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| **1 INTRODUCTION**  **1.1 Design Overview**  We are going to use an object-oriented approach towards development of various design components for various features like GPS based virtual tracking, Reminders and schedulers, motivational quotes, analytics based on calorie and food intake,danger alerts,etc  **1.2 Requirements Traceability Matrix**  A matrix showing where each feature identified in the SRS is supported by the design components is displayed below.   |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | **Menu Bar** | **DateTimePicker** | **MLEngine** | **Graphs** | | **Reminders and Schedulers** | **X** | **X** |  |  | | **Recommendations** | **X** |  | **X** |  | | **Motivational Quotes** | **X** |  |  |  | | **Analytics** |  |  |  | **X** |   **2 SYSTEM ARCHITECTURAL DESIGN**  **2.1 Chosen System Architecture**  We will use client-server architecture for our fitness management system as it splits the processing of application across multiple machines and allows easier sharing of resources from client to servers. .  **2.2 Discussion of Alternative Designs**  The alternative is peer-to-peer networking where every computer is "equal" and every computer is both a client and a server but it won’t serve our purpose in the first sense.  **2.3 System Interface Description**  Amazon Sagemaker will be used as an MLEngine. GraphQL library will be used to draw various charts and graphs.The system clock will be used to set reminders and schedulers and various motivational quotes will be generated based on user likes and preferences.  **3 DETAILED DESCRIPTION OF COMPONENTS**  **3.1 Component-1**  **Menu bar**  It will contain all the major functionalities of the website including but not limited to Reminders and Schedulers , Recommendations , Motivational Quotes ,etc One of the major constraint is it is to be designed using the bootstrap library.  **3.2 Component-2**  **ML Engine:**  The amazon web services sagemaker will be used as an ML Engine to cater to one of our functionalities of recommendation system**.**  **3.3 Component-3**  **DateTimePicker:**  The latest Bootstrap 4 DateTimePicker will be used that will provide us with a beautiful and intuitive time system **.**  **3.4 Component-4**  **Graphs:**  The d3.js and chart,js library will be used to represent various graphs that will track user workout routine and provide detailed and analysed reports to the user.  **4 USER INTERFACE DESIGN**  In this section describe the design of the user interface in detail.  **4.1 Description of the User Interface**  **4.1.1 Screen Images**          **4.1.2 Objects and Actions**  Objects:Challenges, Reminders and Schedulers,Chat system,Login,Logout,etc  Actions: Start challenge, End Challenge,Chat,Login,Logout,etc.  **5. System Architecture**  **5.1.1 Chosen System Architecture**  Client/server architecture is a computing model in which the server hosts, delivers and manages  most of the resources and services to be consumed by the client. This type of architecture has one  or more client computers connected to a central server over a network or internet connection.  This system shares computing resources.  **Use Case ID: 1**  Use Case name: Signup/Login  Created by: SF Team  Last Updated by: SF Team  Created on: 30/08/2018  Last Updated on: 15/10/2018  Primary Actor: User  Secondary Actor: -  Description: This is used for registering new user into the system through Signup option or log  into account through Login option if already a user.  Trigger: When user lands on the website or is logged out of system.  Preconditions: -  Postconditions: A new user is registered or gets redirected to the workouts page.  Normal flow:  1. User will enter the credentials. The credentials will be checked against the ones in the database  Alternative flows:  1. Signup/Login Page is displayed.  2. If wrong username-password combination is encountered, display error message.  Exceptions: -  Includes: Registration  Priority: High  Frequency of use: Medium  Special Requirements: - None  Open Issues: - None  Assumptions: - None  Notes and issues: Forgot password left for future scope.  **Use Case ID: 2**  Use Case name: Challenges  Created by: SF Team  Last Updated by: SF Team  Created on: 12/09/2018  Last Updated on: 15/10/2018  Primary Actor: User  Secondary Actor: -  Description: Used to perform challenges  Trigger: User needs to click on the challenges link.  Preconditions: User must be logged in  Postconditions: Database is updated  Normal flow:  1. User can directly access challenges by clicking on challenges link on the navbar of homepage.  If the user is registered then he can access the challenges page and his progress will be stored.  Alternative flows: -  Exceptions: -  Includes: -  Priority: Moderate  Frequency of use: Moderate  Special Requirements: - None  Open Issues: - None  Assumptions: -None  **Use Case ID: 3**  Use Case name: Workout  Created by: SF Team  Last Updated by: SF Team  Created on: 12/09/2018  Last Updated on: 15/10/2018  Primary Actor: User  Secondary Actor: -  Description: User will be given a workout plan based on his/her fitness goal.  Trigger: As soon as the user signs up or logs in.  Preconditions: User must be logged in  Postconditions: Progress report is updated.  Normal flow:  1. User lands on the sign up or login page and enters his/her details.  2. After all details are validated the workout page will be shown.  Alternative flows: Once the user is logged in he can access the workout page from any other  page.  Exceptions: -  Includes: -  Priority: High  Frequency of use: High  Special Requirements: - None  Open Issues: - None  Assumptions: User enters authentic details about his physique.  **Use Case ID: 4**  Use Case name: Chat  Created by: SF Team  Last Updated by: SF Team  Created on: 20/09/2018  Last Updated on: 15/10/2018  Primary Actor: User  Secondary Actor: Trainer  Description: User will be able to initiate personal chat with trainer.  Trigger: User clicks on ”Chat with Trainer” link in the drop down menu.  Preconditions: User is Logged in  Postconditions: -  Normal flow:  1. User Logs in.  2. The user will be taken to the workouts page.  3. Then there will be an option to Chat with Trainer.  Alternative flows: -  Exceptions: -  Includes: Complete Login  Priority: High  Frequency of use: High  Special Requirements: -  Open Issues: - None  Assumptions: - None  Notes and issues: - None  **Use Case ID: 5**  Use Case name: Forum  Created by: SF Team  Last Updated by: SF Team  Created on: 20/09/2018  Last Updated on: 15/10/2018  Primary Actor: User  Secondary Actor: Trainer  Description: User can Post and view questions answers.  Trigger: User clicks on “Forum”  Preconditions: User must be logged in  Postconditions: Database is updated.  Normal flow:  1. User Logs in.  2. The user will be taken to the workouts page.  3. Then there will be an option for ”QA Forum”.  Alternative flows: -  Exceptions: -  Includes: -  Priority: Moderate  Frequency of use: High  Special Requirements: - None  Open Issues: - None  Assumptions: - None  **Use Case ID: 6**  Use Case name: Report Diet chart  Created by: SF Team  Last Updated by: SF Team  Created on: 22/09/2018  Last Updated on: 15/10/2018  Primary Actor: User  Secondary Actor: -  Description: User can view his progress through the reports page and can also view diet plans.  Trigger: User clicks on “View Reports”.  Preconditions: User must be logged in  Postconditions: Database is updated.  Normal flow:  1. User Logs in.  2. The user will be taken to the workouts page.  3. Then there will be an option for ”QA Forum”.  Alternative flows: -  Exceptions: -  Includes: -  Priority: Moderate  Frequency of use: High  Special Requirements: - None  Open Issues: Graphs in report not yet completed and is left as a Future scope.  **6. Data flow specifications**  DFD is created from the SRS document provided.  **6.1 Level 0 DFD with description**  TRAINER  Customer  DB ADMIN  The customer interacts with the fitness management system whereas the trainer and the database administrator control the system in return.  **6.2 Level 1 DFD with description**    The customer can perform various operations like registering,performing challenges,requesting a chat session ,etc  The trainer can approve the chat request,send various workout plans,do fitness analysis based on the persons data,etc |