

Software Prototype Report



GYMApp

Version 3.0

Prepared By Doctors

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1. Group Members

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2. Introduction

Our project aims to solve the major problems of a gym. Our project is divided into to as web and android. An application where the gym owner creates exercise packages and these packages can be monitored by users can look at the information supplements.

User Requirement Document

1) Introduction

When we started the project, we took into account the needs of gyms and started thinking about how to make the work of a gym easier. We made our development phase neat and tidy by listing the general functions and needs of gyms. When considering these functions and needs, we took a general approach because the project should be as much as possible in a way that more gyms would want to use. This general function is to provide information and guidance in all aspects to people who want to start sports, people who do sports and professionals. To expand on the topic of information and guidance, gym customers will need information about the sports equipment, the functions of these equipment, which muscle group they are aimed at and how to perform these movements. This is one of the most general functions of a gym. Moreover, bodybuilding is not only about doing the movements, the athlete will also need nutrients for body regeneration. For this reason, information about nutrients is also considered as a function of the gym. In order to fulfil these functions, gym owners and trainers are in contact with the customers and help the customers, but as the number of customers increases, the work of the trainers and gym owners becomes more difficult. We have considered this part as the point where functions and needs are connected and the basic idea of our project to help the gym to fulfil its functions has been introduced.

According to the above requirements, role and function assignments were made to the project. Roles were divided into two as follows: User and admin. User role represents the gym customer. The customer will be able to see their body measurements, exercises, information about supplements and nutrients in the application. The admin role represents the gym owners and trainers. He can see the pages that User can see and has authorisations on these pages. These authorisations can be considered as adding and removing for supplement and exercise pages. The project is divided into two parts and these parts are as follows: Web and Android. Web and Android side gets information from a single database and makes additions to this database. The reason for choosing Web and Android is that Android appeals to a wide user base. The web side was added to the project to provide the same functions to customers who are not Android users and to have access over the Internet.

2) Functionality

This section introduces the functions of the project and the combinations and connections between roles. Roles are determined by tokens sent from the server. The tokens received from the server are processed to determine the role of the user and the authorisations and rights of the roles are provided to the role owners.

a) Admin

a.1) Signin and Register

After receiving the username and password entered on the login page, this information is sent to the database and queried from there. The possibility of failure during

this query is that the e-mail or password does not match. If the information is entered correctly and this user is in the database, it is directed to the page. After this login, a token is returned on the back side. This token is sent encrypted and parse. As a result of this parse, the user's role and session duration information is kept. The user who exceeds the session time is logged out of the application on the Android side and thus security is taken. A verification link is sent to the e-mail address entered during the registration process and the membership of the users who click here is completed.

a.1) Profile Page

The profile page of the admin user is designed in the same way as a user. We realised that gym owners and coaches also do sports and track their own progress, so the Admin role will also be able to see their own body information here. As for the function of the page, this page is a section where the user can see and change the body mass index. The two parts of the project (Android and Web) pulls this information from a single database according to the e-mail address that the user is registered with and replaces it. This information can be changed by the current role and the User role. In this way, the user will be able to follow his/her own development. The function of changing the information in the profile can also be done by both parts of the project. In this change process, a request is sent to the API via e-mail. As a result of this request, information is extracted from the returned object. Among the information extracted are name, surname, height, weight, body mass index, phone number and e-mail address. This information is placed visibly by the user.

a.2) Supplement Page

The Supplement page, which has a function that we can call Supplement or Blog, contains nutrients and their information. Admin, who has the authority to add and authorise from this page, can use this authority from both sides of the project. When logging in with the Admin account to use the authority to add Supplement, easy-to-understand page updates appear. In these page updates, Admin can add supplements and delete supplements via the add and delete buttons. During the addition process, a JSON object is created for the API to interpret. This JSON object contains the name, description and image address information of the supplement. Thanks to this information, the supplement is added to the database. For the deletion process, a request with the id of the supplement must first be sent and as a result of this request, the supplement is deleted from the database. The only thing the admin needs to do for all these operations is to press the delete button next to the supplement he wants to delete. This is how the Supplement part is grabbed for the admin user.

a.3) Exercise Page

Admin has some authorisations on the exercise page besides what the User role can see. These authorisations are determined as adding and removing some exercises. The user in the admin role knows where to add and where to remove with understandable directive designs. During the addition process, the admin is asked for the video link, exercise name, information about which body part it is for and a description. After the user in the Admin role enters these descriptions, a JSON object is created in the background and this object is requested to the API endpoint link. If the object matches with the object in the database, the exercise to be added is added. The information required for deletion will be the ID of the exercise. The ID is again requested with a JSON object and the exercise is deleted.

b) User

b.1) Profil Page

The user in the User role will be able to see and update their own information on their profile page. With this information, he will be able to follow his own development. The information that appears on this page is pulled from the same databases by two parts of the project and transferred to the user interface. While retrieving the information here, the e-mail address of the user is requested and the data is collected with the returned JSON object.

b.2) Supplement Page

Thanks to this page, the user in the role of user can see information about nutrients and can have information about which supplements to buy for himself thanks to the information he receives from here. This information will have a financial return to the gym. A record is created in the database for each supplement the user sees here and the information in this database is retrieved via the `.../getallsupplements` API endpoint. The extracted information is placed where it should be.

b.3) Exercise Page

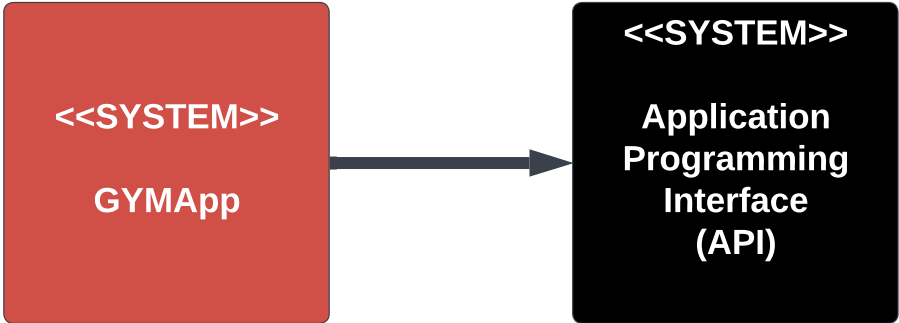
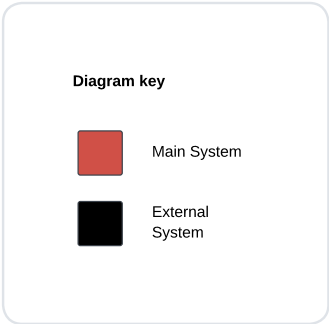
Thanks to this page, the user is informed about the tools he wants to use in the gym and the movements he wants to do. From this page, you can see the exercise you want in a categorised way. From here, the user is directed to the desired link. The page created with the exercise description name and video link taken from the database finds its place in the simple designed user interface

