Gym analytics and Personal training application

Functional Specification

Author: Jamie Hawthorne

Supervisor: Greg Doyle

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Abstract

The purpose of this “Gym Analytics and Personal Training application” is to develop a mobile application for Android and iOS with two sections available to the public. Firstly, we have a client section to help the average person hire a personal trainer, purchase a workout plan whether it is a pre-made plan or a requested plan. The client also has the option to set motivational personal goals/ milestones for them to achieve.

Secondly, we have the trainer side of this application, it is here where a Personal trainer can grow their business by posting pre-made plans, create custom plans for clients, reach a wide range of potential clients and receive payments directly into their PayPal accounts.

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Project Description

The aim for this project is to create a cross platform application personal for both trainers and clients. The application should also include an accompanying dashboard for the Administrator. The application has three sections to it:

1. Client section
2. Trainer section
3. Administrator section

While in the client section a user will have the ability to view all available registered trainers and a brief list of their pre-made plans. Once a trainer is selected the user will be able to view all pre-made plans made by the selected trainer and either purchase one or request a custom plan. Once a plan has been purchased a new option appears on the user's homepage which is "Daily Workout". This section takes the purchased plan and breaks it down into its workouts for each day and displays that given day's work out. The client is also presented with a progress bar to show them how far along in the given day's work out they are as they can tick off exercises upon completion. While in the client section the user will have the ability to set personal milestones/goals to achieve that are only visible to them which they can tick off upon completion or remove them completely.

While in the trainer section a user will have the ability to view all clients who currently have selected them as their trainer along with the plan they are currently on. The user will also have the ability to CRUD plans and view requests for tailored plans made by potential clients. This application stands out from other personal training applications as it allows any certified personal trainer to begin growing a business from the comfort of their homes and will not require external payment links as this application will incorporate an in-app payments system (using stripe and PayPal sandbox).

While the administrator is logged in on the application, they will have the ability to view all clients and trainers currently registered with the app along with being able to send password reset requests. While on the dashboard the administrator will be granted the ability to view a wide array of information along with the ability to delete accounts, disable accounts and reset passwords.

All users will have the ability to upload a custom profile picture to personalise their homepage. The application should be user-friendly and easily used by all.

Users

This application will have two main user groups, Personal Trainers and Clients. These users will share similar aspects of the application however not all aspects will be the same as clients will not require the ability to receive payments, similarly trainers will not require the ability to hire a trainer. With both differing sufficiently they must be classified as two separate entities.

Personal Trainers

“A personal trainer is an individual who has earned a certification that demonstrates they have achieved a level of competency for creating and delivering safe and effective exercise programs for apparently healthy individuals and groups or those with medical clearance to exercise.” [1]

A trainer will be required to submit evidence of certification upon creating of their account (however for proof of concept a tick box will be used while registering to indicate if a user is a personal trainer or a client). With this gym analytics and personal training application, personal trainers will have the ability to safely guide clients to reach their goals and maximise results while also growing their business independently.

Clients

The “Clients” for this application can be anyone who is looking to hire a personal trainer to help them achieve their goals. The age of a client for this application will greatly range with the minimum client age being set at 16 as a general requirement for most gyms is the member must be over the age of 16. This will be enforced upon installation of the application as both the apple and android play store offer the option for an age restriction to be set. With this gym analytics and personal training application clients will have the ability to hire, learn from and communicate with personal trainers directly allowing them to get the best results and over all user experience.

Admin

The “Admin” for this application is the person who monitors the database and maintains the application. The Admin can:

1. Generate reset passwords links for users.
2. Disable accounts (server side).
3. View all users registered with the application.
4. Permanently delete accounts (server side).
5. View application usage in real time (server side).

