FPT UNIVERSITY

Drug Use Prevention Support System
Software Requirement Specification

Class Code: SE1848

Group Code: Group 5

FPT University, 17/06/2025

RECORD OF CHANGE

*A - Added M - Modified D - Deleted

Effective Date	Changed Items	A* M, D	Change Description	New Version
17/06/2025	Initial	A	Add project overview	
18/06/2025	Initial	A	Add Product Perspective in Overall Description	
20/06/2025	Initial	A	Add Purpose and Definitions, Acronyms	
28/06/2025	Initial	A	Add Business Process in Overall Description	
29/06/2025	Initial	A	Add User Classes in Overall Description, Reusability in Non-functional requirement.	
29/06/2025	Initial	A	Add Performance in Non-functional requirements.	
29/06/2025	Initial	A	Add Use Case Specifications in Functional Requirement	
29/06/2025	Initial	A	Add Reliability in Non-functional requirements.	
29/06/2025	Initial	A	Add Usability in Non-functional requirements.	
30/06/2025	Purposes, Definitions, Acronym	M	Modified contents in Introduction	
30/06/2025	Initial	A	Add References in Introduction	
30/06/2025	Initial	A	Add Scalability in Non-functional requirements.	
01/07/2025	Initial	A	Add Data Flow Diagrams	

SIGNATURE PAGE

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TABLE OF CONTENTS

1 INTRODUCTION

1.1 Purpose

The primary objective of this SRS is to define, in a precise and unambiguous manner, the software requirements of a system designed to support community efforts in preventing drug use. This document specifies the expected external behavior of the application, along with any constraints, assumptions, and non-functional attributes such as performance, usability, and security. It is intended to serve as a formal agreement between stakeholders, ensuring that the system meets its intended goals and adheres to all predefined criteria.

1.2 Definitions, Acronyms

- Guest: A visitor to the system who has not registered for an account.
- Member: A registered individual with access to educational content, surveys, and consultation scheduling functionalities.
- Staff: Authorized personnel responsible for managing content such as blog posts, surveys, and educational courses.
- Consultant: A certified counselor who provides online consultation services within the system.
- Manager: A supervisory user role responsible for monitoring system activities, managing consultants, and accessing system analytics.
- Admin: A user with full system privileges, including user management and system configuration.
- SRS: Software Requirements Specification.
- ASSIST: Alcohol, Smoking, and Substance Involvement Screening Test – a WHO-developed instrument used to assess substance use.
- CRAFFT: A behavioral health screening tool designed for use with adolescents to assess substance-related risks.
- IEEE 830-1998: A standard published by the Institute of Electrical and Electronics Engineers outlining recommended practices for software requirements specifications.

1.3 References

- IEEE Std 830-1998, IEEE Recommended Practice for Software Requirements Specifications. Institute of Electrical and Electronics Engineers, 1998. Available at: https://ieeexplore.ieee.org/document/720574
- World Health Organization. The ASSIST Project: Alcohol, Smoking and Substance Involvement Screening Test (ASSIST). WHO Press, Geneva, 2002. Retrieved from: https://www.who.int/publications/i/item/978924159938-2
- Knight, J.R., et al. (2002). CRAFFT Screening Test. Center for Adolescent Substance Abuse Research (CeASAR), Boston Children's Hospital. Available at: https://crafft.org
- Sommerville, I. (2011). Software Engineering (9th Edition). Addison-Wesley. [Used as a general reference on software engineering principles relevant to this SRS].

