Premium Fitness System

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1. Requirements elicitation

1.1. Interviewing
Requirements can be gathered by conducting interviews with Personal Trainers (PTs), General Practitioners (GPs), and clients. For instance, interviewing clients can help to understand their expectations and concerns about the program. Similarly, interviewing PTs can help to understand the types of fitness programs they are interested in and their preferences for client assignment.

1.2. Observing
Observing the experiences of actual users of the Premium Fitness System can help to identify requirements that need to be addressed. This approach can help to identify the strengths and weaknesses of the program and areas that require improvement. For example, if there are issues with matching PTs and clients within the program, this can lead to additional requirements for improvement. Analysing user behaviour patterns can also help to identify which features are frequently used and which are not, allowing the program to be optimized effectively.

2. Requirements specification

2.1. Epics and User Stories
EP 01 Registration and Verification
This epic focuses on the registration process for the different types of users on the PFS platform. Personal Trainers and General Practitioners must register and have their details verified before they can access the platform, while clients must register to participate in the fitness program.

US 01.01 Register as a Personal Trainer
As a Personal Trainer, I want to register for a PFS Trainer account so that I can receive login credentials.
US 01.02 Register as a General Practitioner
As a General Practitioner, I want to register for a PFS GP account so that I can create a referral for my patients.
US 01.03 Register as a Client
As a client, I want to register for a PFS account so that I can participate in the fitness program.
US 01.04 Verify Personal Trainer Details
As a Personal Trainer, I want my details to be verified and checked by a PF Manager so that I can be assigned clients.
US 01.05 Verify General Practitioner Details
As a General Practitioner, I want my AHPRA registration number to be checked by a PF Manager so that I can register for a PFS GP account.

EP 02 Fitness Program Management
This epic is focused on the management of the fitness program. Clients can view their program details, update progress details, and send progress updates to their General Practitioner. Personal Trainers can monitor client progress, schedule training sessions, and communicate with clients through the platform.

US 02.01 View Fitness Program Details
As a client, I want to see my fitness program details so that I can track my progress.
US 02.02 Update Progress Details
As a client, I want to add my progress updates like measurements and progress photos so that my PT can monitor my progress.
US 02.03 Send Progress Updates to GP
As a client, I want to send an email about my updates to my GP so that they can track my progress.
US 02.04 Monitor Client Progress
As a Personal Trainer, I want to be able to see the updates that my clients upload so that I can monitor their progress.
US 02.05 Schedule Training Sessions
As a Personal Trainer, I want to be able to message the clients and create an appointment using the app calendar so that I can schedule training sessions.

2.3. Functional Requirements
1. The system shall allow Personal Trainers to view and manage their assigned clients.
2. The system shall allow Personal Trainers to monitor their clients' progress.
3. The system shall allow General Practitioners to create a referral for their patients in the system.
4. The system shall allow clients to view their fitness program details.
5. The system shall allow clients to request a change in their assigned Personal Trainer if the match is not satisfactory.

2.4. Non-Functional Requirements
1. Accessibility: The PFS system shall be designed to make sure that people with disabilities, like those who have trouble seeing or moving, can use the system easily. This means that the system shall have features like screen readers, keyboard navigation, and text-to-speech, so that everyone can use it comfortably.
2. Performance: The PFS system shall be designed to work quickly and not use too much of your computer's resources, like memory or processing power. This means that the system should be designed to work well, even when many people are using it at the same time. To achieve this, the system can use techniques like storing frequently used information to make things faster, compressing data to save space, and distributing user requests evenly across different servers to prevent overload.
3. Security: The PFS system shall be designed to keep your information safe and private, so that nobody else can access it without permission. This means that the system shall be very secure and have measures in place to stop hackers or other unauthorized people from accessing your information.
4. Reliability: The PFS system shall be designed to work all the time, without any problems or errors. This means that the system shall be very dependable and have backup plans in case something goes wrong, so that you can always access your information when you need it.
5. Maintainability: The PFS system shall be designed to be easy to change and update, so that it can keep working well and improving over time. This means that the system shall be built with clear instructions and organized code, using tools like version control and testing, so that it can be updated easily and without errors.

