SOFTWARE REQUIREMENTS SPECIFICATION

FOR

Gym Management System

Prepared By : AS Group-5

Faculty of Science, University of Peradeniya

Content

INTRODUCTION

Purpose

The main objective of this document is to illustrate the requirements of the gym management system project. The document gives the detailed description of the both functional and non-functional requirements proposed by the client (fit & lift gym center). The purpose of this project is to provide a friendly environment to maintain the details of instructors (trainers) and trainees. The main purpose of this web application project is to maintain an easy circulation system using computers and mobile. This web application describes the hardware and software. Gym management system provides the benefits of streamlined operations, enhanced administration & control. Gym Management system is powerful, flexible and easy to use and is designed and developed to deliver real conceivable benefits to Gym owners.

Description

Fit & lift is a web application to help fitness trainers and their clients to build strong and achieve goals like making the figure of the customer base from "fit & lift" and promoting a healthy lifestyle for them. By considering individual trainees and instructors we can identify 2 main types of clients. They are individual trainers, individual trainees. This is the basic categorization of the client base of Fit & lift gym management system project. Mostly individual trainees are the set of customers who will be expected to work using this project directly. Hence, we need to have a proper focus on them when creating the project. We are planning to divide the services provided for the customer base into subcategories like full body workouts, lower body workouts, ab workouts, chest workouts, arm workouts, leg and shoulder workouts etc. separately with two levels; beginner level and intermediate level, as customer expectations are always different from one to another. Through this categorization, we expect to provide our services in an effective and efficient way.

Project Scope

This process involves the preparation of a detailed description of the project and its major deliverable. The scope clearly states what the project is supposed to achieve and what it cannot accomplish. The supporting documents are reviewed to ensure that the project will deliver work in line with the stated goals. When referring to scope of the project; the main goal of initiating such a project is to maintain the fitness of the trainees. It includes objectives such as getting schedules and recommended workouts from trainers, getting a summary, tracking body stats etc. Features such as schedules, workouts, nutrient plans, training, assessments, statistics, banking processes etc. are included within the application. But units such as medical advice are excluded. In addition, handling the budget and working according to the schedule with a deadline are also included.

Definitions and Abbreviations

JAVA - Programming Language

SQL- Structured query Language

HTML- Hypertext Mark-up Language

ER- Entity Relationship

UML - Unified Modeling Language

IDE- Integrated Development Environment

SRS- Software Requirement Specification

References

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PROJECT ARCHITECTURE AND DESCRIPTION

