weight: 300;
15   margin: 0;
16 }
17
18 h1 {
19   font-family: 'Quicksand', sans-serif;
20   font-weight: 500;
21 }
22
23 ::-webkit-scrollbar {
24   width: 16px;
25 }
26
27 ::-webkit-scrollbar-thumb:hover {
28   background: rgb(0,176,240);
29 }
30
31 ::-webkit-scrollbar-track {
32   background: rgb(13,13,13);
33 }
34
35 ::-webkit-scrollbar-thumb {
36   border-radius: 25px;
37   border-style: solid;
38   border-color: rgb(13,13,13);
39   border-width: 4px;
40   background: rgb(0,112,192);
41 }
```

These styles apply to all elements (except h1 and scrollbar style). The scrollbar styling only works on select browsers like chrome.

The Meta viewport tag lets me control the content on different sized screens.

Linked jQuery to the website, so it can be used in the JavaScript code (e.g. to style elements).

Hashing Function, using JS allows the password to scramble to increase security.



```

1  <?php
2  session_start();
3
4  require_once "setupDb.php";
5
6  $password = $passwordError = $oldPassword = $oldPasswordError = $confirmPass = $confirmPassError =
7
8  function filterInput($data) {
9      $data = trim($data);
10     $data = stripslashes($data);
11     $data = htmlspecialchars($data);
12     return $data;
13 }
14
15 if ($_SERVER["REQUEST_METHOD"] == "POST") {
16     $oldPassword = filterInput($_POST["oldPassword"]);
17     $password = filterInput($_POST["newPassword"]);
18     $confirmPass = filterInput($_POST["passConfirm"]);
19
20     if (empty($oldPassword)) {
21         $oldPasswordError = "Please enter your old password";
22         $_SESSION["passError"] = $oldPasswordError;
23     }
24     elseif(empty($password)) {
25         $passwordError = "Please enter your new password";
26         $_SESSION["passError"] = $passwordError;
27     }
28     elseif (empty($confirmPass)) {
29         $confirmPassError = "Please confirm your new password";
30         $_SESSION["passError"] = $confirmPassError;
31     }
32     else {
33         if ($password == $confirmPass) {
34             //SQL update statement to change user information
35             $sql = "SELECT passwordHash FROM userinfo WHERE email = ?";
36
37             if ($stmt = $connection->prepare($sql)) {
38                 //binds variables to parameters
39                 $stmt->bind_param("s", $param_email);
40
41                 //set parameters
42                 $param_email = $_SESSION["email"];
43
44                 if ($stmt->execute()) {
45                     $stmt->store_result();
46
47                     $stmt->bind_result($passwordHash);
48                     if ($stmt->fetch()) {
49                         if (password_verify($oldPassword, $passwordHash)) {
50                             //SQL statement below updates data on the database
51                             $sql = "UPDATE userinfo SET passwordHash = ? WHERE email = ?";

```

This function allows the user to reset password, checks the person existing email and binds the two together.

These 3 if statements check if the user entered a value in the input boxes.

This SQL statement selects the current password hash of the user from the database. This is done to compare to the user's old password input (if the input = password hash, then the program continues).

```
52
53
54         if ($stmt = $connection->prepare($sql)) {
55             //binds variables to parameters
56             $stmt->bind_param("ss", $param_passwordHash, $param_email);
57
58             //parameters are set
59             //converts new password into hash
60             $param_passwordHash = password_hash($password, PASSWORD_DEFAULT);
61             $param_email = $_SESSION["email"];
62
63             if ($stmt->execute()) {
64                 //changes password characters into asterisks
65                 $password = str_repeat("*",strlen($password));
66                 $_SESSION["password"] = $password;
67                 $_SESSION["passError"] = "";
68             }
69             $stmt->close();
70         }
71         else {
72             $_SESSION["passError"] = "Old password is not correct";
73         }
74         $connection->close();
75     }
76 }
77 else {
78     //If the SQL statement didn't work, the resulting phrase will be outputted (in the profile page using session variable)
79     $_SESSION["passError"] = "Sorry, something went wrong, please try again";
80 }
81 }