3. Diagrams for different system perspectives

3.1. Use case diagram
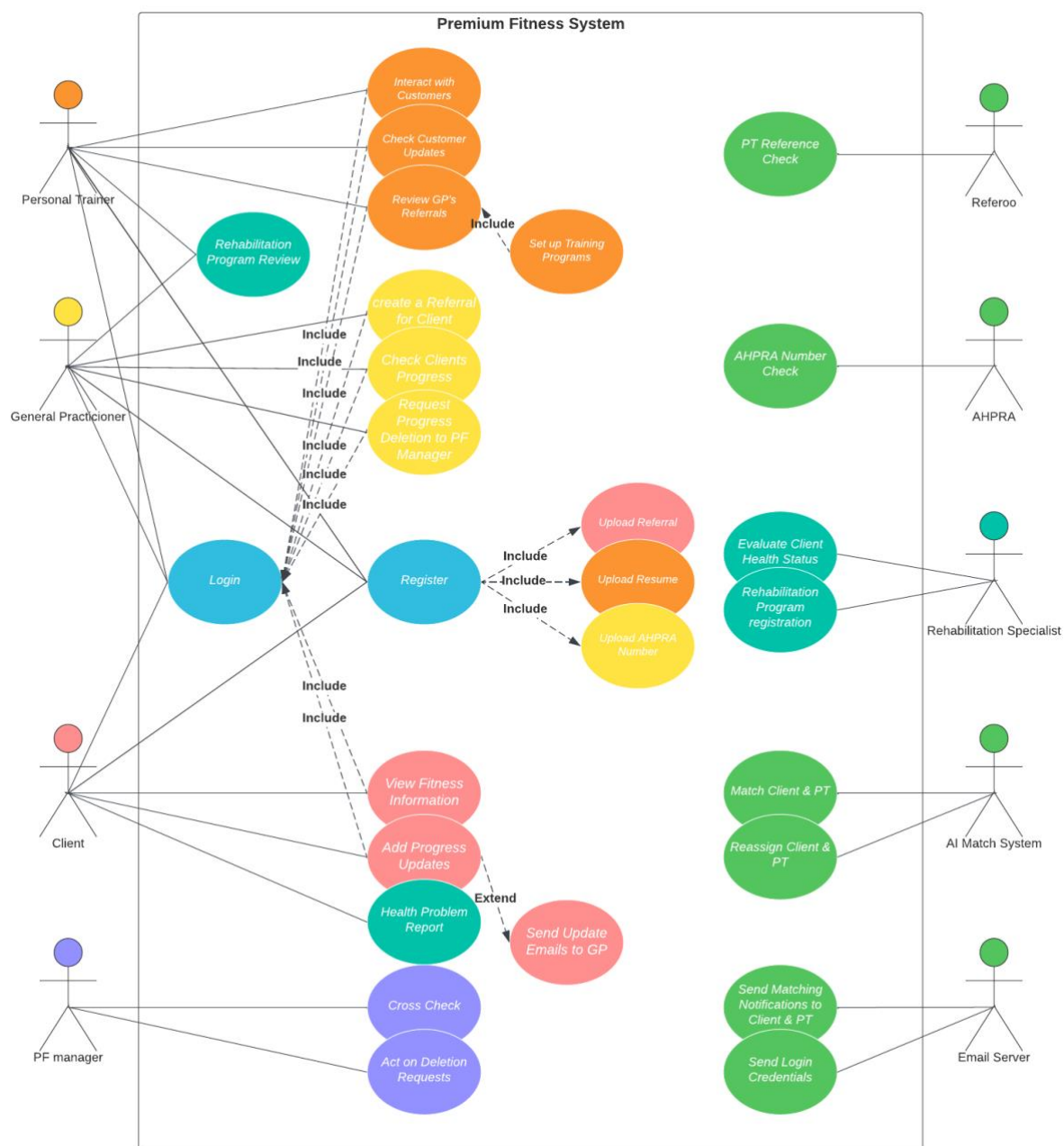
As PFS aims to be a personalized health management system, it would be great to add a use case for rehabilitation of customers with disabilities or limited mobility.

The Rehabilitation Specialist (RS) actor is responsible for evaluating the health status of clients and creating a rehabilitation program to address their specific needs. This involves conducting a thorough assessment of the client's health, developing a program tailored to their individual needs, and reviewing the effectiveness of the program over time.

In the Health Problem Report use case, customers can report any health problems they are experiencing, and this information is automatically provided to the RS.

In the Evaluate Client Health Status use case, the RS performs a comprehensive evaluation of the customer's health status based on the information obtained through the Health Problem Report.

In the Create Rehabilitation Program use case, the RS develops customized rehabilitation programs for the customer.

The Rehabilitation Program Review use case involves GP and PT applying the evaluated customer's health status and the appropriate rehabilitation program developed by RS, reviewing the customer's rehabilitation program progress regularly, and adjusting the program as necessary to ensure the best results.

