SOFTWARE ENGINEERING

ASSIGNMENT 1

GROUP : Q

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**FITNESS TRAINING APP**

**REQUIREMENT SEPECIFICATION**

**REPORT**

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# Introduction

The purpose of this Software Requirements Specification (SRS) document is to outline the requirements for a fitness training app. The app will provide users with personalized workout plans, progress tracking, and community features to support them on their fitness journeys. The app will be accessible on both iOS and Android platforms, and will have a user-friendly interface with an emphasis on a positive user experience. This SRS document will serve as a reference for the development team, providing a comprehensive overview of the app's features, functionalities, and requirements.

## Purpose

The Fitness Training App has been designed with the goal of providing a comprehensive and personalized solution for users to achieve their fitness goals. The app will offer a range of features and functionalities to support users on their fitness journeys, including personalized workout plans, progress tracking, and community features. The personalized workout plans will be tailored to each user's specific fitness goals and level of ability, ensuring that users get the most out of their workout sessions and make progress towards their goals.

The progress tracking feature will allow users to monitor their progress over time, helping them to stay motivated and on track. The community features, such as the ability to connect with other users and participate in challenges, will provide users with the support and accountability they need to stay committed to their fitness goals. The app will be accessible on both iOS and Android platforms, providing users with the flexibility to use the app whenever and wherever they want. Additionally, the app will prioritize a positive user experience, with a user-friendly interface and intuitive navigation to help users stay motivated and engaged. The overall purpose of the Fitness Training App is to provide users with the tools and resources they need to achieve their fitness goals and live a healthier, more active lifestyle.

## Intended Audience and Reading Suggestions

Intended Audience: The Fitness Training App is intended for individuals who are interested in improving their fitness and health. This includes individuals who are just starting their fitness journeys, as well as those who are experienced gym-goers looking for a more personalized and convenient solution. The app is intended to be used by people of all fitness levels and ages, and is designed to be accessible and user-friendly.

Reading Suggestions: This Software Requirements Specification (SRS) document is intended for a wide range of stakeholders, including the development team, project managers, quality assurance testers, and potential investors. For the development team, this document will provide a comprehensive overview of the app's requirements and specifications, serving as a reference for the development process. For project managers, this document will provide an understanding of the scope and requirements of the project, helping to ensure that the development process stays on track. For quality assurance testers, this document will outline the expectations for the final product, providing a basis for the testing and verification process. Finally, for potential investors, this document will provide a clear understanding of the app's capabilities and potential, helping to inform investment decisions.

## Project Scope

The Fitness Training App is designed to provide users with personalized workout experiences. The app will be accessible through mobile devices and will feature customizable workout plans, progress tracking, and goal setting features. The app will require an internet connection to be fully functional. Users will be able to create profiles, set their fitness goals, and receive customized workout plans based on their fitness level, experience, and preferences.

Our system Features:

* User profile creation and management
* Goal setting and progress tracking
* Customized workout plans and routines
* Exercise demonstration videos and instructions
* Integration with wearable fitness tracking devices
* Nutritional tracking and meal planning
* Social features for motivation and accountability, such as the ability to share progress with friends or join fitness challenges
* Technical Requirements:
* Mobile platform compatibility (iOS and Android)
* User-friendly interface
* Secure user data storage and management
* Regular software updates to enhance the user experience and fix bugs.

**Project Timeline:**

A rough project timeline will be provided once the project requirements have been finalized and the development team has been assembled.

**Project Cost:**

The project cost will be determined based on the final project scope and the resources required to complete the project. The project budget will be approved by the stakeholders before the start of development.

# **Overall Description**

This section will explain the aspect fitness training system and requirement.

## Product Functions

Product Functions of Fitness Training System

1. **User Profile Creation and Management**: The system will allow users to create a personal profile and manage their account information, such as their personal details, fitness goals, and progress.
2. **Goal Setting and Progress Tracking**: The system will provide users with the ability to set and track their fitness goals, including weight loss, muscle building, or overall fitness improvement. The system will also allow users to track their progress and monitor their results over time.
3. **Customized Workout Plans and Routines**: The system will provide users with personalized workout plans and routines based on their fitness level, experience, and goals. The workout plans will be updated regularly to ensure users are able to progress and reach their goals.
4. **Exercise Demonstration Videos and Instructions**: The system will include demonstration videos and instructions for each exercise in the workout plans, providing users with clear and detailed information on how to perform the exercises correctly.
5. **Integration with Wearable Fitness Tracking Devices**: The system will allow users to integrate with wearable fitness tracking devices, such as smartwatches and fitness trackers, to provide a more comprehensive and accurate view of their fitness progress.
6. **Nutritional Tracking and Meal Planning**: The system will provide users with the ability to track their nutrition and plan their meals to ensure they are fueling their bodies with the right nutrients to support their fitness goals.
7. **Social Features for Motivation and Accountability**: The system will include social features to provide users with motivation and accountability, such as the ability to share their progress with friends, join fitness challenges, and receive support from a community of like-minded individuals.