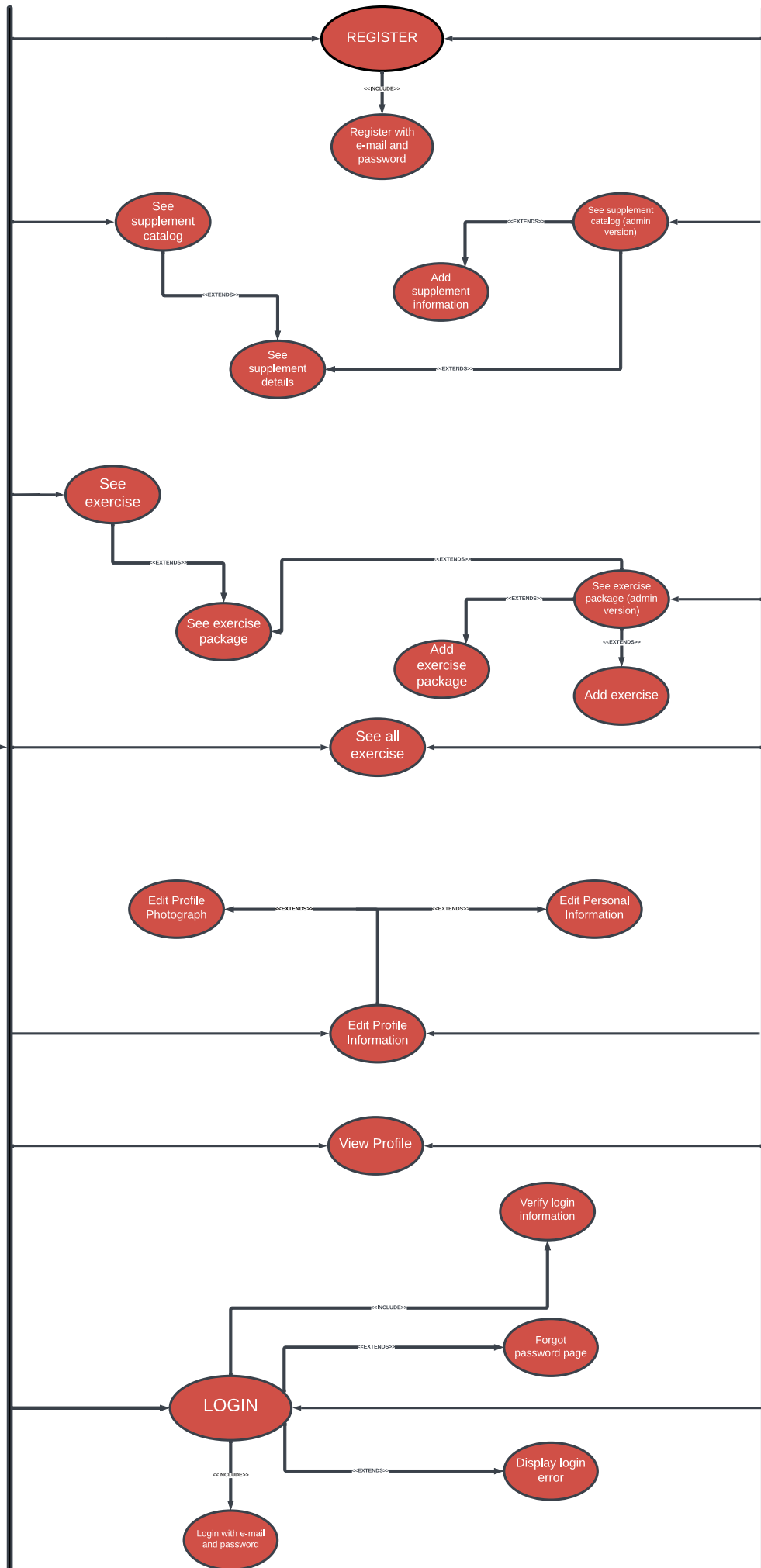
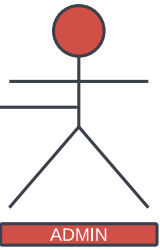
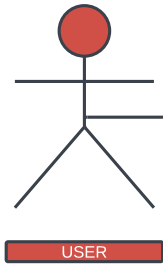
3) Security and Privacy

When users register, their sensitive information is stored in an encrypted form in the database for secure protection. This encryption is implemented with advanced algorithms and security standards to ensure the security of users' passwords, personal information and other private data. Similarly, authorisation tokens received from the database are also transmitted in an encrypted format. These encrypted tokens are securely decrypted by the system, thus ensuring the highest level of security measures in user authentication processes.

These security practices aim to effectively protect users' private information against unauthorised access. Furthermore, these protection measures are supported by a secure connection (SSL) provided over the "https" protocol of the page extension. Thus, the encrypted and secure provision of communication channels when users share their information offers a level of protection above the general security standard.

4.a Context Model





SYSTEM	GYMApp
USE CASE	Register
ACTORS	Users, admin
DATA	User's email address, user's choosen password, error message
STIMULUS	The actor (user or admin) decides to create new account.
RESPONSE	System initiates the "Register with Email and Password" use case. System validates the registration information. If the registration is successful, the system displays a confirmation message. If there are errors in the registration information, the system extends to display error messages.
COMMENTS	The system differentiates between user and admin during the registration process to capture specific information. Password requirements and email validation are part of the registration process to ensure security. The system may send a verification email to the user for account confirmation. Additional checks, such as checking for duplicate email addresses, should be implemented to maintain data integrity.

SYSTEM	GYMApp
USE CASE	Login
ACTORS	Users, admin
DATA	User's email address, user's choosen password, error message
STIMULUS	The actor (user or admin) decides to create new account.
RESPONSE	System initiates the " Login with Email and Password" use case. System verifies the login information using the " Verify Login Information" use case. If the login is successful, the system displays the appropriate user interface. If the login is unsuccessful, the system extends to display an error message using the " Display Login Error" use case. If the user forgets the password, the system extends to the " Forgot Password Page."
COMMENTS	The system checks the user type (User, Admin) during the login process to provide the relevant user interface. After a certain number of unsuccessful login attempts, the system might implement additional security measures. The " Forgot Password Page" allows users to reset their passwords through a secure process.

SYSTEM	GYMApp
USE CASE	View Profile
ACTORS	Users, admin
DATA	User's profile information (e.g., name, email, account details) Admin's profile information (if applicable)
STIMULUS	The actor (User or Admin) initiates the process of viewing a profile by accessing the profile viewing functionality.
RESPONSE	The user's profile information is displayed, including name, email, phone number, height, weight and account details.
COMMENTS	This use case caters to both regular users and administrators, providing a seamless profile viewing experience.