82 $stmt->close();
83 }
84 else {
85     $confirmPassError = "Passwords do not match";
86     $_SESSION["passError"] = $confirmPassError;
87 }
88 }
89 $connection->close();
90 }
91
92 //returns to profile page
93 header("location: profile.php");
94 exit;
95 ?>
```


Testing

Test data	Expected outcome	Reasons for test	Actual outcome
email: a@a password: a	Log in normally	Check if valid inputs work	As expected, the user is logged in
Test data	No log in	Check if erroneous inputs not in database won't work	As expected, user is not logged in
Empty inputs			
Email: ab@abc Password: 1111	No log in	Check if valid inputs won't work if not existing in database	As expected, user is not logged in
Empty inputs	No log in	Check if invalid inputs won't work	As expected, user is not logged in due to lack of inputs

Sign up

Password: 4444 confirm password: 4444			
Title: Mr First name: qq Last name: sss Email: oooo@a Phone no: abc Password: ss s Confirm password: sss	Account is not made	To check if website recognises invalid phone no. (not only being numbers)	As expected, no account is made

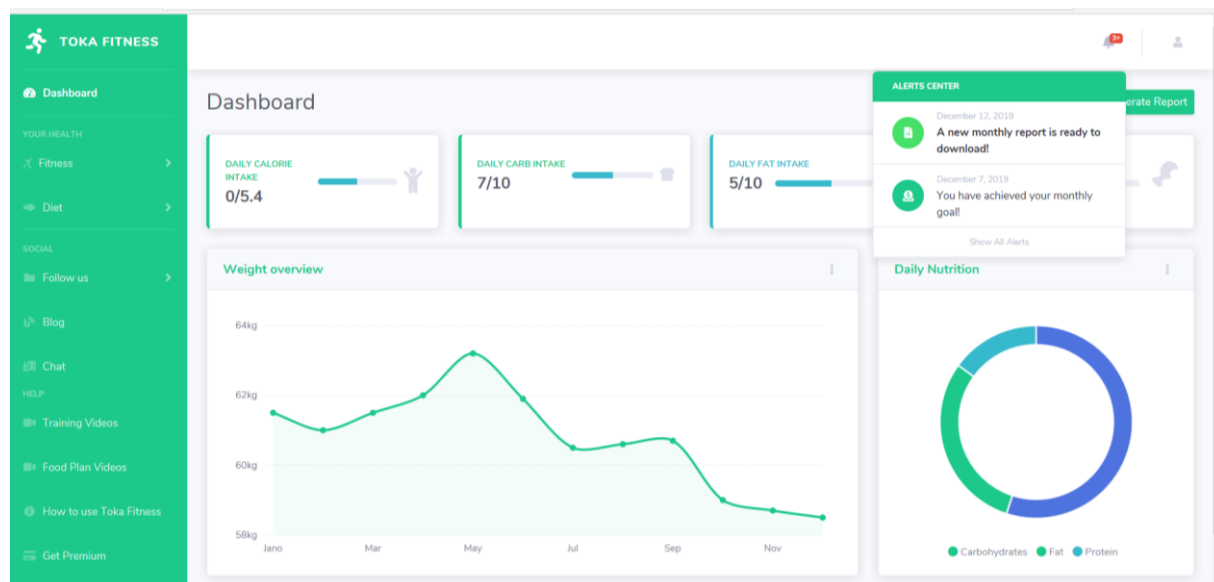
Title: Mr First name: qqq Last name: sss Email: oooo@a Phone no: abc Password: sss Confirm password: sss2	Account is not made	To check if website checks if password = confirmed password	As expected, no account is made
Title: Mr First name: qqq Last name: sss Email: oooa Password: sss Confirm password: sss2	Account is not made	To check if website checks validity of email (syntax)	As expected, account is not made

Element to be tested	Expected result	Test Data	Expected result from test data	Actual result
Header tab navigation system	When user clicks on buttons system directs user to right webpage.	n/a	n/a	System successfully directs user to requested webpage.
Sign up validation	<p>When user inputs data, the system checks the data and outputs an error if the input isn't inappropriate for the field:</p> <p>First name and Last name must only contain letters and not numbers or special characters</p> <p>the email field must contain the "@" and "." Characters</p> <p>There must be at least one character</p>	<p>First name: Chris 555</p> <p>Last Name: Jones</p> <p>Email: ChrisJones@gmail.com (email already registered)</p> <p>Email (2nd test):ChrisJones2@gmail.com</p>	<p>Error popup and form cannot be submitted</p>	<p>System directs user to an error page if the email is not unique However doesn't validate other values such as first name, last name, email syntax, postcode and password and submits the data into the database. System outputs an error message when no data is inputted into the form.</p>
Dashboard	View dashboard	Imported data from user input	Viewed dashboard and all graphs	No issues all graphs could be seen
Graphs	View graphs, bar, pie charts	Imported data	Viewed graphs with relevant statistics	No issues
Video	View video	YouTube Videos	Select and view video for fitness and diet	No issues

Fitness Diary	View tabular data	Date: December Exercise: Run, Swim and Walk Calories: range Distance: Range	View data in tabular format with range of dates, exercises, calories and distance	No issues
Diet Tracker	Inputs various food and weight in grams	Chicken 400 grams	Submit data for tracking	No issues

Test Results

Outcome for dashboard



Test outcome Fitness Diary

The screenshot displays the Toka Fitness Fitness Diary. The left sidebar is identical to the dashboard. The main content area is titled 'Fitness Diary' and shows a 'History' table. An 'ALERTS CENTER' is also present on the right, identical to the dashboard view.

Date	Exercise	Calories burnt	
20th December 2019	Run	300	
20th December 2019	Swim	420	1h
19th December 2019	Walk	142	30m
18th December 2019	Run	300	45m
17th December 2019	Swim	420	1h
17th December 2019	Walk	142	30m
16th December 2019	Run	300	45m
15th December 2019	Swim	420	1h
14th December 2019	Walk	142	30m
	Run	300	45m

Test outcome Diet Tracker

The screenshot shows the Toka Fitness web application. On the left is a green sidebar with a navigation menu. The main content area is titled "Diet Tracker" and features a form to "Add exercise data". The form has two input fields: "Food:" with the value "Chicken" and "Amount (grams):" with the value "400". A "Submit" button is located below the fields. The sidebar menu includes sections for "YOUR HEALTH", "SOCIAL", and "HELP".