# Operating Environment

1. **Hardware**: The Fitness Training System will be designed to work on a range of hardware devices, including smartphones, tablets, and desktop computers. The system will require a device with a minimum of 2GB RAM, an internet connection, and a display screen of at least 720p resolution.
2. **Operating Systems**: The Fitness Training System will be compatible with the following operating systems:

* iOS: iOS 11 or later
* **Android**: Android 5.0 or later
* **Windows**: Windows 10 or later
* **MacOS**: MacOS 10.15 or later

1. **Browsers**: The Fitness Training System will be compatible with the following web browsers:

* Google Chrome
* Mozilla Firefox
* Microsoft Edge
* Apple Safari

1. **Software**: The Fitness Training System will require a modern web browser and an internet connection to be fully functional. The system will be designed to work with wearable fitness tracking devices and will be compatible with popular fitness tracking software, such as Google Fit and Apple Health.

# **Assumptions and Dependencies**

Various assumptions and dependencies are went into the creation of this project in order to ensure that system works safely and effectively.

## Assumptions:

1. **User Availability**: It is assumed that the users of the Fitness Training System will have access to the required hardware and software, as well as a stable internet connection, to use the system effectively.
2. **User Adherence**: It is assumed that users will follow the workout plans and nutrition guidelines provided by the system and that they will be committed to reaching their fitness goals.
3. **User Feedback**: It is assumed that users will provide feedback on the system and that the feedback will be used to make improvements and enhance the user experience.

## Dependencies:

1. **Hardware Dependency**: The Fitness Training System will depend on the availability of compatible hardware devices, such as smartphones, tablets, and desktop computers, to be fully functional.
2. **Software Dependency**: The Fitness Training System will depend on the availability of compatible web browsers and internet connectivity to be fully functional.
3. **Third-Party Integration**: The Fitness Training System will depend on the availability of third-party software and hardware, such as wearable fitness tracking devices, to provide a comprehensive and integrated fitness solution to users.
4. **Data Availability**: The Fitness Training System will depend on the availability and accuracy of user data, such as workout plans, progress, and nutritional data, to provide personalized and effective fitness training to users.

# **Functional Requirements**

| **Requirement** | **Description** |
| --- | --- |
| User Management | The system shall allow users to create an account, log in, and manage their personal information, including their name, address, email, and password. |
| Workout Plan Generation | The system shall provide users with personalized workout plans based on their fitness goals, experience level, and available equipment. |
| Exercise Library | The system shall include a comprehensive library of exercises, including images, descriptions, and video tutorials, to help users perform exercises correctly and safely. |
| Progress Tracking | The system shall allow users to track their progress, including their weight, body fat percentage, and measurements, and view progress graphs and charts. |
| Nutritional Guidance | The system shall provide users with personalized nutritional guidance, including calorie and macronutrient goals, and allow users to track their food intake and view progress charts. |
| Workout Reminders | The system shall allow users to set workout reminders and notifications to help them stay on track and reach their fitness goals. |
| Wearable Integration | The system shall be compatible with wearable fitness tracking devices, such as smartwatches and fitness bands, and allow users to import data from these devices into the system. |
| Social Sharing | The system shall allow users to share their progress, achievements, and workouts with friends and family on social media platforms, such as Facebook and Instagram. |
| Goal Setting | The system shall allow users to set and track fitness goals, including weight loss, muscle gain, and overall fitness improvement, and provide users with feedback on their progress. |
| Video Library | The system shall include a library of instructional videos and tutorials to help users improve their form and technique and prevent injury. |
| User Feedback | The system shall allow users to provide feedback on the app, including suggestions for improvement, bug reports, and general feedback, and the feedback will be used to make improvements and enhance the user experience. |
| Accessibility | The system shall be designed to be accessible to users with disabilities and shall comply with accessibility standards, such as the Web Content Accessibility Guidelines (WCAG) 2.0. |
| Data Backup | The system shall securely backup user data, including workout plans, progress, and nutritional data, to minimize the risk of data loss or theft. |
| Data Privacy | The system shall be designed to protect user privacy and shall comply with data privacy regulations, such as the General Data Protection Regulation (GDPR). |
| Support and Maintenance | The system shall be designed to be easy to maintain and upgrade and shall include ongoing support and maintenance to ensure the system remains up-to-date and functional. |