Use Cases

System Use Case

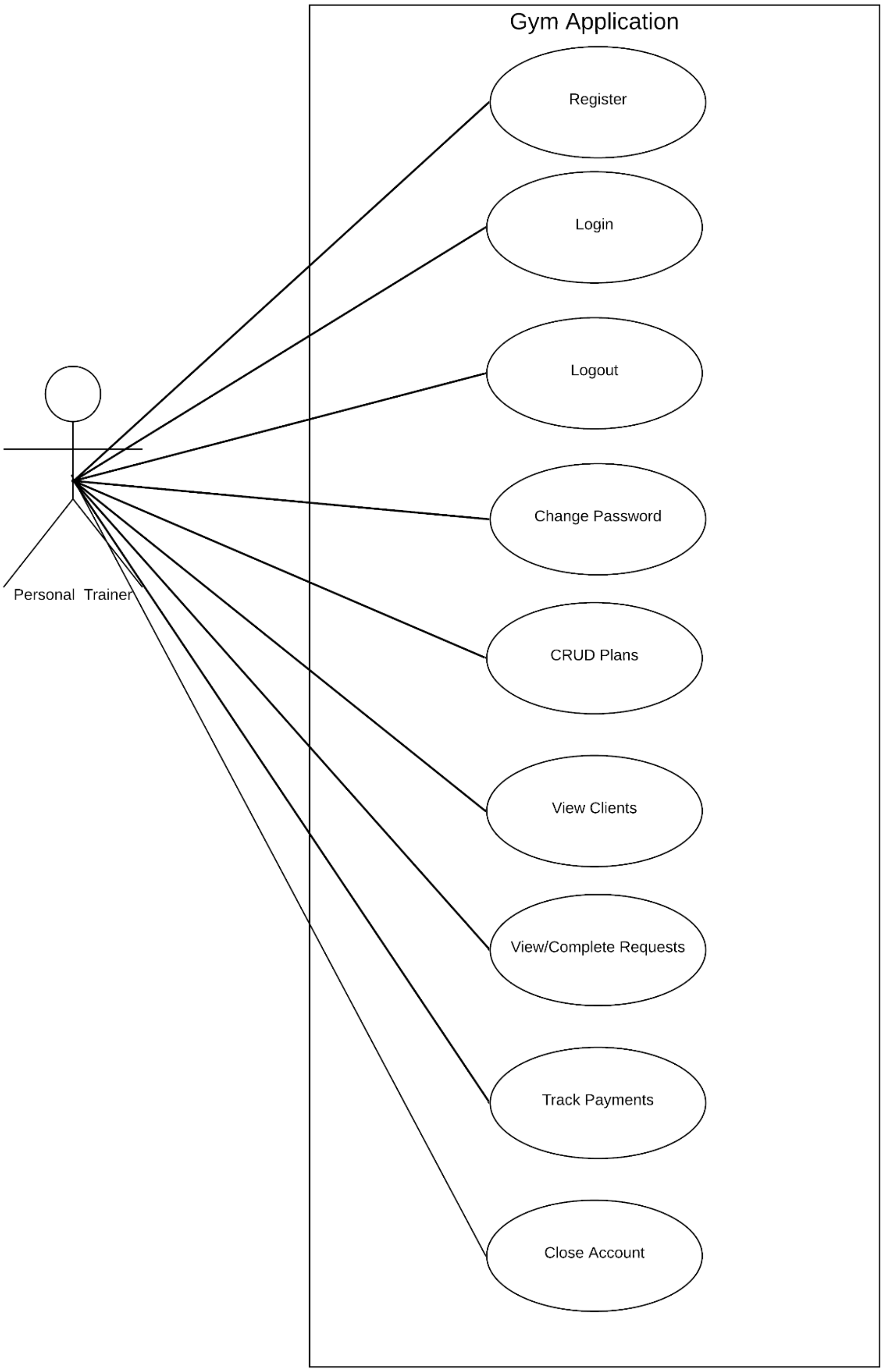

***Figure 1.** Personal Trainer use case*

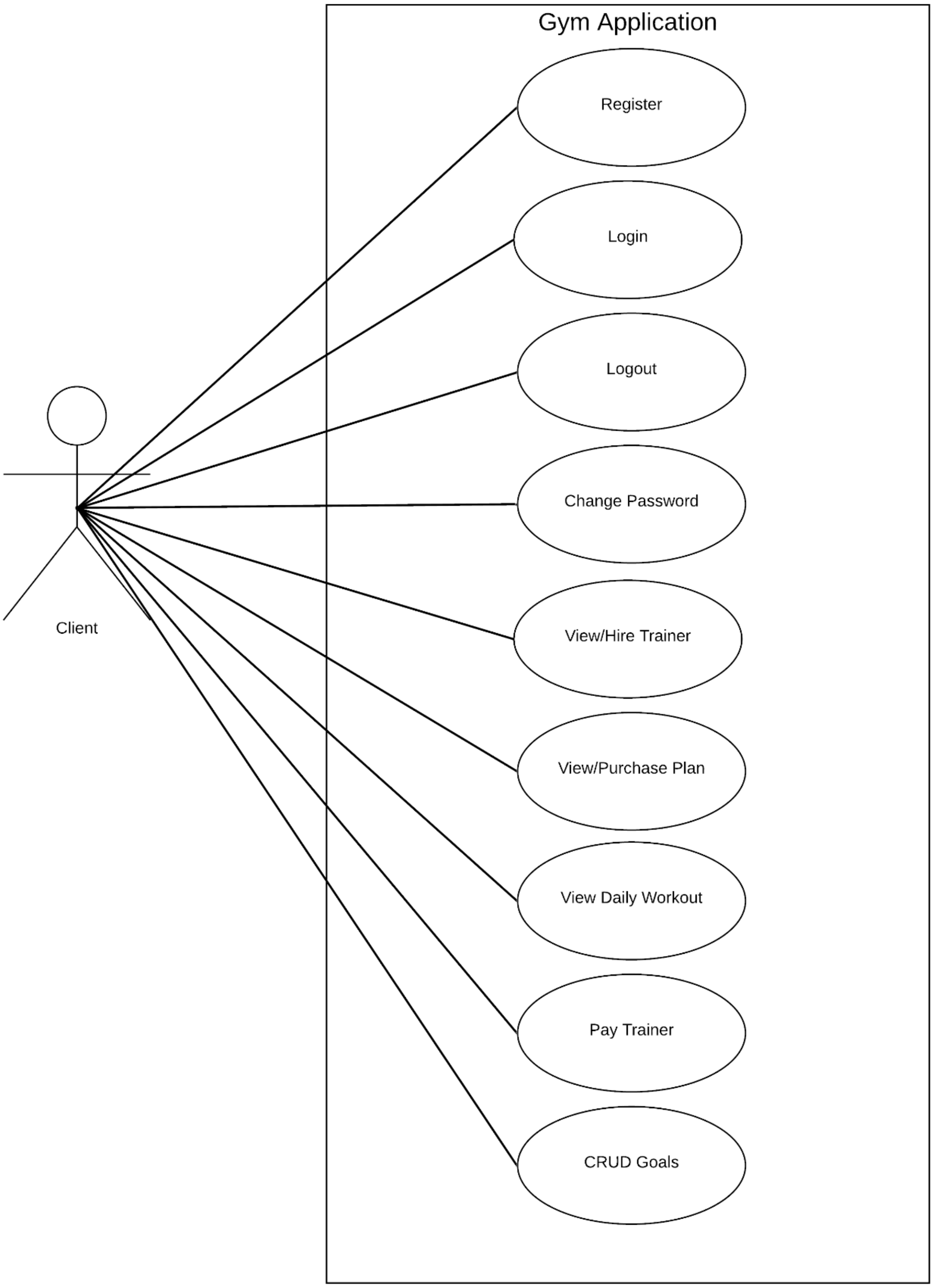

Figure 2. *Client use case*

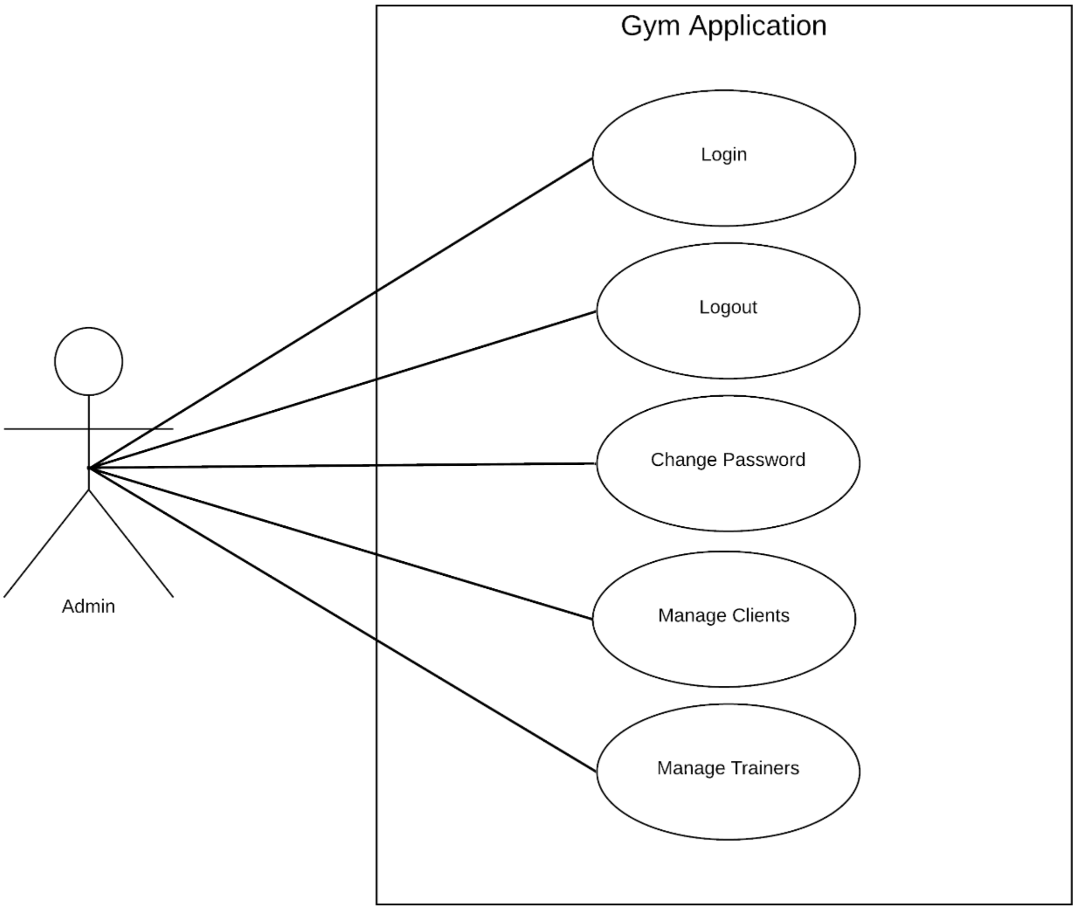

Figure 3. *Admin use case*

Individual use cases

NAME	**Register**
Actor	Personal Trainer, Client
Preconditions	The user has the application installed and has it open on their device.
Activity	1. The user is prompted to login or register or reset password. 2. The user selects register if they do not already have an account. 3. They will be prompted to enter a username, password, confirm password, email-address, tick field for Personal trainer or Client. 4. All information entered is sent to the secure database and profile is created.
Postconditions	The user has successfully registered their information with the application and account is created.
Alternative	1. Fields are empty. a) The user is prompted to complete all fields. 2. The username is taken. a) The user is prompted to choose a different username. 3. Passwords do not match. a) The user is prompted to re-enter passwords.

Figure 4. *Register use case*

NAME	Login