Project Framework

What the user sees & interacts with
HTML,CSS,JavaScript
Frontend

Contains App Logic
PHP,JavaScript, Python,Java

Database
MySQL , MongoDB

Backend

Users

Internet

Application Architecture
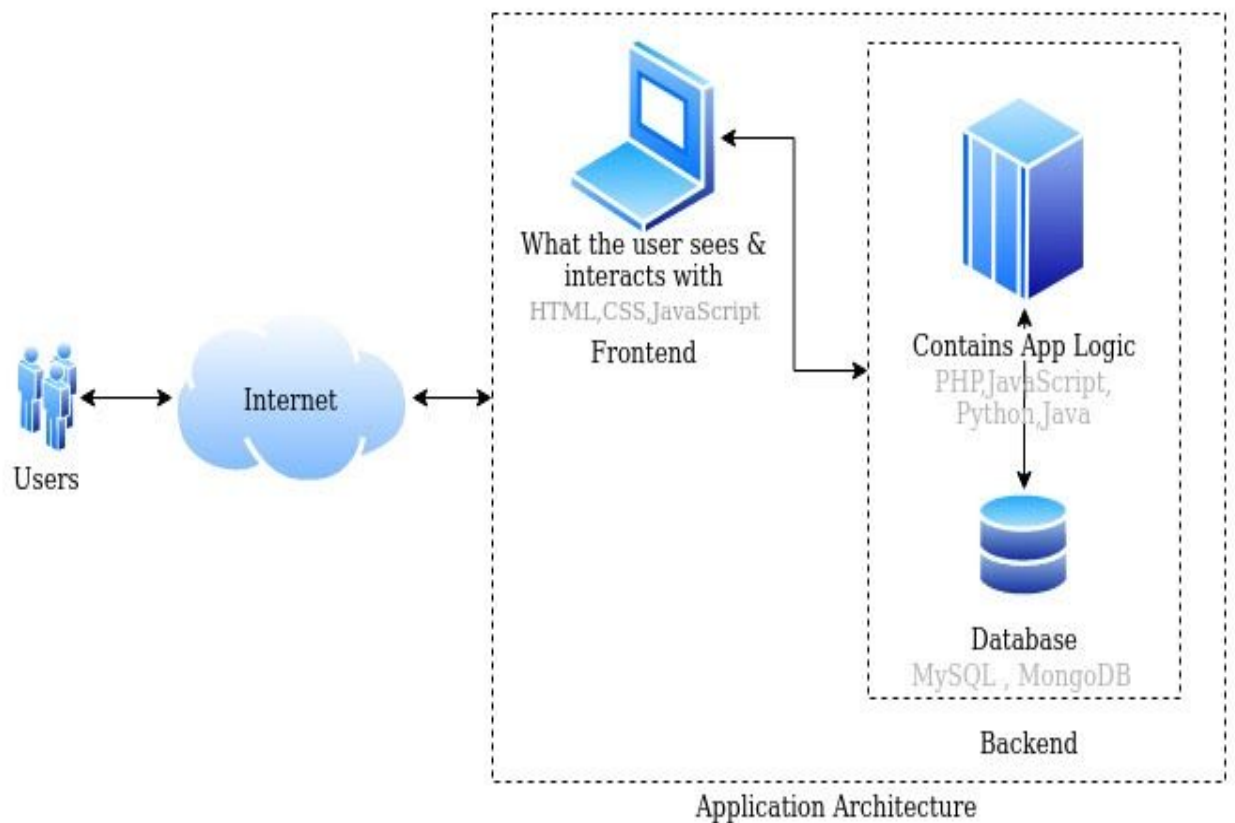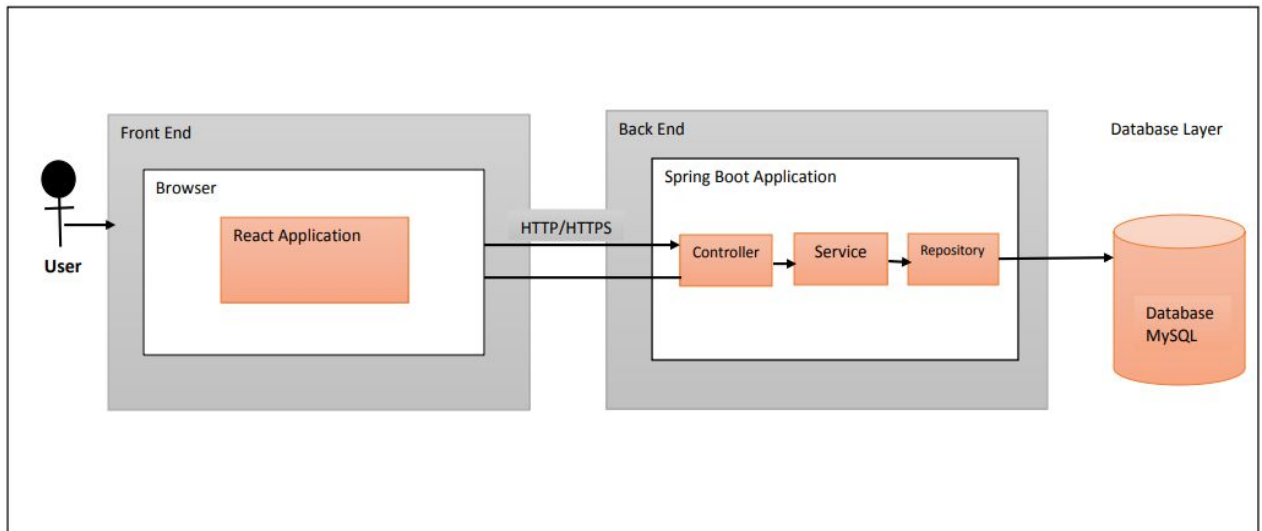
That is the diagram of the basic overview for the web application of the fit & lift gym center. In here, both trainees and trainers can be users of the system. Users access the GUI (Graphical User Interface) through the internet. GUI is the frontend of this diagram. The users join to this web application via their personal account by using their own usernames and passwords. If the users request to know about workouts or nutrient plans or anything related to the gym center, the backend response to the browser. The backend provides data to the frontend. Backend contains all the algorithms of the system.