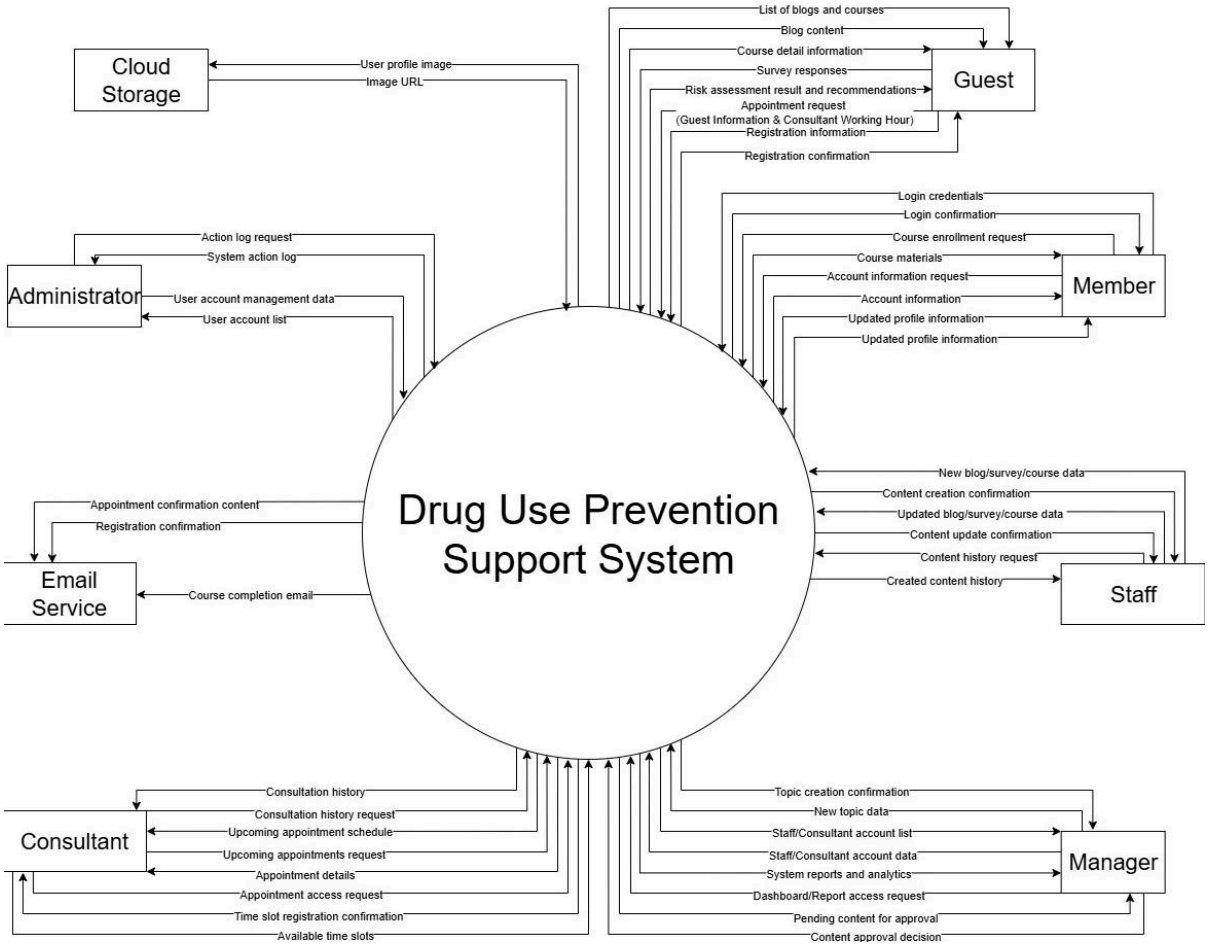
2 OVERALL DESCRIPTION

2.1 Product Perspective

The Drug Use Prevention Support System (DUPSS) is a community-oriented software developed to assist a volunteer organization in preventing drug abuse. It is a new software product, developed from the ground up to serve multiple purposes, including:

- Online education and training on drug awareness and prevention
- Risk self-assessment using standardized surveys such as ASSIST and CRAFFT
- Online consultation booking with certified counselors
- Management of community outreach and education programs
- User account and activity tracking

DUPSS is a web-based application accessible via desktop and mobile browsers. It consists of multiple interconnected modules: user management, course management, survey assessment, appointment scheduling, blog and content publication, and administrative reporting. The system communicates with external services (e.g., email, video conferencing tools) via secure API integration and stores data in a centralized relational database.