4. Use case Descriptions

4.1. Use case Description-1

Use Case	Create Rehabilitation Program	
Goal	The goal of the Create Rehabilitation Program use case is for the Rehabilitation Specialist actor to develop a customized rehabilitation program for the client based on their health assessment and any specific needs or goals they may have. The program should be designed to help the client recover from or manage their health issues, and may involve various exercises, therapies, and other treatments.	
Preconditions	RS has already performed an evaluation of the client's health status	
Success End Condition	The Rehabilitation Specialist successfully creates a rehabilitation program that meets the client's needs	
Failed End Condition	The Rehabilitation Specialist is unable to create a rehabilitation program that meets the client's needs	
Primary Actors	The Rehabilitation Specialist	
Secondary Actors	X	
Trigger	The Rehabilitation Specialist identify the need for a program based on the client's health status evaluation	
Description / Main Success Scenario	**Step**	**Action**
	1	The Rehabilitation Specialist (RS) selects "Create Rehabilitation Program" from the PFS system menu
	2	The PFS system displays a list of clients for whom a rehabilitation program needs to be created
	3	RS selects a client for whom a rehabilitation program needs to be created
	4	PFS system displays the client's current health status and any relevant information about the client's medical history
	5	RS selects a template for the rehabilitation program from the PFS system
	6	RS customizes the template based on the client's specific needs, including selecting appropriate exercises, sets, and reps
	7	RS saves the customized rehabilitation program to the PFS system

	8	PFS system confirms that the rehabilitation program has been successfully created
	9	The RS can now assign the rehabilitation program to the client
Alternative Flows	**Step**	**Branching Action**
	2.a	The RS cannot find the client on the list
	2.a1	The RS manually enters the client's information or creates a new client profile
	4.a	RS notices that the client's medical history is incomplete or outdated
	4.a1	RS contacts the client or GP for updated medical information before creating the rehabilitation program
	5.a	There are no suitable templates available for the client
	5.a1	RS creates a new template or modifies an existing template to suit the client's needs
	6.a	RS encounters an error or difficulty in customizing the program
	6.a1	RS seeks assistance from a senior rehabilitation specialist or IT support team
	7.a	PFS system encounters an error while saving the customized program
	7.a1	RS tries to save the program again or contacts the IT support team for assistance
	8.a	PFS system fails to confirm the creation of the rehabilitation program
	8.a1	RS double-checks if the program has been saved or contacts the IT support team for assistance

4.2. Use case Description-2

Use Case	Reassign Client & PT	
Goal	The goal of this use case is to reassign a client from one PT to another PT in the PFS system. (PT can also request a reassignment of the client, but in this description, I am assuming that the system will comply with the client's request)	
Preconditions	A client is unsatisfied with their existing PT and wants to switch to a different PT. There must be at least two PTs registered in the PFS system	
Success End Condition	The client has been successfully reassigned to the new PT, and the new PT has access to the client's information in the PFS system	
Failed End Condition	The client is not reassigned to the new PT, or the new PT does not have access to the client's information in the PFS system	
Primary Actors	The PF Manager	
Secondary Actors	Old PT and New PT	
Trigger	The PF Manager decides to reassign a client from one PT to another in the PFS system in response to a customer complaint	
Description / Main Success Scenario	Step	Action
	1	The PF manager selects the "Reassign Client & PT" option from the PFS system menu
	2	The PFS system displays a list of clients who are currently assigned to PT in the system
	3	The PF manager selects a client to reassign
	4	The PFS system displays the client's current PT and asks the PF manager to select a new PT
	5	The PF manager selects the new PT from the list of registered PTs in the PFS system
	6	The PFS system asks the PF manager to confirm the reassignment
	7	The PF manager confirms the reassignment
	8	The PFS system notifies the old PT and new PT about the reassignment

	9	The new PT can now access the client's information in the PFS system
Alternative Flows	**Step**	**Branching Action**
	1.a.	If the list of clients is empty, the PFS system displays an error message and ends the use case
	1.b.	If there is no PT or only one PT registered in the system, the PFS system displays an error message and asks the PF manager to register a new PT or return to the main menu
	3.a.	If the selected client is not currently assigned to a PT, the PFS system displays an error message and asks the PF manager to select a different client or return to the main menu
	4.a.	If the selected new PT is not available to take on the client, the PFS system displays an error message and asks the PF manager to select a different PT or return to the main menu
	6.a.	If the PF manager decides not to proceed with the reassignment, the PFS system cancels the reassignment and returns to the main menu
	6.b.	If the new PT declines the reassignment, the PFS system displays an error message and return to step 5
	6.c.	If the old PT objects to the reassignment, the PFS system notifies the PF manager and returns to step 2 to review the reassignment request
	8.a.	If the old PT or new PT cannot be reached or does not confirm the reassignment within a specified timeframe, the PFS system sends a reminder notification and waits for confirmation before proceeding