Operating environment

That is a web application for the fit and lift gym center. Specially, it will proceed in a windows environment. Mainly the operating system will develop on windows 7 or higher operating system. It will operate in various browsers such as, Google chrome and internet explorer. In here, the version of the internet explorer should be about 11.0 or higher.

The hardware required for the gym management system is,

- ❏ Processor - intel Core i5 or up
- ❏ Processor speed - 2.4GHz
- ❏ RAM - 8GB
- ❏ Hard disk – 500GB

Also, it will use the database like MySQL. Moreover, Angular will be used as the frontend to develop this web application whereas Spring boot (Java-based) will be used as the backend to develop this. And also, this web application will be hosted through Heroku (PaaS). The main input devices required are mouse, keyboard and output devices are monitor and printer. Specifically, printer support to provide the schedule plan for users.

General Constraints

- The ability of the software to interface with an online database must be implemented.

- The software must be able to access the devices GPS to offer location based functionality.

Assumptions & Dependencies

Assumptions:

- Users must have the basic knowledge of English.

- Users should have their own usernames and passwords to enter their online accounts and do actions.

- Users will only be permitted to register and gain access to the software once they agree to the terms of service agreement.

- The system is running 24 hours a day.

- This system provides quick transactions.

Dependencies :

- If no exercise routines are created by users, there will be no routines listed in the application for users.

- If no internet connection is available, users will be unable to log in or access any functionality of the software.

- The new users are to be recorded to the database and the data entered must be correct.

FUNCTIONAL REQUIREMENTS

Here describes the possible effects of a software system. That means what the system must accomplish.

GYM Management system

The system should have the capabilities just like the person of this system has the power to look
at instructors (trainers) and trainees. The main users of this application are trainers and trainees.

Trainers– Instruct to perform various exercises, monitor client's progress and adapt programs and give
trainees information about nutrition.
Trainees -individual trainees are the set of customers who will be expected to work using this app directly
and can get instructions from the trainers.

There are various requirements that are needed for both trainers and trainees. These requirements are
collected from all the stakeholders of the project and have been categorized under two main types. That
is the instructors' requirements and trainees requirements.

➔ Trainer Requirements
➔ Trainee Requirements

Actors	Trainers – Instruct to perform various exercises, monitor client's progress and adapt programs and give trainees information about nutrition.
	Trainees -individual trainees are the set of customers who will be expected to work using this app directly and can get instructions from the trainers.

Trainer Requirements

Fitness Trainers are taking a large portion from our client base. All the requirements of these trainers are listed down which makes it easier to identify what they actually want from this app. There are three main types of Trainer requirement documents which are,

➔ Trainer Profile Requirement
➔ Trainer Schedule Requirement
➔ Chatting Requirement

User Type (As a)	Epic	User Story (I want to..)	Expected outcomes (So that ..)
Trainer	profile requirements	I want to customize the profile as I	I can choose appropriate trainees and see the profile.
	Sign in	I want to sign in as a new trainer with the software	I can get new username and password to access the system
	Log in	I want to log into the system using my username and password	I can view the dashboard to manage everything
		I want to reset my password, when I forget it	I can use a new password
	Schedule Requiremen	I want to display work and time schedules for trainees.	I can make quick and easy navigation between different routines and can display available time slots.
	Chatting Requirement	I want to contact trainees	I can take necessary actions Immediate and can make changes.

Trainee Requirements

Trainee Requirements Fitness Trainees are taking a large portion from our client base. There are two types

of trainees which are club trainees and individual trainees.

There are seven main types of Trainee requirement there are,

- ➔ Trainee Profile Requirements
- ➔ Trainee Schedule Requirements
- ➔ Workout Requirements
- ➔ Nutrients Plan Requirements
- ➔ Payment Requirements
- ➔ Chatting Requirements

User type (As a)	Epic	User Story (I want to..)	Expected Outcome (So that..)
Trainee	Profile requirement	I want to customize the profile as I wish	When the profile is customized according to the parameters such as weight, height and disabilities etc. it will help to choose the appropriate training program.
	Sign in	Facility to sign via social media accounts	So that no need to fill every detail in the registering process.
	Log in	Set up a username and a password.	So that no data loss will happen even if we lose the current device.
		Facility to reset the password.	So that even if I forget the password I can reset it any login again.
	Schedule requirement	Many pre planned schedules by the trainers and ability to choose a custom schedule of my own.	So that I can select schedules managing my time without interrupting daily routines.
	Work out requirement	I want to have many different workouts like full body, lower body, ab	So that I can choose the appropriate plans by considering my goals and targets.