2.2 Business Process

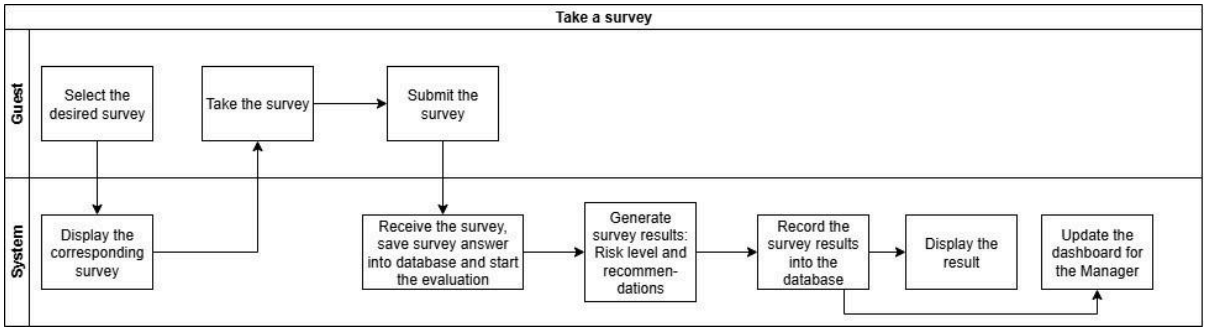
The Drug Use Prevention Support System (DUPSS) includes four key business processes to support drug prevention activities in the community. Each process is presented using Swimlane Diagrams to clearly identify the roles and system responsibilities involved in delivering the features securely and consistently.

2.2.1 Take a Survey

This process allows a guest user to take a standardized risk-assessment survey (e.g., ASSIST, CRAFFT).

Main flow:

- Guest selects a survey to take.
- System displays the selected survey.
- Guest completes and submits the survey.
- System receives the submission, saves it into the database, processes it, and generates the risk level and suggested actions.
- The result is saved to the database and shown to the guest.
- System also updates the dashboard for the manager with summary insights.

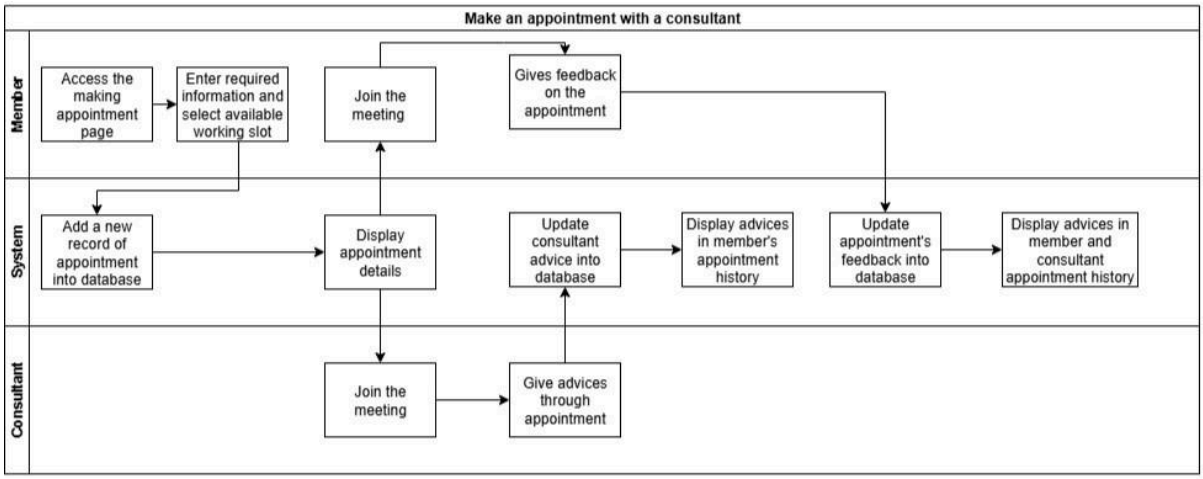


2.2.2 Make an Appointment with a Consultant

This process enables a registered member to book a consultation with a certified consultant.

Main flow:

- Member accesses the booking page and submits required information.
- System adds the request to the database.
- System checks consultant availability:
  - If available: System updates and confirms the appointment.
  - If not available: System notifies the member of unavailability.
- Consultant gives advice in the meeting and submits it to the system.
- Member provides feedback after the session.
- System saves advice and feedback in both member and consultant histories.