TOKA FITNESS

- Dashboard
- YOUR HEALTH
 - Fitness
 - Diet
- SOCIAL
 - Follow us
 - Blog
 - Chat
- HELP
 - Training Videos
 - Food Plan Videos
 - How to use Toka Fitness
 - Get Premium

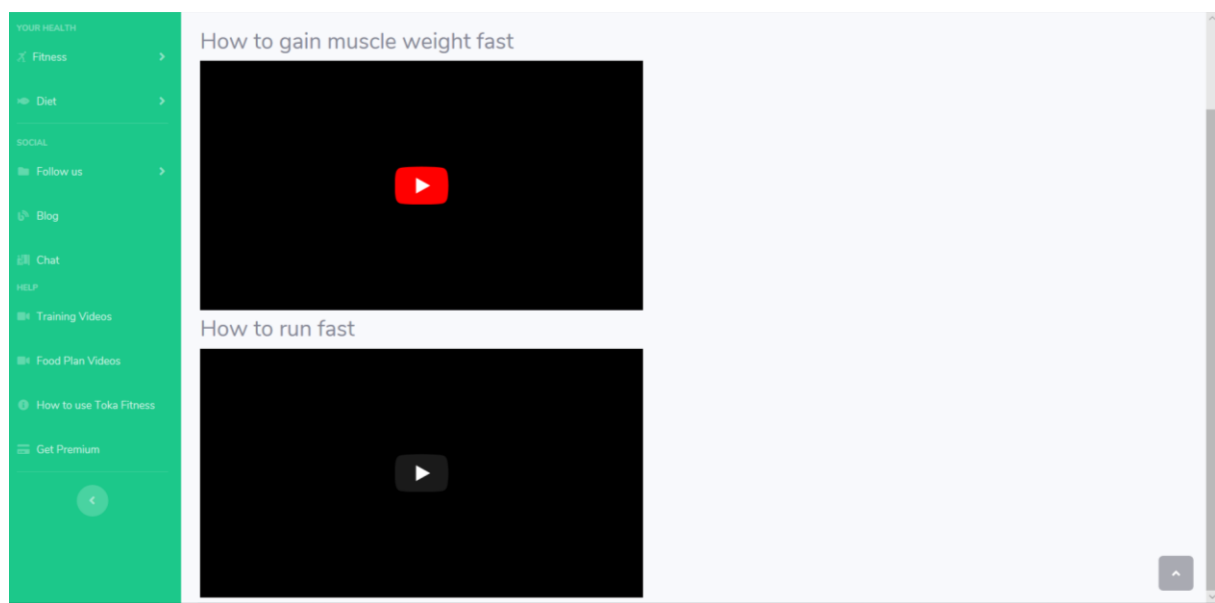
Diet Tracker

Add exercise data

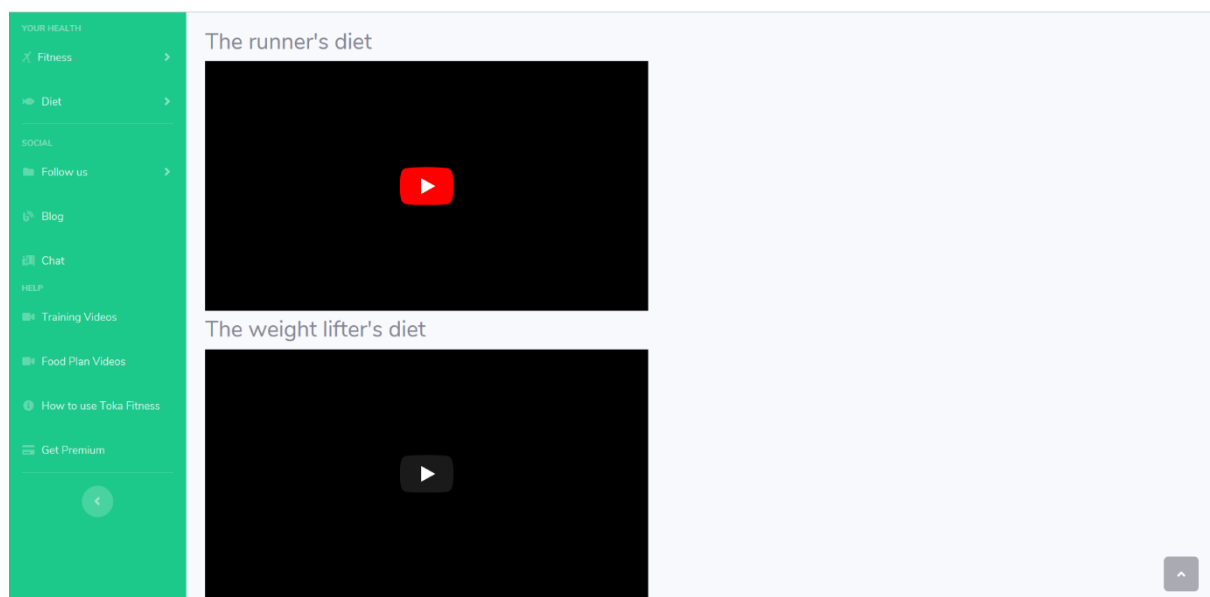
Food:

Amount (grams):

Test outcome Training Video



Test outcome Diet Videos



Profile info editing:

Test data	Expected outcome	Reasons for test	Actual outcome
No inputs	Website asks for inputs	Check if lack of inputs is detected	As expected, error message is displayed
Valid inputs (e.g. abc for first name)	Website accepts input and info is changed	Check if valid inputs are accepted	As expected, error message is displayed
Old password is incorrect	Website tells user, the input is wrong	Check if incorrect data is detected	As expected, the error message is displayed
Old pass is correct, New password = ccc Confirm password = asdf	Website tells user passwords don't match	Check if code works as it should	As expected, the user is notified of the exact problem

Unit to test Sign-In Assumption

Unit to test	Sign-In
Assumption	The webpage displayed the sign-in input screen and wait for user's action.