Actor	Personal Trainer, Client
Preconditions	The use has already registered with the application.
Activity	1. The user is prompted to login or register or reset password. 2. The user enters username and password. 3. The user clicks the login button once details entered. 4. The input is validated by the database. 5. The user is directed to their appropriate home screen.
Postconditions	The user has successfully logged in and is directed to home screen.
Alternative	1. The user's username or passwords are incorrect. a) The user is prompted to correct the entered details. 2. The details entered do not match any database records. a) The user is prompted to correct the details entered.

Figure 5. *Login use case*

NAME	Logout
Actor	Personal Trainer, Client, Admin
Preconditions	The user is already logged into the application.
Activity	1. The user navigates to the settings screen. 2. The user selects logout option. 3. The user is logged out and directed to login screen.
Postconditions	The user has successfully logged out and redirected to login screen.
Alternative	N/A

Figure 6. *Logout use case*

NAME	**Change password**
Actor	Personal Trainer, Client, Admin
Preconditions	The user is already logged into the application.
Activity	1. The user navigates to the settings screen. 2. The user selects change password. 3. The user enters new password and confirmation of new password. 4. The user’s password is changed, and database is updated.
Postconditions	The user’s password has successfully been changed.
Alternative	1. The user’s new password and confirmation do not match. a) The user is prompted that new password entries did not match. 2. The user cancels changing password. a) No changes are saved to database and user is brough back to home screen.

Figure 7. *Change password use case*

NAME	**Close Account**
Actor	Personal Trainer, Client
Preconditions	The User is already logged into the application
Activity	1. The user selects setting tab. 2. The user selects close account. 3. The user is prompted to confirm or cancel. 4. The user confirms closure. 5. The users account is closed. 6. Database is updated. 7. The user is navigated to the login screen.
Postconditions	The user is navigated to the login screen
Alternative	1. The user cancels the account closure. a) The user is redirected back to the appropriate home screen.