		workouts, arm, leg and shoulder workouts.	
	Nutrient plan requirement	I want to have proper nutrient plans according to data I included in my profile.	So that I won't face any nutrient deficiencies while carrying out the work outs.
	Payment requirement	Facility to pay via online payment methods.	So that I can transfer money easily and efficiently.
			I can manage future payments with my progress in training and my salary.
		I want the records of previous and future payments.	I can refer to the records if there is any trouble related to the previous payments I made.
			I can manage future payments with my progress in training and my salary.
	Chatting requirement	Chat with trainer	I can report my progress and ask for further instructions.
			Discuss about the troubles faced while carrying out the workout.
			Delivering feedback for the trainer.

NON FUNCTIONAL REQUIREMENTS

Performance Requirement

A performance requirement is a statement that describes how well a function is to be executed or achieved, or how well it is to be accomplished. The system should be high in speed,accuracy,storage and reliability.this system should be able to handle failures and errors.

- ❏ Response time-Average response time no longer than 2 seconds
- ❏ Capacity-The system must support 1000 people at a time.
- ❏ Recovery time-If there is a system failure, the system should recover its operations within 20 seconds.But the average repair time shall be 30 minutes.
- ❏ User interface-User interface screen will respond within 7 seconds

The system should be available at any time,meaning the user can access it.

Security Requirements

- ● System will use a secured database
- ● All users have access constraints
- ● Poor user authentication should be provided.
- ● Users can just read information but they cannot edit or modify anything and only client can change the information.

Software Quality Attributes

➔ Reliability
- ● The system should be extremely reliable,with minimal crashes and downtime.
- ● In the event of a crash or any other error,the system should inform the user of any problems and gracefully terminate
- ● We can assure reliability by making websites robust,recoverable and available under adversity.

➔ Maintainability
- ● Instructors will have the right to change their company details according to their current situation.
- ● This Identify improvement areas as well as determine the value supplied by current applications or during development changes.
- ● The application shall be modified by the developers if the application is found to have a bug.
- ● The application shall go through detailed testing to determine the reliability and security of the application
- ● Agile software development require a continuous collaboration between all people involved in the project with planning,managing and monitoring

- Project can't be finished in a few weeks,so the development team keeps updated and present parts of the product as the project continues within a documentation which helps avoid any issues that waste the clients money and time.For instance,the developer could complete the order process and present it during a periodic review.

➔ Usability
- The application is user friendly and no prior knowledge is required to access it.
- Simple and easy to use
- But user should be able to relate further action needed for an interaction
- There is no any ambiguity regarding the consequences of an action

Requirement Attributes

- The user be able to easily download and install the system
- The application should be easy to use/user friendly
- The project should be open source
- Only the multiple admins will have the right to create changes to the system.But the users cannot do changes

Safety requirement

- The system should be secure enough so that personal data may not disclosed inappropriately or unauthorized.The access permission for the system data may only be changed by the system's owners.
  .
- No one should be able to hack users' passwords.
  .
- Proper user authentication should be provided
  .
- Normal users can just read information but they cannot edit or modify anything except their personal and some other information
- Data will be backed up at first point of uploading to the system
  .

User Requirements

The users of the system are trainees and trainers of the GYM who act as administrator to maintain the system. The users are assumed to have basic knowledge of the use of the system and internet.The proper user interface, user manual, online help and the guide to install and maintain the application must be sufficient to educate the users on how to use the web application without any problems.

The application provides some details to the users in the form of,
- Backup and Recovery
- Forgot Password

- Data migration
- Data replication-if the data is lost, it is still stored with the server
- Auto Recovery -frequently auto saving the information
- The application must be maintained regularly and it has to be updated from time to time.

Business Rules

Business rules are anything that captures and implements business policies and practices.A rule can implement business policy, make a decision or input new data existing data. Business rules include the laws and regulations that the users of the GYM management system should comply with. Not only that the cost of the project and the discounts given are covered. Illegal rules protocols should be avoided by consumers.