Input	user ID, user password, user information

Expect output

Register successfully with proper input, register unsuccessfully with improper, and make alter the same time.

Pass Function fit the requirement.

Fail and probable error

- (1) Register still success with improper input. Error related input checking.
- (2) Register success with proper input but no related data show in data base. Error related to connection with data base.


```

1  <?php
2
3  include('config.php');
4  session_start();
5
6  if (isset($_POST['register'])) {
7
8      $firstname = $_POST['firstname'];
9      $lastname = $_POST['lastname'];
10     $email = $_POST['email'];
11     $password = $_POST['password'];
12     $repeatpassword = $_POST['repeatpassword'];
13     if($password != $repeatpassword) {
14         echo '<h1><font color="white"><center>Password and repeat password do not match!</center></font>
15     } else {
16         $password_hash = password_hash($password, PASSWORD_BCRYPT);
17
18         $query = $connection->prepare("SELECT * FROM users WHERE EMAIL=:email");
19         $query->bindParam("email", $email, PDO::PARAM_STR);
20         $query->execute();
21
22         if ($query->rowCount() > 0) {
23             echo '<h1><font color="white"><center>The email address is already
24         }
25
26         if ($query->rowCount() == 0) {
27             $query = $connection->prepare("INSERT INTO users(FIRSTNAME, LASTNAME,
28             (:firstname, :lastname, :password_hash, :email)");
29             $query->bindParam("firstname", $firstname, PDO::PARAM_STR);
30             $query->bindParam("lastname", $lastname, PDO::PARAM_STR);
31             $query->bindParam("password_hash", $password_hash, PDO::PARAM_STR);
32             $query->bindParam("email", $email, PDO::PARAM_STR);
33             $result = $query->execute();
34
35             if ($result) {
36                 echo '<h1><font color="white"><center>Your registration was successful!</center></font>
37             } else {
38                 echo '<h1><font color="white"><center>Something went wrong!</font></center></h1>';
39             }
40         }
41     }

```

There were a few issues when trying to run the code, added a \$ to the if which made it variable, removed this and program worked

```

21
22     if ($query->rowCount() > 0) {
23         echo '<h1><font color="white"><center>The email address is already registered!</center></font>
24     }

```

```

1 <?php
2
3 include('config.php');
4 session_start();
5
6 if (isset($_POST['register'])) {
7     $firstname = $_POST['firstname'];
8     $lastname = $_POST['lastname'];
9     $email = $_POST['email'];
10    $password = $_POST['password'];
11    $repeatpassword = $_POST['repeatpassword'];
12    if($password != $repeatpassword) {
13        echo '<h1><font color="white"><center>Password and repeat password
14    </h1>';
15    } else {
16        $password_hash = password_hash($password, PASSWORD_BCRYPT);
17
18        $query = $connection->prepare("SELECT * FROM users WHERE EMAIL=:email");
19        $query->bindParam("email", $email, PDO::PARAM_STR);
20        $query->execute();
21
22        if ($query->rowCount() > 0) {
23            echo '<h1><font color="white"><center>The email address is already
24    </h1>';
25        }
26
27        if ($query->rowCount() == 0) {
28            $query = $connection->prepare("INSERT INTO users(FIRSTNAME, LAST
29    (:firstname, :lastname, :password_hash, :email) VALUES
30    $query->bindParam("firstname", $firstname, PDO::PARAM_STR);
31    $query->bindParam("lastname", $lastname, PDO::PARAM_STR);
32    $query->bindParam("password_hash", $password_hash, PDO::PARAM_STR);
33    $query->bindParam("email", $email, PDO::PARAM_STR);
34    $result = $query->execute();
35
36    if ($result) {
37        echo '<h1><font color="white"><center>Your registration was successful!</center></font>
38    </h1>';
39    } else {
40        echo '<h1><font color="white"><center>Something went wrong!</font></center></h1>';
41    }
42    }
43 }
44 }
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97 }
98 }
99 }
100 }

```

Another problem was the semi colon at the end of the statement. This was corrected and loaded the login page

Another problem which was hard to detect was missed curly brackets. Added the missing brackets and the code interpreted fine

```

24 </h1>';
25 }
26
27 if ($query->rowCount() == 0) {
28     $query = $connection->prepare("INSERT INTO users(FIRSTNAME, LASTNAME,PASSWORD,EMAIL) VALUES
29     (:firstname, :lastname, :password_hash, :email)");
30     $query->bindParam("firstname", $firstname, PDO::PARAM_STR);
31     $query->bindParam("lastname", $lastname, PDO::PARAM_STR);
32     $query->bindParam("password_hash", $password_hash, PDO::PARAM_STR);
33     $query->bindParam("email", $email, PDO::PARAM_STR);
34     $result = $query->execute();
35
36     if ($result) {
37         echo '<h1><font color="white"><center>Your registration was successful!</center></font>
38     </h1>';
39     } else {
40         echo '<h1><font color="white"><center>Something went wrong!</font></center></h1>';
41     }
42 }
43 }
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87 }
88 }
89 }
90 }
91 }
92 }
93 }
94 }
95 }
96 }
97 }
98 }
99 }
100 }

```

Task 3: Evaluation

Task 3 Part A- Gathering and evaluating feedback

What's your name? Bill	Please respond to the question here
Did the prototype allow you to sign in?	Yes, it was easy to sign in
Did you get a confirmation email?	Yes, but it did not have much information
Did the prototype allow you to login?	Yes, I was able to log in