SYSTEM	GYMApp
USE CASE	Edit Profile Information
ACTORS	Users, admin
DATA	User's current profile information (e.g., name, email, account details). Admin's current profile information (if applicable). Updated profile information (new name, email, etc.). New profile photograph (if applicable)
STIMULUS	The actor (User or Admin) initiates the process of editing profile information by accessing the profile editing functionality.
RESPONSE	If the data is valid, the system updates the user's or admin's profile information. Response: "Profile information updated successfully!" Response (for "edit profile photograph" extension): "Profile photograph updated successfully!" Response (for "edit personal information" extension): "Personal information updated successfully!"
COMMENTS	This use case incorporates two extensions ("edit profile photograph" and "edit personal information") to cater to specific editing scenarios.

SYSTEM	GYMApp
USE CASE	See All Exercise
ACTORS	Users, admin
DATA	List of all available exercises Exercise details (name, description, category, etc.)
STIMULUS	The actor (User or Admin) initiates the process of viewing all exercises by accessing the "See All Exercises" functionality.
RESPONSE	The system displays detailed information about the selected exercise.
COMMENTS	This use case provides a convenient way for both regular users and administrators to explore and learn about the exercises offered by the system.

SYSTEM	GYMApp
USE CASE	See Exercise
ACTORS	Users
DATA	Exercise details (name, description, category, etc.)
STIMULUS	The user initiates the process of viewing a specific exercise by accessing the "See Exercise" functionality.
RESPONSE	The system displays detailed information about the selected exercise.
COMMENTS	This use case provides users with the ability to explore in-depth details about individual exercises.

SYSTEM	GYMApp
USE CASE	See Exercise Package
ACTORS	Users, admin
DATA	Exercise package details. List of exercises included in the package
STIMULUS	The users and admin initiates the process of viewing details about an exercise package by accessing the "See Exercise Package" functionality.
RESPONSE	The system displays detailed information about the selected exercise package.
COMMENTS	This use case provides users with the ability to explore curated sets of exercises bundled in packages.

SYSTEM	GYMApp
USE CASE	See Exercise Package (Admin Version)
ACTORS	Admin
DATA	Exercise package details. List of exercises included in the package
STIMULUS	The admin initiates the process of viewing details about an exercise package by accessing the "See Exercise Package (Admin Version)" functionality.
RESPONSE	The system displays detailed information about the selected exercise package and functionality for adding exercise package.
COMMENTS	This use case provides administrators with the ability to explore exercise packages and perform additional administrative actions as needed.

SYSTEM	GYMApp
USE CASE	Add Exercise Package
ACTORS	Admin
DATA	Exercise package details (name, description, list of exercises, etc.)
STIMULUS	The admin initiates the process of adding a new exercise package by accessing the "Add Exercise Package" functionality.
RESPONSE	If the data is valid, the system adds the new exercise package to the system. Response: "Exercise package added successfully!"
COMMENTS	This use case involves the process of adding a new exercise package to the system. Administrators can access this functionality to contribute and manage the available exercise packages and empowers administrators to contribute and manage the available exercise packages in the system.

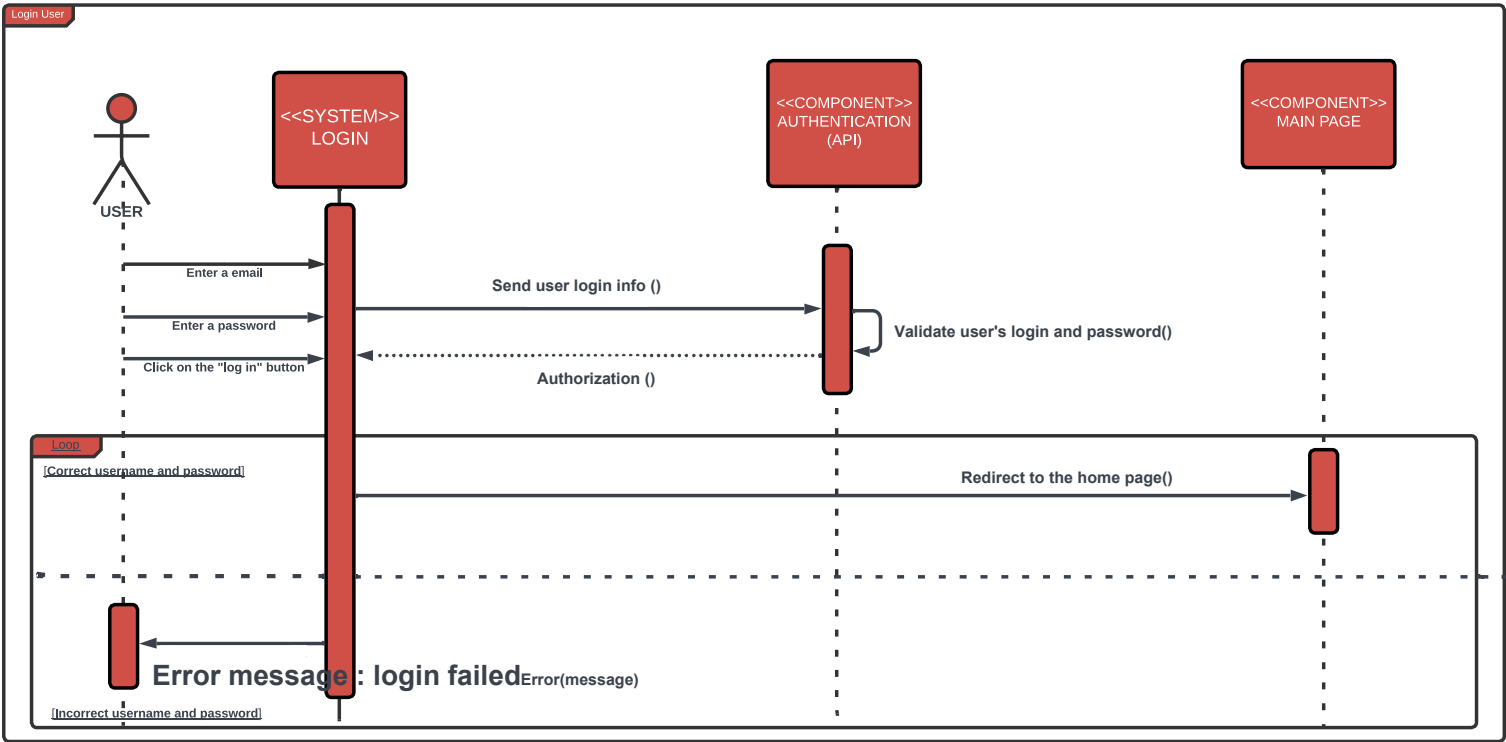
SYSTEM	GYMApp
USE CASE	See Supplement Catalog
ACTORS	Users
DATA	List of available supplement catalog. Supplement details (name, description, usage, etc.)
STIMULUS	The user initiates the process of viewing the supplement catalog by accessing the "See Supplement Catalog" functionality.
RESPONSE	The user may choose to click on a specific supplement to view more detailed information. Response: The system displays detailed information about the selected supplement.
COMMENTS	This use case provides users with the ability to explore and learn about different supplements offered by the system.

