

Independent Institution of Education Varsity College

Proactive™ – Taking Change Through Healthy Habits

By

**Dane Govender, Joshua Ashley, Keagan Thorp and
Gerard Govender**

**A Planning and Design document submitted in fulfilment
of the requirements for the Bachelor of Computer and
Information Sciences in Application Development
(BCAD0701) for the Open-Source Coding Module
(OPSC7311)**

School of Information Technology

Lecturer: Mr. Yusuf Paruk

Head of IT: Mr. Ebrahim Adam

2024

DECLARATION

I, Dane Govender, Joshua Ashley, Keagan Thorp and Gerard Govender declare that,

	SIGN
I have read the assessment rules provided in this declaration.	
This assessment is my own work.	
I have not copied any other student's work in this assessment.	
I have not uploaded the assessment question to any website or App offering assessment assistance.	
I have not downloaded my assessment response from a website.	
I have not used any AI tool without reviewing, re-writing, and re-working this information, and referencing any AI tools in my work.	
I have not shared this assessment with any other student.	
I have not presented the work of published sources as my own work.	
I have correctly cited all my sources of information.	
My referencing is technically correct, consistent, and congruent.	
I have acted in an academically honest way in this assessment.	

Dane Govender's Signature:

Date: 04 March 2024



Joshua Ashley's Signature:

Date: 04 March 2024



Keagan Thorp's Signature:

Date: 04 March 2024



Gerard Govender's Signature:

Date: 04 March 2024

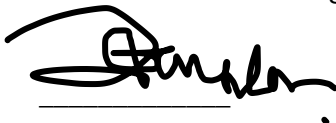


Table of Contents

Introduction	4
Application Overview	4
Requirements.....	6
Functional Requirements	6
User Authentication	6
Navigation Bar	6
Help Information	6
Account Management.....	6
Homepage Workout Viewing.....	6
Category Workout Plan.....	6
Timesheet Exercise Plan.....	7
Log Exercise Time	7
Progress Visualisation Charts	7
View Workouts and Exercises	7
Non-Functional Requirements.....	8
Scalability	8
Security	8
Performance	8
Usability.....	8
The Prototype Design and User Navigation	9
The Project Plan	17
Conclusion.....	17
References	18

Introduction

Team Proactive™ is a health and fitness company that makes it their goal to ensure that everyday people who struggle with their lifestyle can find new and innovative ways to take control of their health and better themselves for a brighter tomorrow. With the advancement of technology and mobile applications, **Team Proactive™** have decided to create an app that will allow users to choose healthy category workouts to complete at their respective gyms and will also allow them to time their workouts and keep a track record of all the progress they have made throughout their **Proactive™** journey. This has led to the decision to create the ultimate fitness time tacker app.

Introducing **Proactive™ : Taking Charge Through Healthy Habits!**

Throughout this document, multiple aspects will be reviewed such **as the overview of the application, the requirements of the application, the prototype design, and the team project plan**. All these aspects will link back to the information that was researched within the Research Document so that the best application can be created for our users.

Application Overview

Proactive™ is a mobile app for Android systems that will unite health and fitness users and ensure that they can take a **Proactive™** approach towards their life by choosing, working out, and logging workout categories with exercise timesheets to track and time their progress. The app will be created using the Kotlin programming language with Android Studio and Firebase Databases, making full use of an open-source environment for software development.

The team will have an incremental development foundation but will also incorporate agile methodologies to handle unforeseen changes. The application will make use of a monolith MVC approach. This will allow the team to work with a set plane that is ready for potential upsets, and an application that is layered and reliable. The scope of the project will span from the beginning of the semester until the POE documentation and application is due roughly in the middle of June.

Our project development phase approach is as follows:

- **Phase 1:** Research
- **Phase 2:** Plan
- **Phase 3:** Design
- **Phase 4:** Build
- **Phase 5:** Evaluate

When the project development phase is completed, the app will be put through the production phase and will be published to the Android Play Store.

The **Proactive™** icon design looks as follows:



As discussed in the Research Document, there were multiple innovative features of other existing mobile apps that stood out and interested **Team Proactive™** to use as foundational ideas in **Proactive™**.