Were you able to navigate around the page?	Yes, all of the links work
Was your name clear?	Yes
Was today's data clear?	Yes, but it was very small
On your food diary were you able to view your food intake	The quick tools worked, and I was able to scan and add food to the table
Was the calories, carbs, fat and sugar value of your food displayed?	Yes
Were you able to access the two available videos?	Yes, great to see had option of viewing within the page and if wanted can view full screen, one problem would be nice to select various videos which maybe suited to my workouts
Were you able to access my fitness training page?	Yes
Were you able to add a type of exercise from the drop-down list?	Yes, but the choice was basic
Was the output of the exercise calculated and clearly displayed	Yes
Was the output of the weight exercise calculated and clearly displayed?	Yes
Was the weight difference displayed if you were under your target?	Yes
Were you able to access my reports page?	Yes
Was your report clearly displayed on the screen for today?	Yes
Were you able to access a blog and make a post?	Different blogs available to use
Overall were you able to navigate around the system and select the different options?	Yes

Were you able to change the settings to make the text bigger?	Yes
Could you use the Website on the computer, and did you have any problems?	Yes could be used and no problems

Can the Website be developed or improved further?

I liked the simple navigation bar at the top of the page.

The confirmation email could have more information such as terms and conditions.

The type of exercise from the drop-down list needs more options

The type of exercise from the quick list option needs more options

I was able to link to my iPhone health Website, but the data was not imported and calculated into my daily total

The search for a fish recipe did not work. I had lots of different recipes.
I did not like the sound effect I had to turn off the volume.

Thank you for your help

TokaFitness	
What's your name? Paul	Please respond to the question here
Did the prototype allow you to sign in?	I was able to sign in
Did you get a confirmation email?	No, I entered the wrong email address
Did the prototype allow you to login?	Yes
Were you able to navigate around the page?	Did not read it
Was your name clear?	links work
Was today's data clear?	Yes
On your food diary were you able to view your food intake	Yes
Was the calories, carbs, fat and sugar value of your food displayed?	Yes, I like this
Were you able to access the video?	Yes
Were you able to access my fitness training page?	Yes
Were you able to add a type of exercise from the drop-down list?	Yes
Was the output of the exercise calculated and clearly displayed	Yes
Was the output of the weight exercise calculated and clearly displayed?	Yes
Was the weight difference displayed if you were under your target?	Yes
Was the weight difference displayed if you were over your target?	Yes
Was the data imported clear?	Yes
Were you able to access my reports page?	Yes
Was your report clearly displayed on the screen for today?	Yes
Were you able to access a blog and make a post?	Yes
Overall were you able to navigate around the system and select the different options?	Yes
Were you able to change the settings to make the text bigger?	Yes
Could you use the Website on the computer, and did you have any	No

problems?	
Did the prototype allow you to sign in?	Yes
Did you get a confirmation email?	Yes
Were you able to view a fitness training video?	Yes
Were you able to access my reports page?	Yes
Was your report clearly displayed on the screen for today?	Yes
Were you able to access a blog and make a post?	Yes
Were you able to link to Instagram Website?	Yes
Were you able to access twitter from the Website?	Yes
Overall were you able to navigate around the system and select the different options?	Yes
Could you use the Website on the computer, and did you have any problems?	No problems

Can the Website be developed or improved further?

I like this Website I think it would be very useful if you were on a health kick. I was able to navigate the system each of the options worked and I was able to add food to my list. I like my reports as I could plan my food for the day by entering food items for each of the meals.

If you could get the Website to link to my iPhone that would be a very useful function. The Website was very professional looking, and I would recommend this Website to my friends.

It gave lots of information and advice about fitness training and healthy living so it will help me.

Like all of the videos and but could have personal trainer advise

I could not link my iPhone, some help files would help

A link to ToKa Fitness Facebook page would also help

Some of the layout and use of text should be looked at to make the information stand out clearer. Some of the screen instruction was unclear.

I did not pay for full membership but access to the free service was easy and had lots of useful information, I would think about the full membership if I knew more about the full membership services offered. I was able to access the Website on my iPhone and on a computer.

Thank you for your help

This is the report on the analyses of the feedback gathered from previous task I asked 3 of my colleagues to review the prototype I asked them to consider the following points and to share their thoughts:

- the prototype did well
- could be developed or improved

Consolidated summary findings from the tester:

I liked the simple side navigation bar on the page.