Figure 8. *Account close use case*

NAME	**CRUD plan’s**
Actor	Personal Trainer
Preconditions	The Trainer is already logged into the application.
Activity	1. The Trainer selects plans. 2. The trainer clicks the add plan button. 3. The trainer designs new plan. 4. Database is updated.
Postconditions	The Trainer has created a plan.
Alternative	1. The Trainer selects a plan to edit instead of adding a new one. a) The Trainer edits the plan and clicks save. 2. The Trainer selects a plan to delete instead of adding a new one. a) The Trainers plan is marked deleted to everyone besides people who have purchased it prior.

Figure 9. *CRUD plan’s use case*

NAME	**View clients**
Actor	Personal Trainer
Preconditions	The Trainer is already logged into the application
Activity	1. The Trainer selects clients. 2. The Clients list is displayed.
Postconditions	The Trainer can view their clients.
Alternative	N/A

Figure10. *Manage clients use case*

NAME	**Track payments**
Actor	Personal Trainer
Preconditions	The Trainer is already logged into the application
Activity	1. The Trainer selects payment tab. 2. The Trainer’s payments received are displayed,
Postconditions	The Trainer can view payments from the client on screen
Alternative	N/A

Figure 11. *Track payments use case*

NAME	Hire Trainer
Actor	Client
Preconditions	The Client is already logged into the application
Activity	1. The Client selects Trainers. 2. The Client selects a Trainer. 3. The Client can view plans and its cost. 4. The Client selects “Select Trainer”. 5. Database is updated.
Postconditions	The Client has hired a trainer
Alternative	1. The Client clicks back to view trainer list again and selects a different trainer. a) The Client can now view the new Trainers plans. 2. The client can choose not to hire a Trainer and return to home screen. a) The Client is returned to the home screen.

Figure 12. *Hire trainer use case*

NAME	Select plan
Actor	Client, Trainer
Preconditions	The Client is already logged into the application and has Selected a Trainer.
Activity	1. The Client selects plans. 2. The Client selects purchase plan. 3. The Client is direct to the payments page. 4. The Trainer receives Payment via PayPal. 5. The Clients current plan is updated. 6. Database is updated.
Postconditions	The Clients current plan is update.
Alternative	1. The Client already has a plan. a) The client selects a new plan and is prompted to confirm changing plan

Figure 13. *Select plan use case*

NAME	**Daily Workout**
Actor	Client
Preconditions	The Client is already logged into the application
Activity	1. The Client selects Daily Workout. 2. The Client is displayed the Daily Workout and their current progress to completing it. 3. The Client selects the exercise to mark it as completed. 4. Workout list and progress ring are updated. 5. Once workout is completed Client is notified, they are finished for the day.
Postconditions	The Clients Daily Workout is displayed
Alternative	1. The Client selects Tutorial link. a) The client is navigated to the website containing the tutorial. 2. The Client is on a rest day. a) The Client is shown 100% progress completed and informed it is a rest day. 3. The Client has completed their exercise for the day. a) The Client is indicated that the workout has been completed.

Figure 14. *view Daily workout*

NAME	CRUD goals
Actor	Client
Preconditions	The Client is logged in and on profile
Activity	1. The Client selects the goals tab. 2. The Clients goals are displayed along with a progress ring. 3. The Client selects the add button. 4. The Client enters goal. 5. The Client's goals are updated. 6. Database is updated.
Postconditions	The Client's goals are updated
Alternative	1. The Client selects a goal. a) The Client can see the entire goal and has the option to delete it. b) The Client selects remove goal. c) The Goal is deleted, and the database updated. 2. The Client ticks the goal marking it as completed. a) The Client database is updated. b) The Client progress ring is updated.

Figure 15. *CRUD goals use case*

NAME	Manage Clients
Actor	Admin
Preconditions	The Admin is logged in
Activity	1. The Admin selects manage Clients. 2. Active Client list is displayed to Admin.
Postconditions	The Admin is displayed with a list of all Clients.
Alternative	N/A

Figure 16. *Admin Manage Clients use case*

NAME	**Manage Trainer**
Actor	Admin
Preconditions	The Admin is logged in
Activity	1. The Admin selects manage Trainers. 2. Active Trainers list is displayed to Admin.
Postconditions	The Admin is displayed with a list of all Trainers.
Alternative	N/A

Figure 17. *Admin Manage Trainers use case*

FURPS+

FURPS is an acronym for Functionality, Usability, Reliability, Performance and Supportability. "**FURPS** is an acronym representing a model for classifying software quality attributes (functional and non-functional requirements)" [2] The original concept was developed by Robert Grady and Deborah Caswell at Hewlett-Packard. FURPS is widely used in the software industry as it can be used to easily outline many of the requirements of a given project. The + is used to outline non-functional requirements in any project such as design aspects and user interface.