These were some of the features that were chosen to be implemented in our app:

1. Customizable Workout and Timesheet Categories: Inspired by both Harvest, HubStaff and the Strong app, this feature allows users to categorize their activities, whether for fitness or work, which aids in detailed tracking and reporting.
2. Enhanced Timesheet Entries: Borrowing from Harvest and HubStaff's detailed time tracking, **Proactive™** users should be able to log detailed workout times, descriptions, and categories, providing a comprehensive overview of their fitness regimen alongside their professional tasks.
3. Visual Progress and Time Tracking: Like Strong's progress graphs, visual representations of time spent on workouts, as well as professional tasks, would be a motivational tool and help users stay on track with their fitness and productivity goals.
4. Integrated Photo Log: Taking cues from Harvest's ability to attach receipts, **Proactive™** users could attach photos to each workout entry for a visual record of their progress, like form improvements or completion of routines.
5. Adjustable Daily Fitness and Work Hour Goals: Drawing inspiration from Harvest's project time estimations, **Proactive™** could allow users to set minimum and maximum daily workout goals, promoting a balanced approach to fitness and work.
6. Reviewable Historical Entries: Both apps offer history viewing capabilities, so **Proactive™** should provide a chronological log of workouts and timesheets, with filters for custom time frames and easy access to attached photos.
7. Categorical Time Analysis: Leveraging Harvest's reporting features, **Proactive™** would enable users to see how much time they're dedicating to each workout category, assisting in fitness focus Adjustments.
8. Workout Consistency Graphs: In line with Strong and Harvest's graphical feedback, **Proactive™** could offer graphs to show workout consistency, overlaying daily goals to provide insight into how users are meeting their fitness targets.
9. Goal Achievement Visualization: Like the visual project budget tracking in Harvest, **Proactive™** could provide a visual representation of staying within fitness and work hour goals over a set period, encouraging users to maintain a balanced lifestyle.

Requirements

Functional Requirements

The functional requirements will describe the actions that the system will perform based on user decisions and actions made to the system. These will include:

User Authentication

- The system will allow users to register as new members. They can register with their email address.
- The system will allow registered users to login and logout with their existing accounts. Login will require these email and password fields.
- The system will store users in a Firebase Authentication Database.

Navigation Bar

- The system will display a navigation bar along the bottom of the screen to help the user move between screens and sections of the application.
- The system will display 5 navigation bar items, separating the system into 5 main aspects: **Home Page, Workout and Exercise Creation Page, Progress Visualization Page, Specific Time Period Workout** and **Exercise Viewing Page, and Account Page.**

Help Information

- The system will display help screens for specific screens that may cause confusion or could possibly contain some ambiguity. These screens will help for user understanding and clarification.

Account Management

- The system will allow users to enter new details about their account such as their first name, last name, gender, and birthdate.
- The system will allow users to view their account details and make changes to certain fields and save those changes.
- The system will allow users to delete their account.

Homepage Workout Viewing

- The system will include a homepage that will show the workout plans that include any exercises for that specific date.

Category Workout Plan

- The system will allow users to create their own custom workout plans. Workout plans include fields such as a unique ID, a category name, and a category description. Workout displays will also include an overall exercise progress bar.
- The system will allow the users to edit workout descriptions and delete their chosen workout plans.
- The system will store the workout plans in a Firebase Database.

Timesheet Exercise Plan

- The system will allow users to add a workout category to create their own custom exercise plans. Exercise plans include fields such as a unique ID, an exercise name, and an exercise description, information about how to complete the exercise, optionally an exercise photograph, a date of exercise, the dates start time, the dates end time, and an exercise category. Exercise categories that users will choose from will include **cardio, core, arms, back, chest, legs, and full body**. Exercise displays will include a log time button to enter progress.
- The system will allow the users to edit specific fields about their exercises as well as delete their chosen exercise plans.
- The system will allow users to view their exercise information using modern and sleek UI techniques along with complementary visual aid (**gamification**).
- The system will store the workout plans in a Firebase Database.

Log Exercise Time

- The system will allow users to log their exercise time, and this will increase the overall workout progress bar (**gamification**).
- The log page will allow users to view their minimum and maximum daily goals so they can see whether they have exercised between these goal hours, or if they have failed to meet the goals by either exceeding or sub seeding the required times.

Progress Visualisation Charts

- The system will give the option to enter in a date range to view the daily progress chart in which they will enter their start and end date to view a bar chart visual presentation of the total hours exercised within this time, along with a bar of their min goal, max goal, and their actual daily time for every day within the date range.
- The system will group the total hours of minimum goals, maximum goals, and logged times for all exercises with the same recorded date as a date in the range to collect the exact values for each minimum, maximum, and daily hour bar for the chart.
- The system will also display a monthly progress chart in the form of a calendar that will tick off days when the daily goals were met by being between the min goal and max goal. Other days will be left as blank or ‘-’ (**gamification**).
- The system will allow users to select what month they can view to see all related monthly progress history (**gamification**).

View Workouts and Exercises

- The system will allow users to choose between workouts and exercise to view from and select a date range to view all the items selected within a chosen period.
- The system will display workouts with the total time collected from all logged exercises within that workout along with exercises depending on user choice.

Non-Functional Requirements

Scalability

- The system will make use of storing data in a Firestore NoSQL database which will implement flexibility and scalability of data and especially unstructured data. (Firebase, 2024)
- The system will make use of Firestore and Firebase, allowing for automatic horizontal scaling when more users become active on the system. (Firebase, 2024)

Security

- The system will make use of storing data in a Firestore database and Firebase Authentication table, ensuring that security is kept through encrypted data between https user sessions. (Firebase, 2024)
- The system will make sure that any database persisted data will be linked to each user's account and not public, preventing the leaking of personal information to other users.