The confirmation email could have more information, such as terms and conditions.

I was able to view on mobile phone, but the data was not imported and calculated into my daily total

I did not like the sound effect I had to turn off the volume.

It was easy to use but I could not see some of the text and links. I only do one type of exercise so that was ok, but you need more options.

I like this Website I think it would be very useful for motivational purposes. I was able to navigate the system each of the options worked
I like my reports as I could plan my food for the day by entering food items for each of the meals.
I like the graphs which made it easier to view the information statistics
If you could get the Website to link to my iPhone that would be a very useful function.
The Website was very professional looking, and I would recommend this Website to my friends.

It gave lots of information and advice about fitness training
Like all the videos but more option would be useful
I could not link my phone, some help files would help
A link to ToKa Fitness Facebook page would also help
Some of the layout and use of text should be looked at to make the information stand out clearer. Some of the screen instruction was unclear.

My observation summary notes:

Might need further on-screen guidance notes.
Good navigation options, all navigation links worked.
Testers able to change interface to make the text larger.
Testers liked the use of quick tools to enter an item
Further options required for the video choices
Linking to other technologies to be reviewed and linked to help files for technical problems.
Testers were able to access the Website through mobile device, tablet and a computer.
Overall the Website performed well the system was responsive and user navigation worked well, accessibility features for users with sight loss also available.

Overall the Website performed well the Website navigation performed well, and it was easy to use.

Tester's, the information and advice about fitness training and healthy living and the links to the videos worked well. The information and guidance in the verified links should reduce health issues or injuries.

The quick tools and add food facility worked, and the user was able to add food items and the overall daily reporting function helped with the planning. Testers were able to add food items such as breakfast lunch, dinner, and snacks, copy set meal data, copy yesterday's meal data, create own meal calorie counter /analysis. However, they do have the option to add manually other exercise options. Therefore, testers had the ability to

customize some workout and eating plans.

The type of exercise from the quick list option requires more options, but the tester liked all the videos. Testers liked the option of using the Website to download social media Websites, and link to specific health and nutrition specific websites. One of ToKa Fitness user requirements was that it would promote ToKa Fitness, one of the testers reported that “The Website was very professional-looking, and I would recommend this Website to my friends”. Therefore, it meets the users’ functional and non-functional requirements. Testers were able to access the Website through a mobile device and a computer after some modifications to the CSS files.

Services and functions to develop further are the content of the email confirmation, will include information about full membership and the terms and conditions. The tester like the graphs which were easy to understand and showed a visual representation of the data. Making easier to follow progress.

They also reported that linking to other technologies was not a stable option. Some technologies linked and the data was imported and calculated in the Website but not all technologies. This needs to be investigated further and help files or links added to the Website.

Changes required:

Issue	Solution
Confirmation email required further information	Information about terms and conditions, information about paid content to full services to be added to the email content. So that the users are informed on the services offered and cover the requirements of professional privacy and security of user data
Insufficient options on exercise list	Provide further exercise options to allow the users to customizable workout plans. This will improve the level of detail of options and instructions in the fitness training plan
The interface needs to be reviewed	Text size and colours and use of white space to be reviewed, use of green text to be changed to purple text so that visually impaired users can see the information.
Interface guidance	On-Screen guidance notes to be added so that the user can navigate the Website easier. This will promote user experience and company image through visual assets and content
Link to Social media	Testers were able to download social media Websites. Providing a link to link to ToKa Fitness Facebook page would provide further information on services and terms and conditions.

Legal Services

All legal requirements supported by ToKa Fitness in regard to EU & UK Data Protection.

Social Networking Services

You may enable or log in to the Services via various online third-party services, such as social media and social networking services. To take advantage of these features and capabilities, we may ask you to authenticate, register for, or log into Social Networking Services on the websites of their respective providers.

Task 3 Part B – Assessing project outcomes

ToKa Fitness wanted a Website that offers personal training sessions and advice on fitness training and healthy living to its customers and requested that the following functional requirements.

ToKa Fitness key performance indicators for the proposed solution were:

- has free access with some accessibility to services
- accessibility features for customers with sight loss
- link to 'social media' features
- ability to view workout

The owner wanted to develop a digital system that:

- provided information and advice about fitness training and healthy living to help customers improve their own health and fitness
- provided access to digital content to support customers with their training and healthy lifestyle
- encouraged existing customers who have access to digital devices to use more of the services provided by ToKa Fitness

I believe that the Website developed meets ToKa Fitness and their customers' needs, and the majority of the customer acceptance criteria for the proposed system conditions have been met.

The Website is suitable for the target customer group are adults, males and females and complies with age restrictions and guidelines clear advice will be given to reduce health issues or injuries and complies with the industry's legal and ethical requirements. The customer area is secured and accessed via password and payment made in a secure platform. This complies with legal requirements. The privacy and security of customer data is important each member will have access to their area via secure login. This will ensure that ToKa Fitness is perceived as a reputable company and encourage existing customers who have access to digital devices to use more of the services provided by ToKa Fitness. Hopefully to also encourage new customers to use the Website and services.

One of the many key requirements of the Website that was met was that customers were to be given two options free access with some accessibility to services or full access where the customer would pay for further functionality and analysis. This function was made to the customer. They were guided through the process with on-screen tips on how to complete the website to become a full member.