SYSTEM	GYMApp
USE CASE	Supplement Details
ACTORS	Users, admin
DATA	Supplement details (name, description, usage, etc.)
STIMULUS	The user initiates the process of viewing detailed information about a specific supplement.
RESPONSE	The system, in response to the "See Supplement Catalog" use case, prompts the user with an option to view detailed information about a specific supplement. The user selects a particular supplement from the catalog. The system retrieves and displays detailed information about the selected supplement, including its name, description, recommended usage, and other relevant details.
COMMENTS	This extension enhances the user experience by allowing them to explore in-depth details about individual supplements.

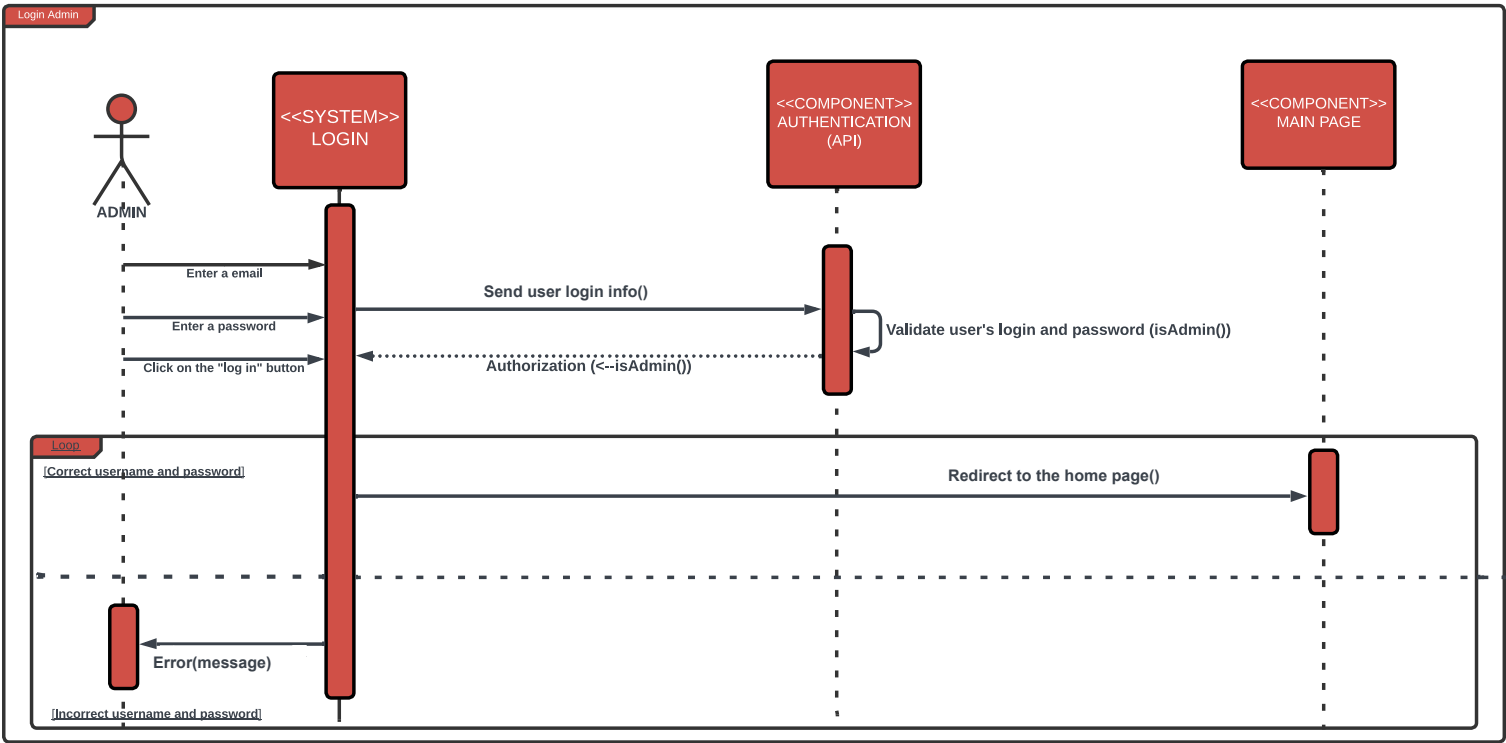
SYSTEM	GYMApp
USE CASE	See Supplement Catalog (Admin Version)
ACTORS	Admin
DATA	List of available supplement package. Supplement details (name, description, usage, etc.)
STIMULUS	The admin initiates the process of viewing the supplement catalog by accessing the "See Supplement Catalog (Admin Version)" functionality.
RESPONSE	The admin may choose to click on a specific supplement to view more detailed information or perform additional administrative actions. Response: The system displays detailed information about the selected supplement.
COMMENTS	This use case, provides administrators with the ability to explore supplements and perform additional administrative actions as needed and an extension of the "See Supplement Catalog" use case, involves the process of viewing a catalog of available supplements with additional administrative functionalities. Administrators can access this functionality to explore supplements and perform administrative actions.