Performance

- The system will make use of storing data in a Firestore database and Firebase Authentication table, known for its high-quality reliability and performance. (Firebase, 2024)
- The system will make sure that operations and user actions are completed with the least amount of delay to maximise user experience through performance.
- The system will make use of asynchronous programming methods to effectively update the UI with database changes.


Usability

- The system will make use of modern design principles and effective colour schemes to ensure the user interface is simple and easy to use.
- The system's interactable components will be responsive to let the user know exactly when a user action has been made.
- The system will provide users with help information to guide them through any uncertainties.

The Prototype Design and User Navigation

Pro Active™

Splash Screen



Components:

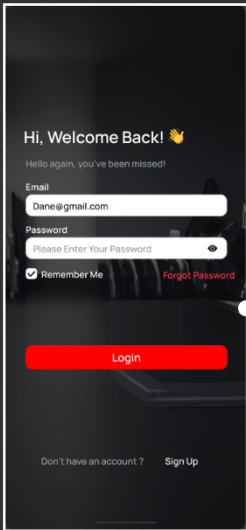
- TextView

User Description:

This is just a splash screen so no user action is needed. Users are greeted with the apps logo.

Pro Active™

Login Page



Components:

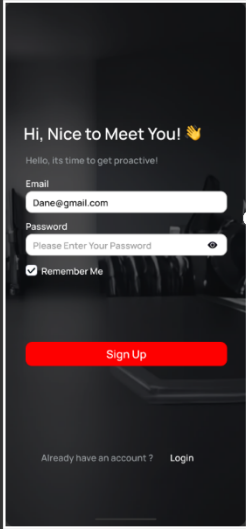
- Textviews
- EditTexts
- PasswordView
- Buttons
- CheckBox

User Description:

On this screen users will be able to log into their existing account if they have created one previously. They tick the "Remember Me" box so they don't have to log in every time they leave the app. If the user is new to the app they can tap the Sign Up button on the bottom of the screen and create an account. If the existing user has forgotten their password they can select the "Forgot Password" button and proceed to the process of resetting their password.

Pro Active™

Register Page



Hi, Nice to Meet You! 🙌
Hello, its time to get proactive!

Email
Dane@gmail.com

Password
Please Enter Your Password

☒ Remember Me

Sign Up

Already have an account ? Login

Components:

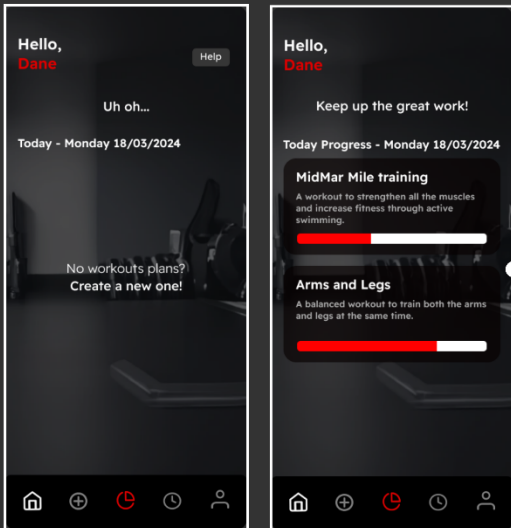
- Textviews
- EditTexts
- PasswordView
- Buttons
- CheckBox

User Description:

On this screen new users will be able to create an account for the Proactive app where all their workout data will be saved and ready for them to utilise again. They tick the "Remember Me" box so they don't have to log in every time they leave the app. If the user has an account already they can tap "Login" on the bottom of the screen

Pro Active™

Home Page



Empty

Hello, Dane Help

Uh oh...

Today - Monday 18/03/2024

No workouts plans?
Create a new one!

Populated

Hello, Dane

Keep up the great work!

Today Progress - Monday 18/03/2024

MidMar Mile training
A workout to strengthen all the muscles and increase fitness through active swimming.