- Please enter your full name

- Enter long card number
- Enter security code

The email sent to the customer after they made the payment provided membership information and how to access the service and covered the industry's legal and ethical requirements.

The Website can be accessed via mobile devices and a computer and compatibility across different devices Android and iOS, as requested providing the customer with further options and flexibility of use especially accessibility the features for customers with sight loss. During the testing process, it was identified that the summary of food and fitness training reports were displayed. The remaining calorie and fitness training targets were displayed in coloured text. Demonstrate that no input is required. This is a summary of daily calculations.

During the customer testing process, it was evident that the Website was easy to use with on-screen guidance and prompts to enhance the customer experience in all areas of the Website and used website high-quality visual assets and content to provide a better customer experience.

Customers were able to access the system as a full customer with payment or free with limited access to the resources. The payment service offered a secure environment for these transactions complied with the legal requirements.

For the customers eating plan, the Website allowed the customer to customise their eating plan through the use of quick tools and the add food option for each of the meals. Customers could select from a pre-defined list of food, adding the item via the input form. The option to copy yesterday's meet was also offered to the customer. This allowed the customer the opportunity to create a customised eating plan

During the testing process, it was identified that further types of exercise needed to be added to the list, to allow the customer to provide an accurate record of their exercise. The exercise minutes and the type of exercise were calculated by the system to produce the fitness output, and this was compared to the customers' goal, and a difference was displayed.

Output	Goal output data	Difference
30 min	30 min	0

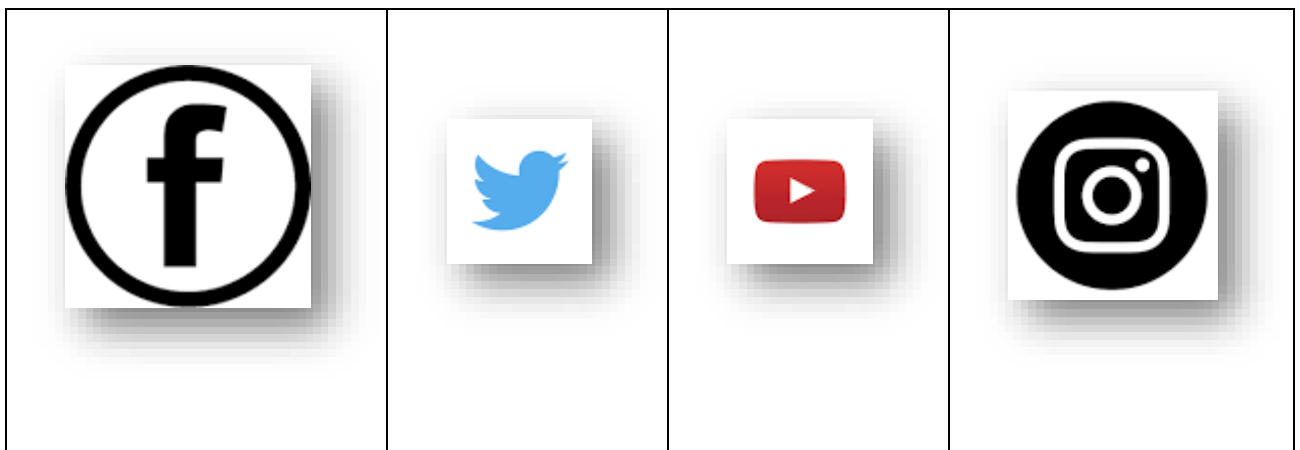
Each customer's fitness training plan allow the customer to meet their identified goal.

Providing links to the fitness training video and healthy living and eating video was another key requirement of the system. This provided access to digital content to support customers with their training and healthy lifestyle and information and advice

about fitness training and healthy living to help customers improve their own health and fitness.

All links to external sources took consideration of Copyright and intellectual property and Licensing requirements. All of the links were also verified before linking to the Website.

A key requirement was that the Website linked to 'social media'. The links on the Website also encouraged customers who have access to digital devices to use more of the services provided by ToKa Fitness and other blogs and forums. These links provided further information and advice about fitness training and healthy living to help customers improve their own health and fitness. All of the main Social media services were represented on the Website.



The customers were also able to download the Website function and were provided with help files if they experienced any problems.

The Website was tested, the feedback was analysed, and action taken to enhance the customers' experience. A video was also developed that guided the customer on how to fully utilise the Website functions and understand the report so that could improve their own health and fitness. Testers liked the option of using the Website to download social media Websites, and link to specific health and nutrition specific websites as well as the recipe option. Providing provides access to digital content to support customers with their training and healthy lifestyle through direct links and provides information and advice about fitness training, and healthy living was achieved as the customer was given access to specific verified fitness training video to help customers improve their own health and fitness.

One of ToKa Fitness user requirements was that it would promote ToKa Fitness, feedback from testers reported that "The Website was very professional-looking and would be recommend this Website to my friends". It meets the user's functional and non-functional requirements.

I believe that the majority of the functional and non-functional requirements of the system and legal requirements were met as the Website provides customised information and advice about fitness training and healthy living to help customers improve their own health and fitness. Overall the Website performed well the system was responsive, and user navigation worked well. Accessibility features for users with sight loss also available.