EXTERNAL INTERFACE REQUIREMENT

External interface requirements specify the hardware, software, or database components that a system or component should interface with the system.
This section provides information to ensure that the system communicates properly with the external components of the gym management system.

Requirements for Deployment

Software configuration

This system is developed using the java environment/java platform.The backend is developed using java spring boot and the frontend using angular.The database developed using SQL server.this system is web based.Therefore software needs HTML supporting web browsers with a good internet connection as well as the system compatible with windows operating system.

Hardware Configuration

Processor speed - 2.4GHz
RAM - 8GB
Hard Disk-500GB

Communications Interfaces

This project supports all types of Web browsers. Users can connect with the system using browser & internet once the user login, users can easily order hardware items..

Graphical User Interface Requirements

The software provides a good graphical user interface for the user and allows the administrator to function in the system and perform essential functions such as viewing, updating, and viewing the gym management system.

- It facilitates user verification and search based on various criteria.
- The user interface must be customizable by the administrator.
- All modules provided with the software must comply with this graphical user interface and comply with the defined standard.
- The design should be simple and follow a variety of interface standards.

- The user interface shall offer the user a logical representation of what the software is asking the user to do. Dropdown menus and buttons should be used where possible to aid the user. Input hints shall be used to aid the user when entering data.
- The application should have its logo present on each screen once a logo has been designed.

● A user friendly color scheme should be chosen, UI design should be carried out with visually impaired and color blind users in mind.

● The UI should have well defined constraints to ensure that the software displays correctly on the screens of all compatible devices. The UI should display in both portrait and landscape.

● The GUI should have continuity, all screens should have the same design and layouts should be consistent, all screens should have the same design and layouts should be consistent.

UI mock diagram
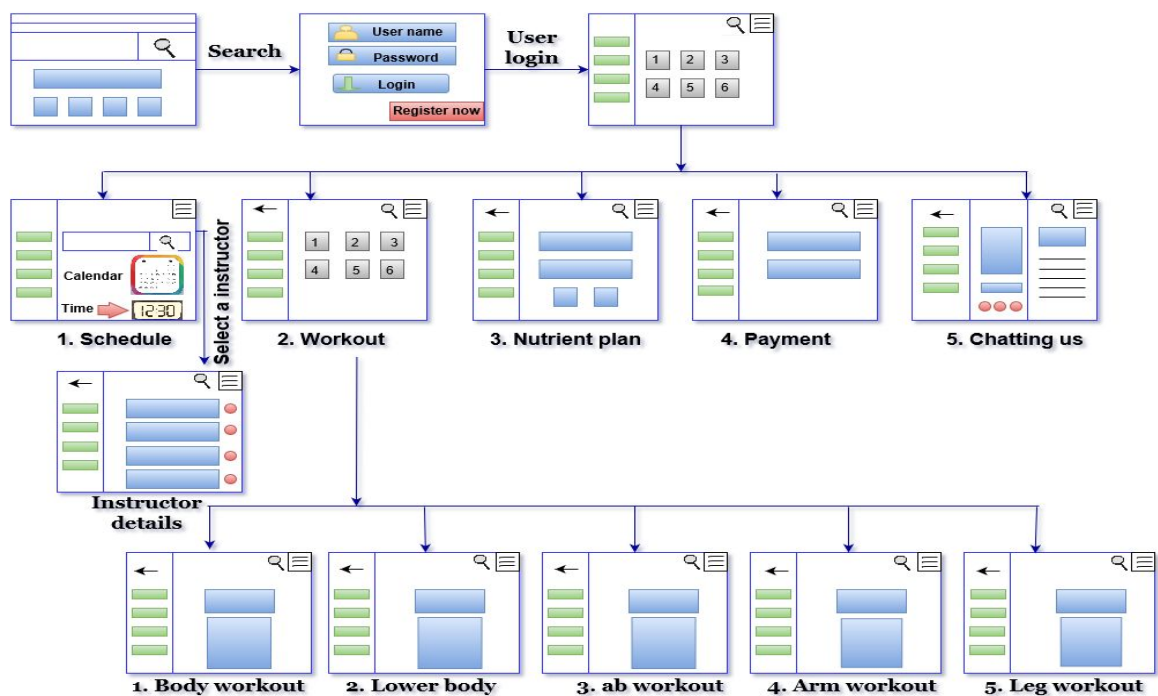
Software interfaces requirements

Sharing data between two or more systems has always been a fundamental requirement of software development.