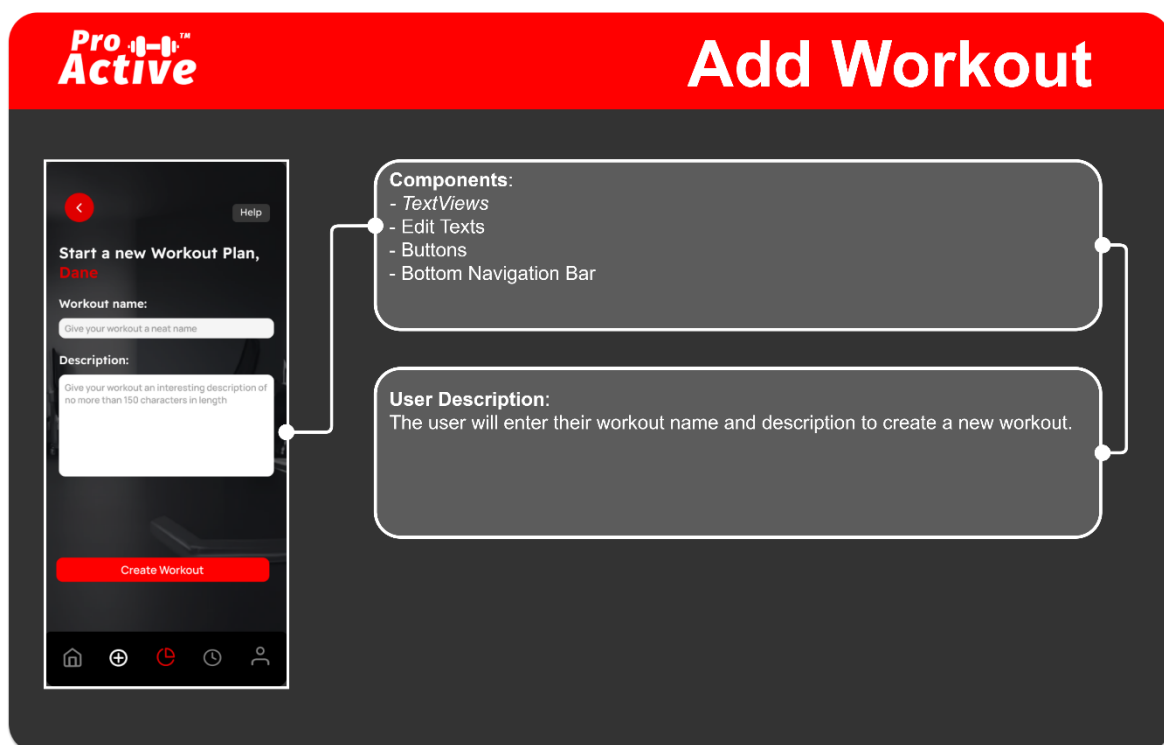
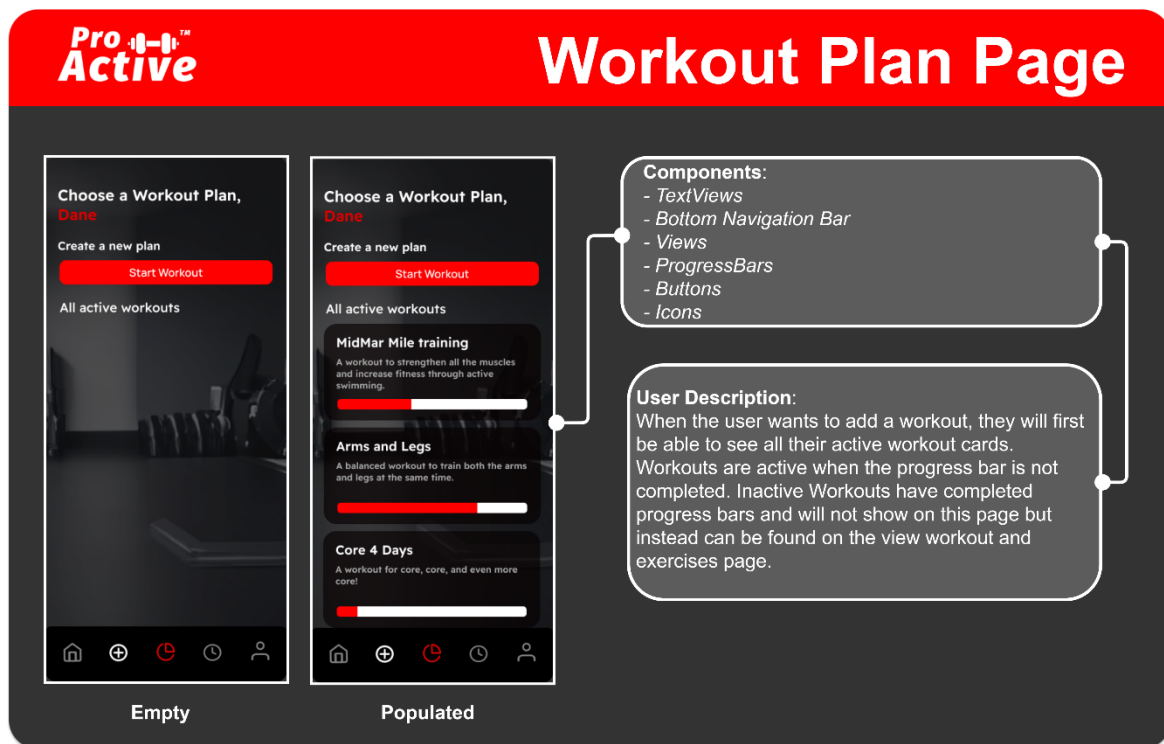
Arms and Legs
A balanced workout to train both the arms and legs at the same time.