My proposed solution provides ToKa Fitness with a professional and easy to use system that promotes their business and encourage customers to use it.

The potential future improvements identified throughout the development and testing process are that further types of exercise need to be added to the list. Testers reported need to select various common exercise was not available. To provide a list that would allow the customer to provide an accurate record of their exercise. The exercise minutes and the type of exercise would then be calculated by the system to produce a customised fitness plan for the customer.

Further development of the option to linking to other technologies is also required. The Website like a Fitbit. Testers were frustrated that they could not link to their technology; therefore this will be the next stage of development. Providing the customer, the option to link into other technologies would allow the Website to record other data such as steps, blood pressure, posture etc.

Web Interface usage: On accessing the website the user lands on the website's homepage. The user can access the website under two different profile categories: a visitor, a registered user. The homepage contains a side navigation bar that allows easy access to different sections of the website. As a visitor the user can access the following sections of the website.

1. About: The user can view details about the developers, what the product is and contact information of the development team.
2. Food: General and specific food related information that can be helpful while following a particular regimen and links to websites for more specific and relevant information.
3. Forum: The user can access the forum and read threads from existing users however cannot post new threads or reply to them as a visitor.
4. Community: The user, as a visitor, can access the details of existing users and filter them based on specifications like weight range, gender, workout being followed etc.
5. Generate reports for various activities.

Task 1 Examiner Commentary

Activity A

The candidate has provided a comprehensive identification of the problem to be solved and demonstrated complete decomposition of the problem. The solution is of sufficient scope to meet the needs of the client and its users.

The proposal provides a thorough justification that the solution meets the needs of the client and users, potential risks discussed, and steps taken to risk mitigation takes steps to reduce the adverse effects. The candidate has considered the relevant guidelines and legal requirements concerning the development of their product and its application.

The candidate has provided comprehensive explanations of functional and non-functional requirements, key performance indicators and acceptable user criteria and has shown through process of computational thinking.

Activity B

The candidate has provided designs that are fit for purpose. They have shown the use of each object and that does not diminish other information that is relevant to the product. The candidate has designs which are consistent in layout and use of white space and have consistent elements within each page. Hierarchy navigation shows where it starts, the index page and allows the users to navigate down the website, illustrating the direction the user would take to navigate around the site.

Algorithms

The candidate has included a model case diagram using UML to get an overview of the system and state diagrams for individual components. The algorithms demonstrate understanding, precise logic, and efficient structure. They have inputs, processes and outputs that have been tested using a trace table. Each step is defined, uses sensible names for variables, indention provided and comments written underneath explaining how they work which is the appropriate and consistent use of accepted conventions.

Data requirements

The candidate has provided comprehensive coverage of the variables, data types and an

explanation. They have included Entity-relationship diagrams and applied appropriate and consistent naming conventions used. Data dictionaries are shown identifying the most relevant fields for this project.

Test strategy

The candidate has shown excellent progression from the abstraction model to the algorithms. The test strategy is comprehensive and shows how components interrelate, the order in which the parts tested and the testing that is required.

Task 2 Examiner Commentary

Prototype

The candidate has created a functional prototype using more than two different programming languages PHP, JavaScript, SQL, and JSON. The prototype has been well planned.

Techniques and technical skill are good with the use of an API for the data table. The structure is modular, and code is well organized, using precise logic and appropriate programming structures throughout which consistently shows the correct outcome. There are informative comments, especially in the validation and clear. Indentation has been used throughout and the candidate has demonstrated the proper use of local variables and where necessary the use of global variables. It is a well-defined interface which is consistent throughout and has more than adequate use of fonts and colours. The product is robust and handles common and unexpected errors.

The code is easily maintainable by a third party as it is consistently using appropriate naming conventions as well as logical, organized and informative commenting.

There is consistent and practical application of standards and guidelines that show considerable thought has been put into accessibility, compatibility, and legal and ethical considerations.

Task 2 Testing

The candidate has shown a thorough and detailed understanding of how to test inputs, calculations, validation checks and processes. They have provided tests which covers, normal, erroneous and extreme data. Comments show a comprehensive understanding of how errors/problems have been identified and how they rectified. Testing shows

evidence of an excellent iterative development process.

Task 2 Documentation

The practical development process includes a detailed recording of changes made, reasons for change and use of different version. There is a detailed description of the data that will suit user requirements so that both high and low-level properties of data and their use are dealt with. The design and development process included the confirmation that the actual physical prototype is in good standing, as well as the implementation of changes and solutions for any problems that might arise.

Task 3 Examiner Commentary

Part A

There is an effectiveness in the materials that the candidate has provided that shows they can support the feedback process and the documents would allow for the gathering of good-quality feedback for different aspects of the developed prototype. The feedback was consistent and provided evidence of further iteration.

The quality of communication is sufficient for both technical and non-technical audiences because of the consistent use of appropriate techniques, methods and formats.

Part B

The assets used are appropriate for this product. The candidate has considered legal and ethical issues, especially a consideration for people who are struggling with weight problems and a consideration of how this may affect them. Sources are reliable and valid.

There is a detailed evaluation of the functional and non-functional requirements of the system. They have discussed the KPIs³. They have also included how each Webpage meets the user needs.



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