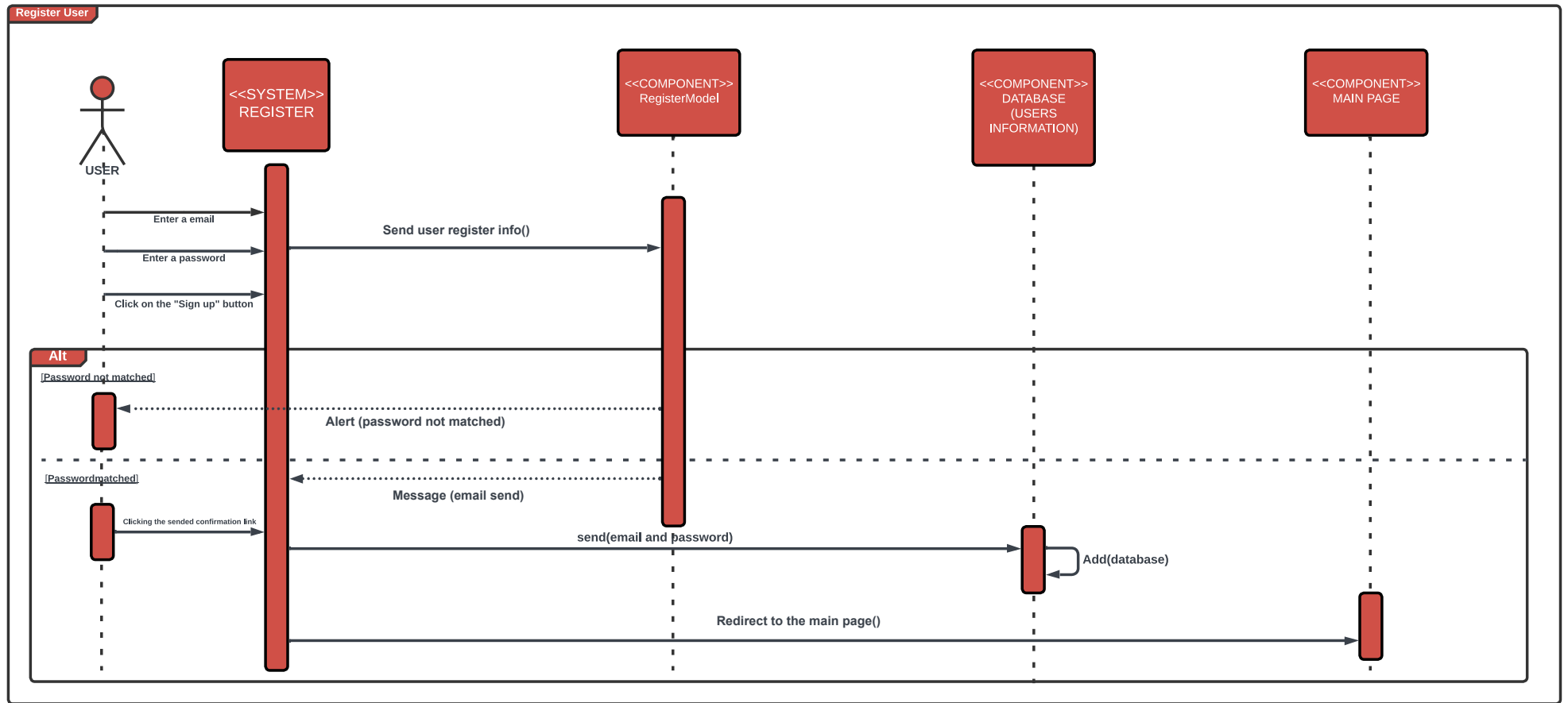
SYSTEM	GYMApp
USE CASE	Add Supplement Information
ACTORS	Admin
DATA	Supplement details (name, description, usage, etc.)
STIMULUS	The admin initiates the process of adding new supplement information by accessing the "Add Supplement Information" functionality.
RESPONSE	If the data is valid, the system adds the new supplement information to the system. Response: "Supplement information added successfully!"
COMMENTS	This use case empowers administrators to contribute and manage information about available supplements in the system and involves the process of adding new supplement information to the system. Administrators can access this functionality to contribute and manage information about available supplements.