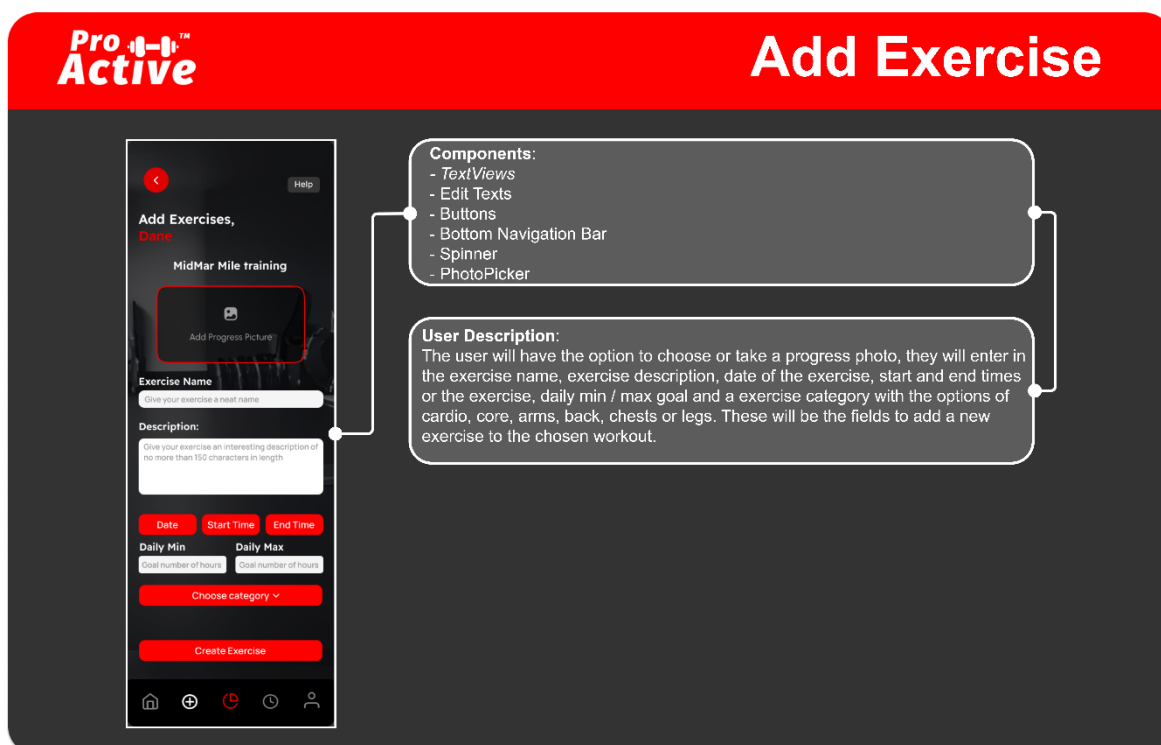
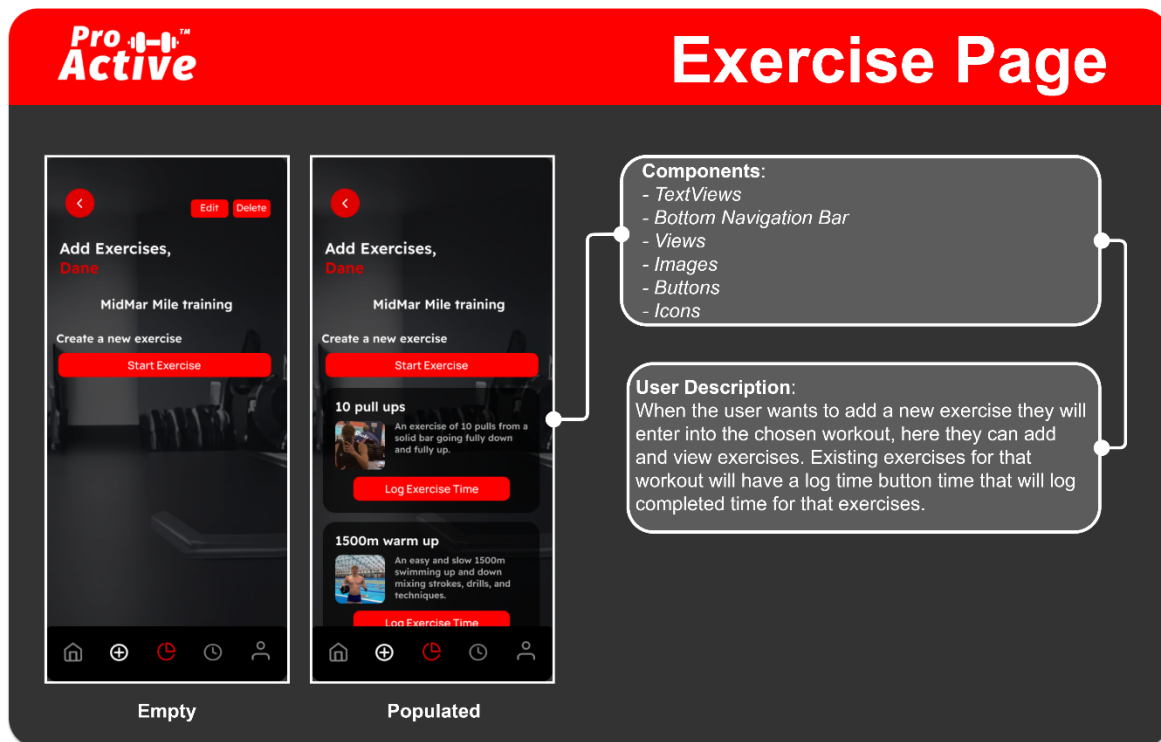
Components:

- TextViews
- Bottom Navigation Bar
- Views
- ProgressBars
- Buttons
- Icons

User Description:

The user will be greeted with their home screen, home screen will show a list of workout cards that include any exercises with dates that include the current date. Essentially the user will see all workouts with exercises that they will have to do today





ProActive™

View Exercise

Logged

Not Logged

Components:

- Bottom Navigation Bar
- Buttons
- TextViews
- Views
- Images
- Drawable Resources

User Description:

The user can view their exercise with a visual format, it will display the exercise date, a tick or cross if they have completed the exercise, the time it took to complete the exercise, the category and the stats, they can also edit or delete the exercise.

ProActive™

Log Exercise

Proceed

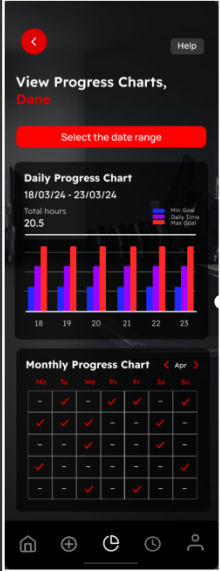
Components:

- Bottom Navigation Bar
- Buttons
- EditText / Spinner
- Views

User Description:

The user can log an exercise with the time it took to complete the exercise. They can view the exercise name and the daily min / max goals.

ProActive™
Progress Chart



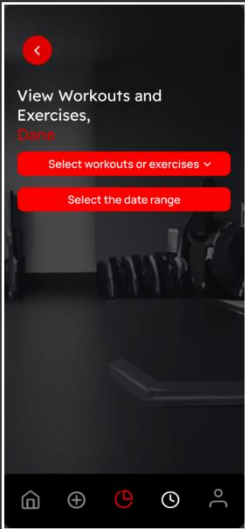
Components:

- Bottom Navigation Bar
- Buttons
- Views with Drawable Resources / Graphs

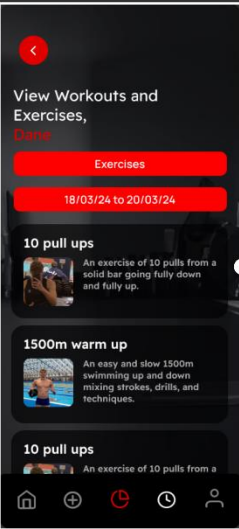
User Description:

The user can view 2 progress visualisation charts (Daily Progress chart and Monthly Progress chart). The Daily progress chart requires user input of a date range to display a bar chart of the daily minimum goal, daily maximum goal and daily accumulated logged time for that date. The Monthly progress chart displays all days where the user logged a daily time that was between the daily min / max goals with a tick in the form of calendar chart.

ProActive™
View Workouts & Exercises



Empty



Exercises

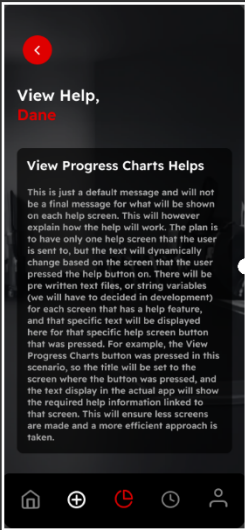
Components:

- TextViews
- Bottom Navigation Bar
- Views
- Images
- Button with Date Picker
- Spinner
- Buttons
- Icons
- Drawable Resources

User Description:

The user will choose between workouts or exercises and a date range to view all (active / inactive) workouts or exercises between the desired date range. If workouts are chosen the total hours of logged time will be displayed.