Functionality

Functionality is the main functions or features in any application. In the Gym analytics and personal training application the main functions are as follows.

Create, Read, Update, Delete Plans

The ability of the trainer to be able to create, update, read and delete plans for clients to purchase.

Daily Workout

The ability of the client to view their scheduled daily workout.

View Clients

The trainer is given the ability to view their clients and the plans they are on.

Track Payments

Payments made to the trainers from clients should be tracked and made visible to the trainer. This should be displayed in a clear and understandable format.

Hire Trainer

The ability for the client to be able to hire a trainer to help them accomplish their goals.

Create, Read, Update, Delete Goals

The ability of the client to be able to create, update, read and delete personal goals visible to the client.

Pay Trainer

The client can pay a trainer they wish to hire/continue subscription internally.

Select A Plan

The client can select a plan they wish to undertake from the personal trainers list of offered plans.

Usability

Useability refers to the user experience with a given application. The user experience design may change over time due to continues feedback from users. The application should be easily accessible over all released platforms (iOS & Android). The application will be widely used, and ages will vary greatly therefor the application should be intuitive and easy to navigate through. Any given user should be able to navigate through screens in less than 20 seconds 95% of the time. Any given user should be able to register in less than 1 minute 90% of the time. Any given user should be able to login to the application within 10 seconds 99% of the time.

Reliability

Reliability refers to how stable and reliable the application is at any given time. A successful application should load without failure 99% of the time and recover from failure within 10 seconds 90% of the time.

Performance

Performance refers to how fast the application responds, processes, and retrieves data. This application should be able to handle multiple users simultaneously and can scale for new users at any given moment. To increase performance most applications, use locally storage until an upload, sync or save button is pressed. For my application since the same data point may be accessed by more than one persona the same time, I have opted to go with the save option. This means every time a change is made by the client or trainer it must be saved and pushed to the database instantly.

Supportability

Software Supportability is the capability of supporting a given software system/application throughout its whole product life. This application will be cross platform meaning it will be released on both iOS & Android. To ensure supportability updates should be released to all platforms simultaneously meaning well-structured and cross compatible code is an important factor in this application.

+

Security

The cloud database and connection to the application should be always secured as to not allow unauthorised access. The application takes in sensitive details from both clients (although not stored credit card details are entered by the client) and trainers (PayPal address are stored on the database).

Testing

Testing any application is of great importance to ensure reliability and functionality “The importance of software testing and quality assurance is of high value in a software development cycle. Both processes refine the whole process and ensure superior quality to the product. Also, it reduces maintenance costs and provides better usability and enhanced functionality. When software testing signs and push the individual components, quality assurance attests to the product- Fit for the purpose. “[3]

The testing of this application will be completed through a small number of friends, family and classmates.

Metrics

Metrics in relation to this project means how the success and failures of the application will be measured. Below shows the headings/topics in which I plan to measure the success of my project.

- ✓ The user’s ability to register.
- ✓ The user’s ability to login.
- ✓ The user should be able to smoothly navigate through the application.
- ✓ The application should display all data in a simplistic and understandable manner to all.
- ✓ The application should run on both iOS & Android.
- ✓ The client should be able to hire a trainer.
- ✓ The client should be able to CRUD personal goals.
- ✓ The client should have the ability to select a plan.
- ✓ The trainer should have the ability to view their client list.
- ✓ The trainer should have the ability to CRUD plans.
- ✓ The trainer should be able to track payments.

Bibliography

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Declaration

- I declare that all material in this submission, e.g., thesis/essay/project/assignment, is entirely my own work except where duly acknowledged.

- I have cited the sources of all quotations, paraphrases, summaries of information, tables, diagrams, or other material; including software and other electronic media in which intellectual property rights may reside.

- I have provided a complete bibliography of all works and sources used in the preparation of this submission.

- I understand that failure to comply with the Institute’s regulations governing plagiarism constitutes a serious offense.

Student Name: Jamie Hawthorne

Student Number: C00226160

Student Signature: Jamie Hawthorne

Date: 30/04/2021