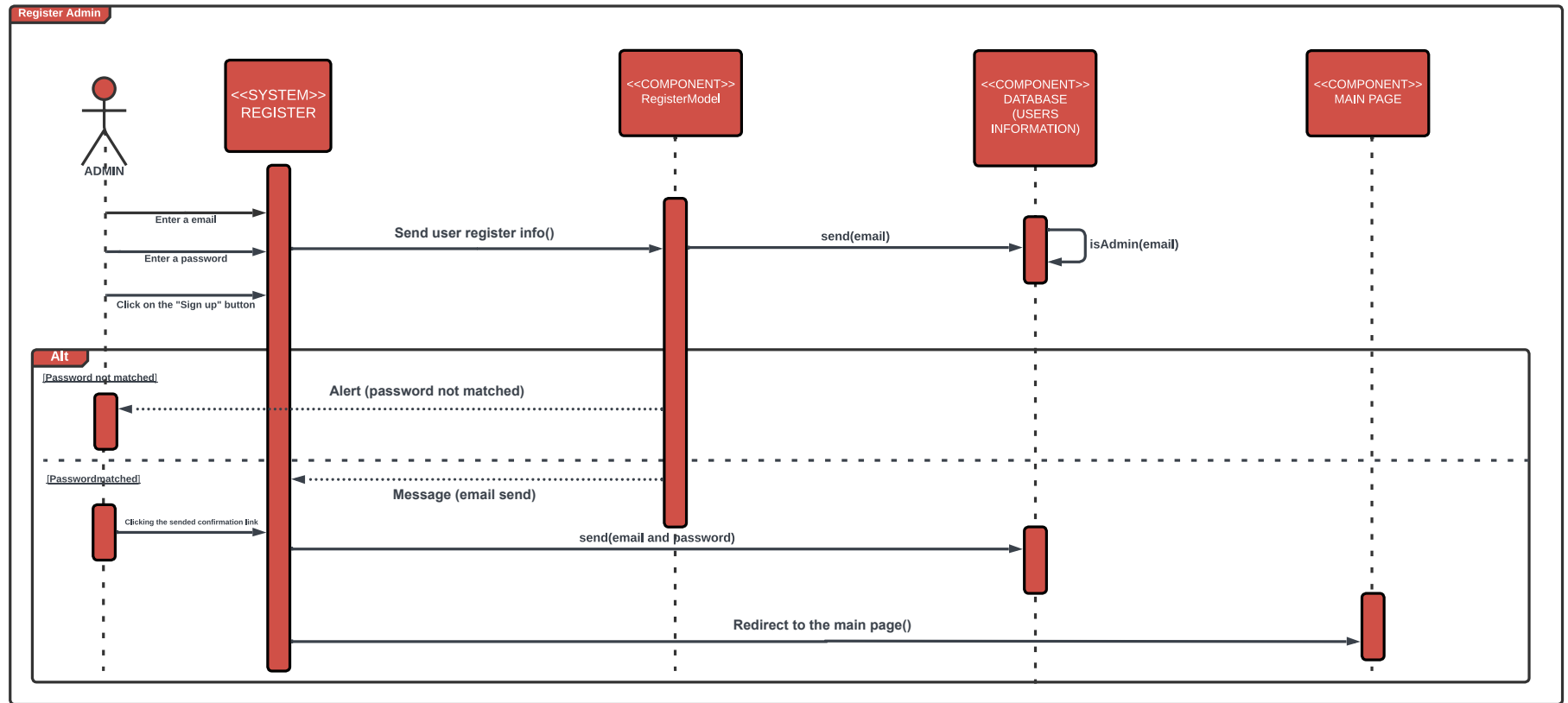
Sequence Diagram for User Login

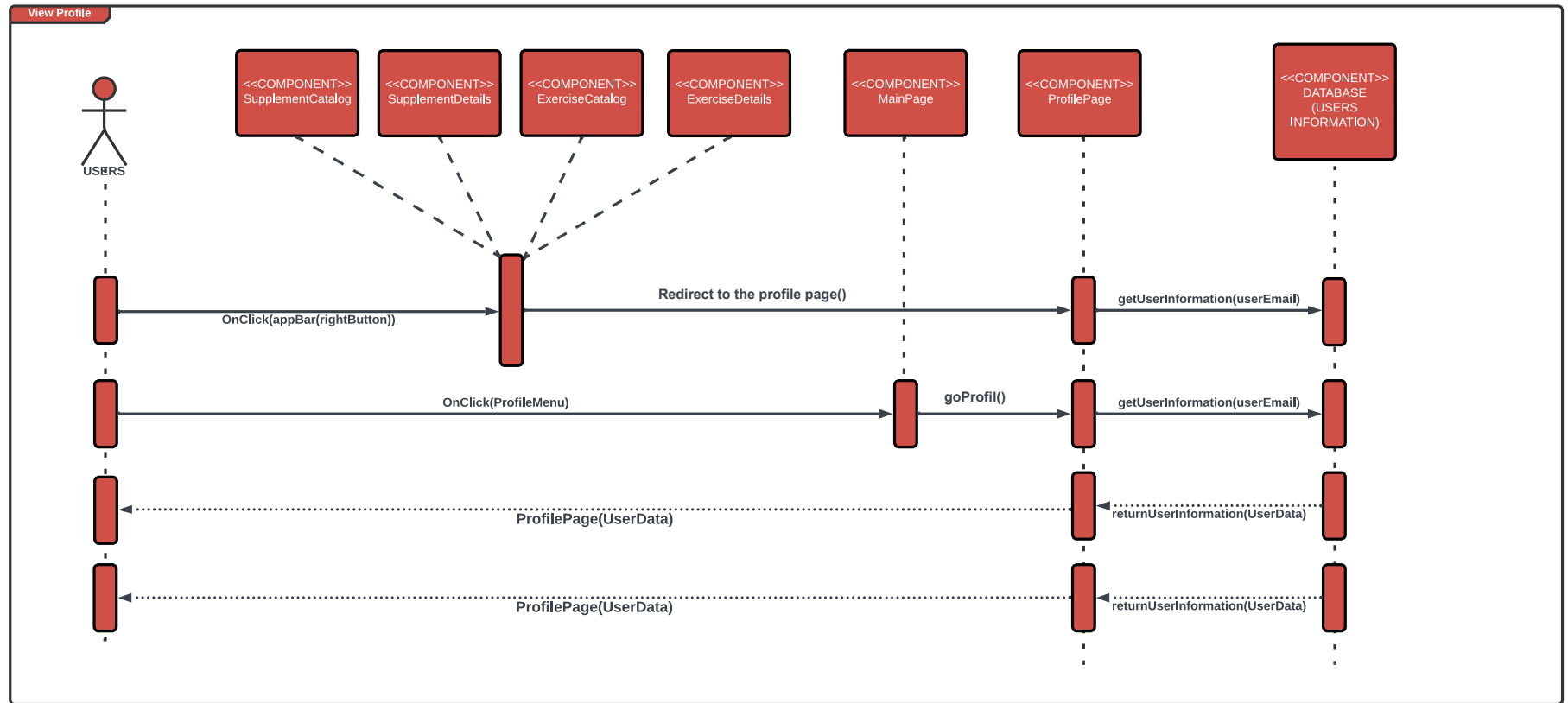


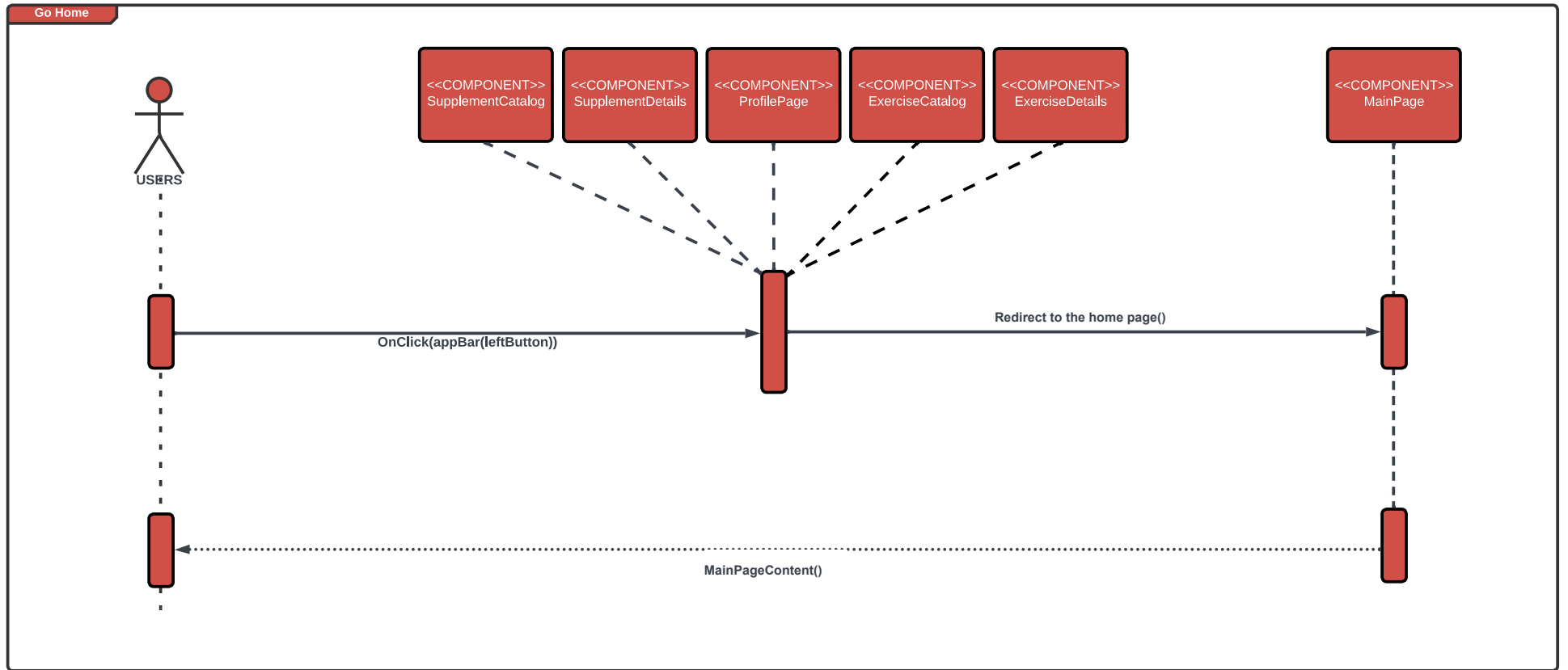
Sequence Diagram for Admin Login



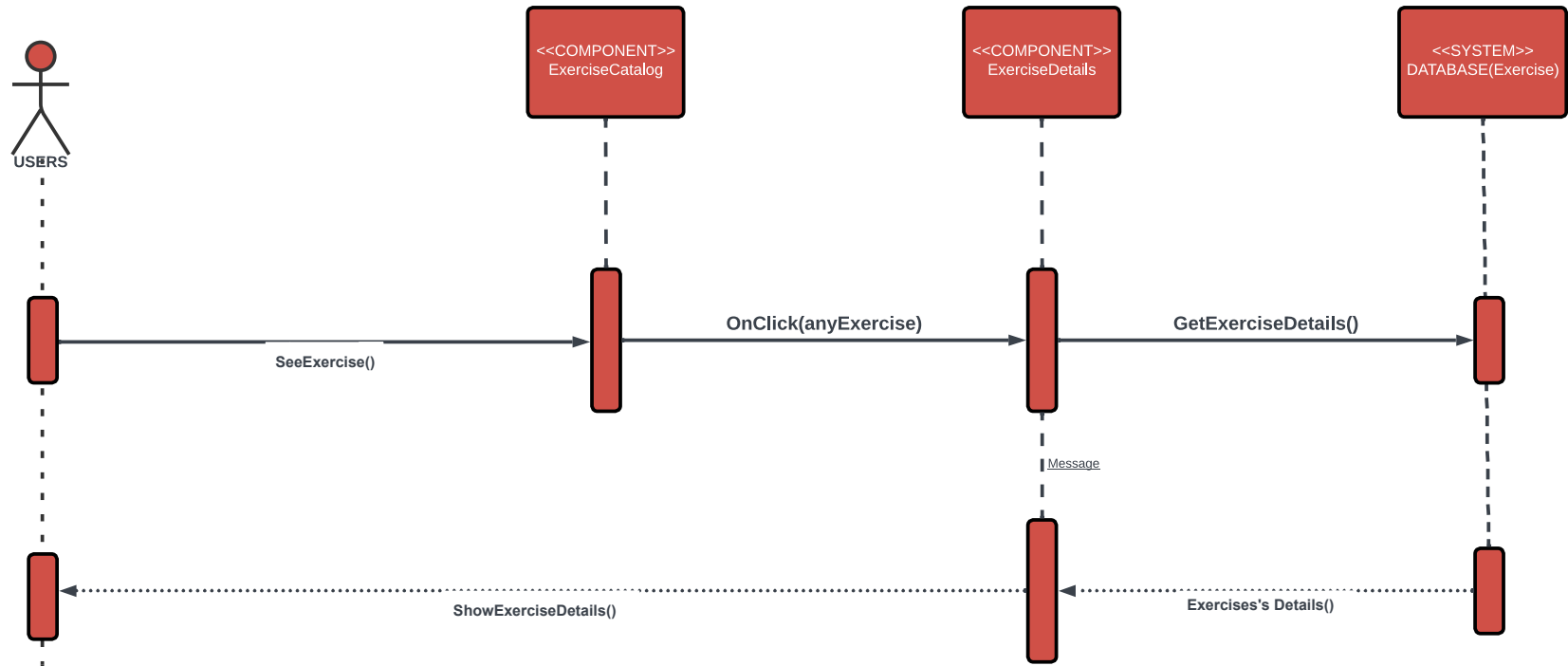


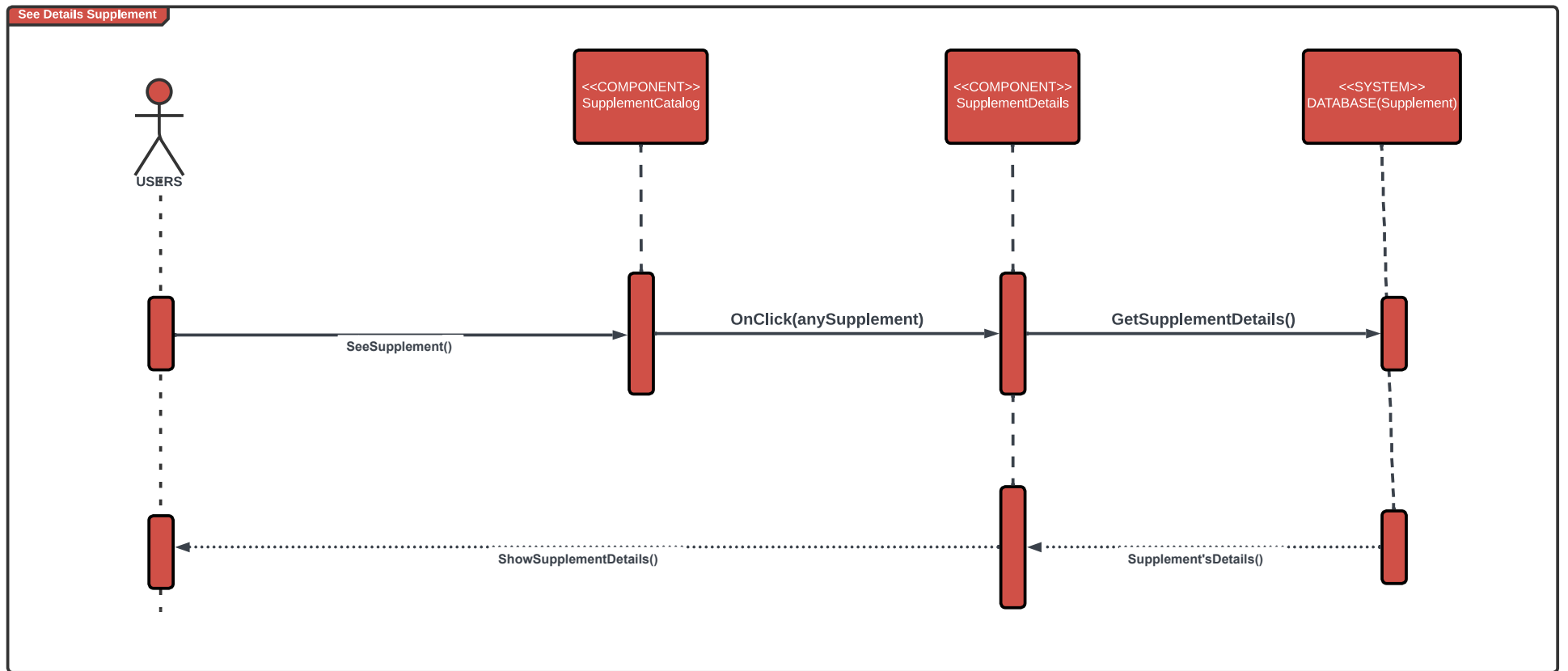


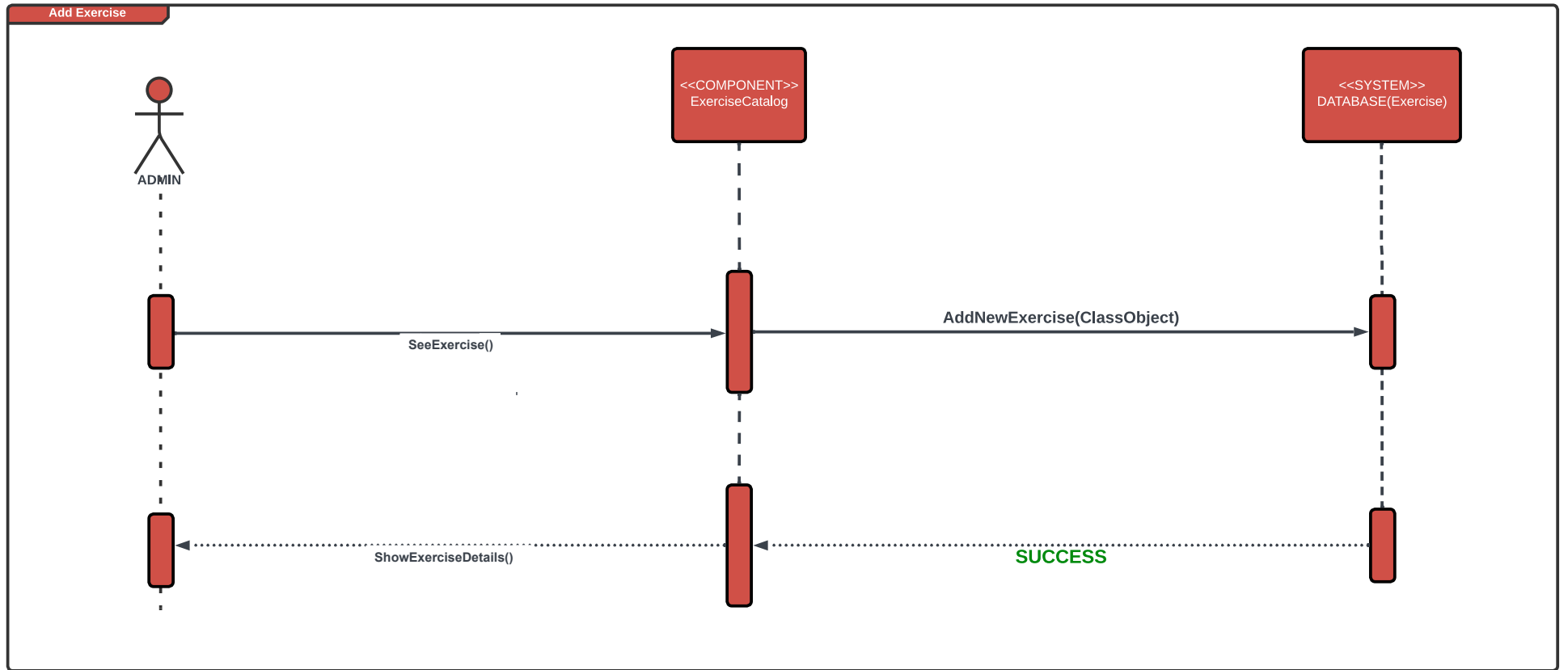