Pro Active™
Help Page



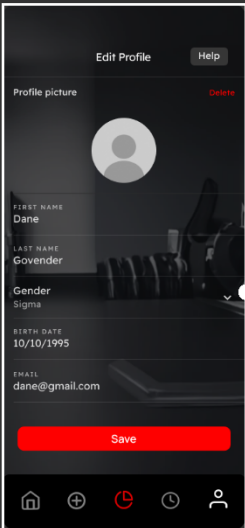
Components:

- Bottom Navigation Bar
- TextView
- Button

User Description:

On the Top Right of every screen there will be a Help Button which leads them to the Help section of the current screen they are on. On this Screen users will be directed on how to navigate through the apps quirks and features.

Pro Active™
Profile Page

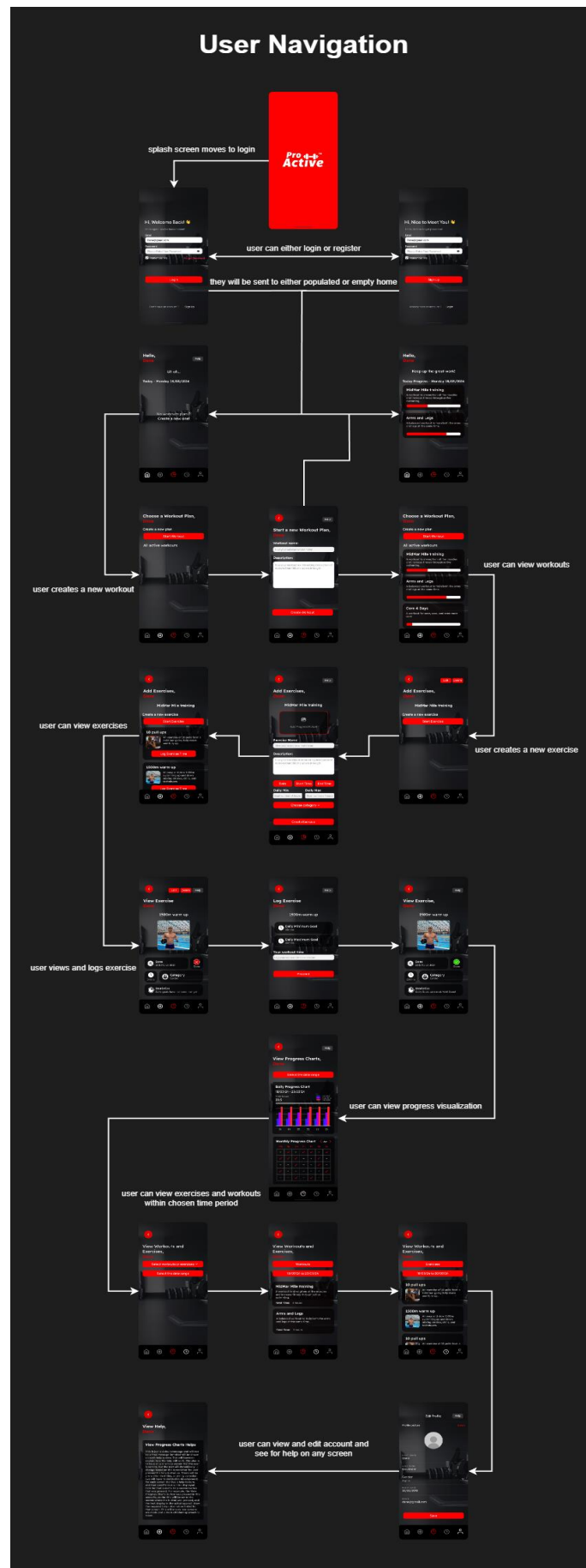


Components:

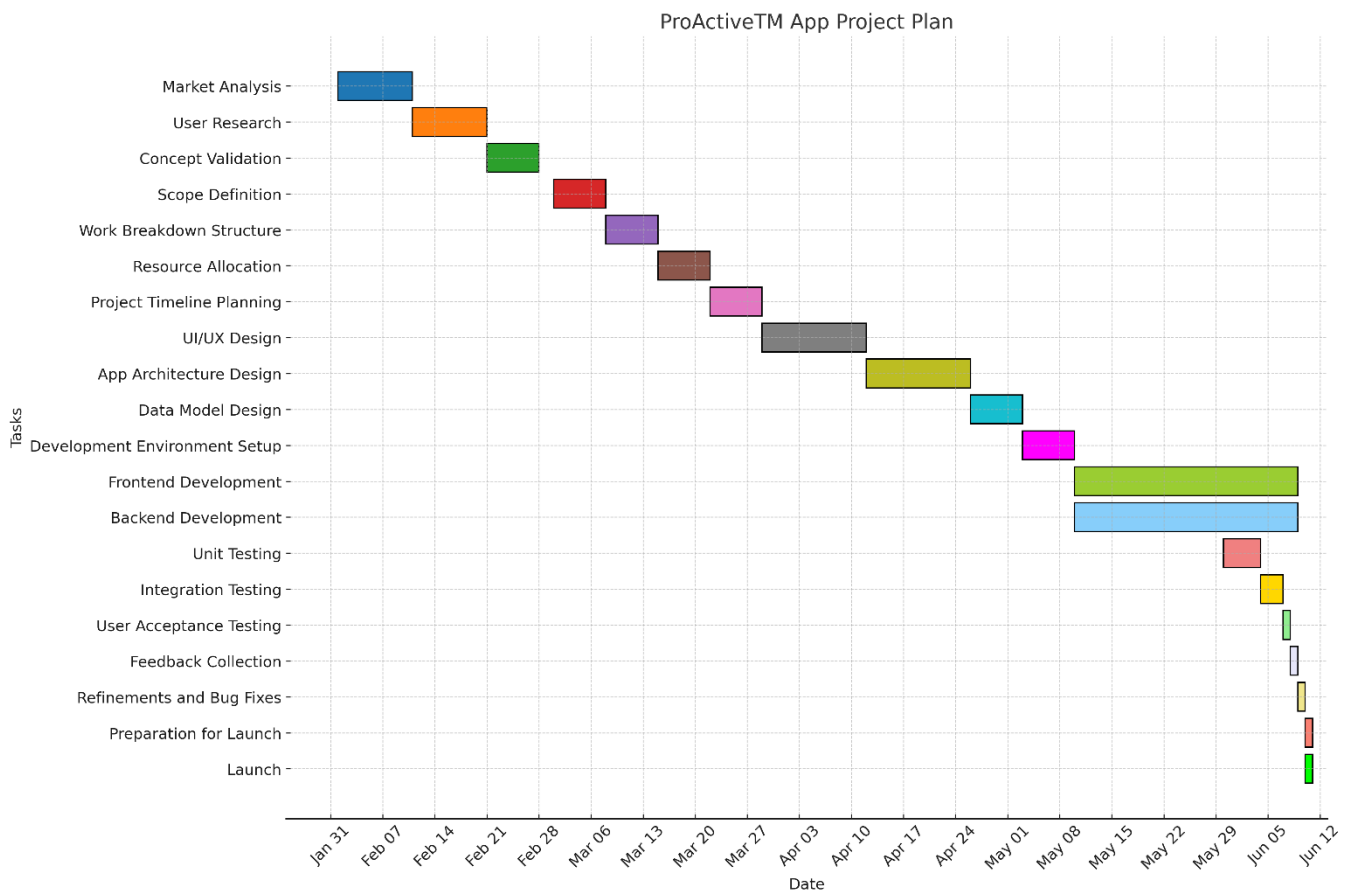
- Bottom Navigation Bar
- Spinner
- Buttons
- TextViews
- EditTexts
- Photo Picker
- Date Picker

User Description:

The Edit Profile Page is used to change information details pertaining to the User. Here users are able to add a Profile Picture, change their Name and Surname set their Gender and birthday



The Project Plan



Conclusion

In conclusion, this document has created a solid foundation and set the stage for the next phase of **Proactive™** development: Build. Without completing this research and design, the planning, scope, and overall team understanding of how the system will work would not be strong enough for the next phase because collaboration, teamwork, and knowledge are of the utmost importance when entering this new section of development. This foundation will keep us firm for the rest of this systems development life cycle and will ultimately benefit our final product soon. **Team Proactive™** look forward to beginning our next phase.

References

Drawio. 2024. Drawio, 2024. [Online]. Available at: <https://app.diagrams.net/> [Accessed 23 March 2024].

Figma. 2024. Figma, 2024. [Online]. Available at: <https://www.figma.com/file/el1s7gijrcDyq7rXr9v3j5/ProActive-Prototype?type=design&node-id=0%3A1&mode=design&t=qnqhMi7D2JdhGsw8-1> [Accessed 23 March 2024].

Firebase. 2024. Firebase Performance Monitoring, 19 March 2024. [Online]. Available at: <https://firebase.google.com/docs/perf-mon#:~:text=Firebase%20Performance%20Monitoring%20is%20a,data%20in%20the%20Firebase%20console>. [Accessed 23 March 2024].

Firebase. 2024. Privacy and Security in Firebase, 19 March 2024. [Online]. Available at: <https://firebase.google.com/support/privacy#:~:text=Firebase%20services%20encrypt%20data%20in,Cloud%20Firestore> [Accessed 23 March 2024].

Firebase. 2024. Scale with Multiple Databases, 19 March 2024. [Online]. Available at: <https://firebase.google.com/docs/database/usage/sharding> [Accessed 23 March 2024].

Gantt.com. 2024. What is a Gantt Chart?, 2024. [Online]. Available at: <https://www.gantt.com/> [Accessed 23 March 2024].