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# **Non Functional Requirements**

## Performance requirements:

| **Requirement** | **Description** |
| --- | --- |
| Performance | The system shall have a fast and responsive user interface and shall be capable of handling large amounts of data efficiently. |
| Scalability | The system shall be designed to be scalable and shall be capable of supporting an increasing number of users without compromising performance. |
| Security | The system shall be designed to be secure and shall protect user data, including personal information, workout plans, and progress, from unauthorized access and theft. |
| Usability | The system shall be easy to use and shall have a user-friendly interface that allows users to navigate the app and access features quickly and easily. |
| Reliability | The system shall be reliable and shall have high availability, with minimal downtime, to ensure users can access the app and their data whenever they need to. |

## Safety requirements:

| **Safety Requirements** | **Description** |
| --- | --- |
| Exercise Safety | The system shall provide users with accurate and safe information on exercise performance and technique to prevent injury and promote safe training practices. |
| User Health Information | The system shall allow users to provide information on their health history, including any pre-existing conditions or injuries, and use this information to provide safe and appropriate workout recommendations. |
| Equipment Safety | The system shall provide information on the safe use of fitness equipment and help users to avoid equipment-related accidents and injuries. |
| Emergency Assistance | The system shall provide users with emergency assistance information and guidelines for seeking medical help in case of injury or health-related emergency. |
| Professional Supervision | The system shall recommend that users consult with a qualified healthcare professional, such as a doctor or personal trainer, before beginning a new exercise program or making significant changes to their training routine. |

### Security Requirements

1. **Data** **Security**: The system shall be designed to protect user data, including personal information, workout plans, and progress, from unauthorized access and theft.
2. **Secure** **Login**: The system shall implement secure authentication and authorization processes, such as two-factor authentication, to ensure that only authorized users can access the app and their data.

#### Software Quality Attributes:

| **Quality Attributes** | **Description** |
| --- | --- |
| Functionality | The system shall provide users with the functionalities required to achieve their fitness goals, including workout plan generation, progress tracking, and nutritional guidance. |
| Usability | The system shall have a user-friendly interface and shall be easy to use, allowing users to navigate the app and access features quickly and easily. |
| Reliability | The system shall be reliable and shall have high availability, with minimal downtime, to ensure users can access the app and their data whenever they need to. |
| Performance | The system shall have a fast and responsive user interface and shall be capable of handling large amounts of data efficiently. |
| Security | The system shall be designed to be secure and shall protect user data, including personal information, workout plans, and progress, from unauthorized access and theft. |
| Maintainability | The system shall be designed to be easy to maintain and upgrade and shall include ongoing support and maintenance to ensure the system remains up-to-date and functional. |
| Portability | The system shall be designed to be portable and shall be compatible with a range of devices, including smartphones, tablets, and personal computers. |
| Interoperability | The system shall be designed to work with other fitness tracking devices and apps, such as wearable fitness trackers, to provide users with a comprehensive fitness tracking solution. |
| Testability | The system shall be designed to be testable and shall include automated testing tools and processes to ensure the quality and reliability of the system. |
| Documentation | The system shall include comprehensive documentation, including user manuals, tutorials, and technical specifications, to help users understand how to use the app and troubleshoot any issues. |

# **References**

# References

(n.d.). Retrieved from https://reference.jrank.org/fitness/Fitness

(n.d.). Retrieved from https://reference.jrank.org/fitness/Fitness\_Apps.html#:~:text=The%20purpose%20of%20a%20fitness,to%20download%20from%20the%20internet.

(n.d.). Retrieved from https://developer.android.com/reference/app-actions/built-in-intents/health-and-fitness

*Fitness App*. (n.d.). Retrieved from wikipedia: https://en.wikipedia.org/wiki/Fitness\_app

*Health and fitness*. (n.d.). Retrieved from developer android: https://developer.android.com/reference/app-actions/built-in-intents/health-and-fitness