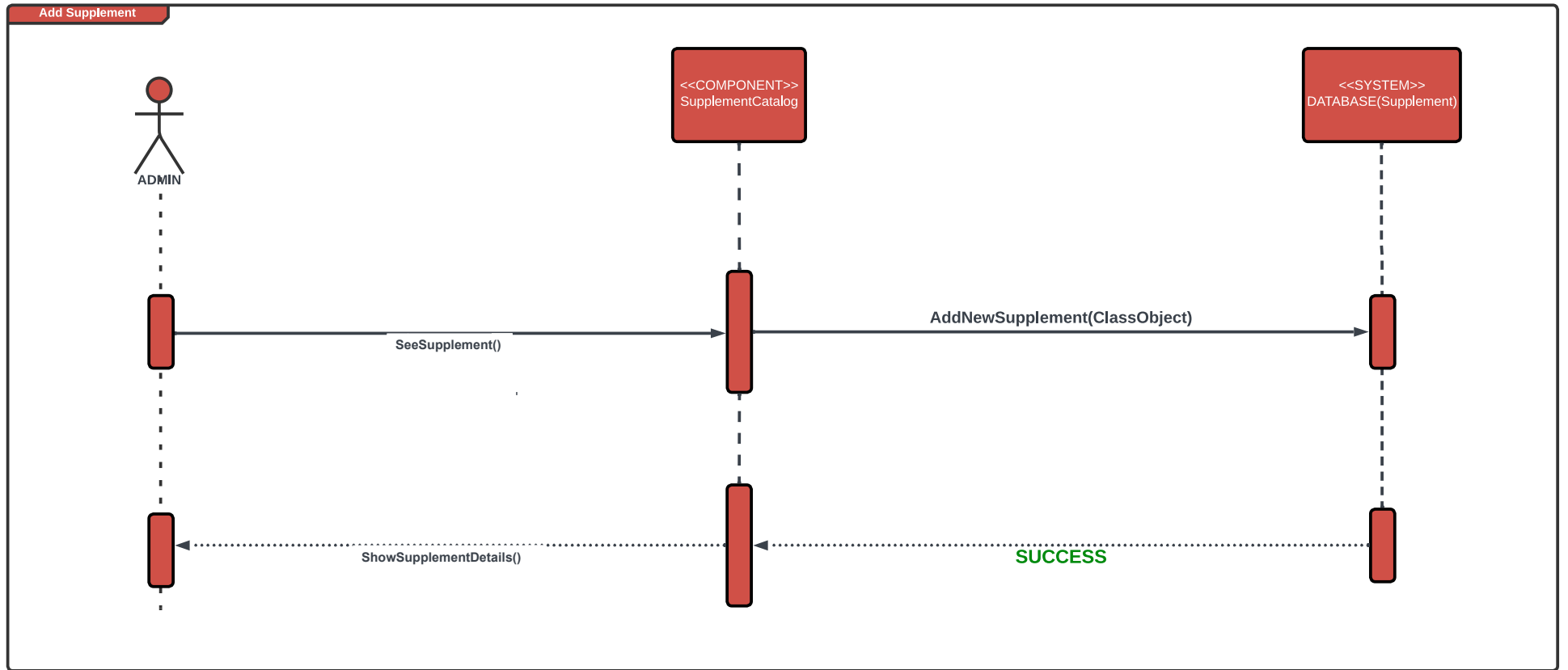


See Details Exercise









<https://github.com/ilkayofTarsus/GymApp>

This GitHub repository provides a central location to access source codes, documentation, and other related files. Additionally, users can test the project by downloading APK files directly from the repository. The latest app results for Android devices can be found in the "Android" section on GitHub.

With this approach, it provides transparent access in line with open source development principles, so potential users can easily access, examine and try the project.