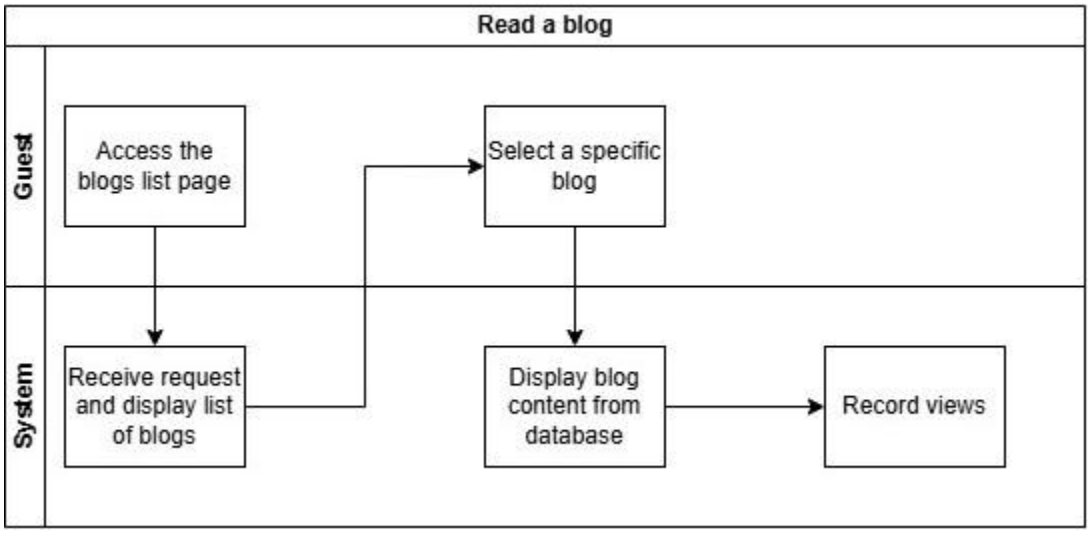


2.2.3 Read a Blog

This process allows guests to view shared blog posts on drug awareness and prevention topics.

Main flow:

- Guest accesses the blog page.
- System retrieves and displays the list of blog posts.
- Guest selects a blog to read.
- System displays the blog content and updates the view count.



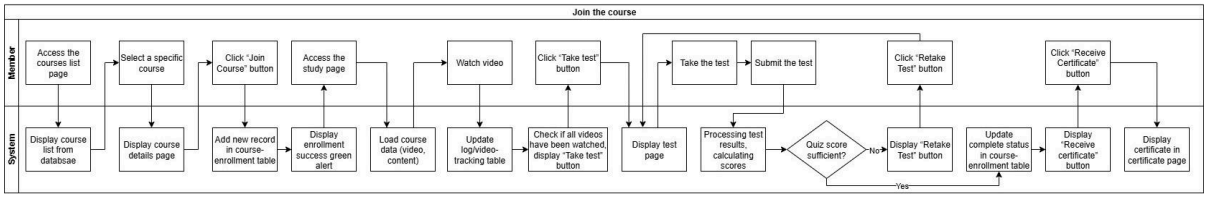
2.2.4 Join a Course

This process enables a registered member to enroll in and complete an online training course.

Main flow:

- Member browses and selects a course.
- System displays course details and records enrollment.
- Member accesses the study page and watches course videos.
- System tracks video progress.
- After all videos are watched, the "Take test" button is shown.

- Member takes and submits the test.
- System evaluates the test score:
  - If passed: Member clicks to receive a certificate.
  - If failed: System shows the "Retake test" option.
- System displays the certificate upon successful completion.



2.3 User Classes

The system supports multiple user classes, each with distinct goals and responsibilities. The following table presents the main user types in the system and their corresponding goals and tasks:

2.3.1 Guest

Goal: Access public content and perform risk self-assessment without registration.

Tasks:

- Browse homepage and blog content.
- Take risk assessment surveys (e.g., ASSIST, CRAFFT) anonymously.
- View introductory information about the organization.
- Register an account (optional to become Member).

2.3.2 Member

Goal: Learn about drug prevention and receive support through training and consultation.

Tasks:

- Enroll in online training courses.
- Watch video lectures and complete quizzes.
- View progress, results, and certificates.
- Book appointments with consultants.
- Provide feedback on appointments.

2.3.3 Staff

Goal: Support program execution and manage educational content.

Tasks:

- Create and manage blog articles, surveys and course content.

2.3.4 Consultant

Goal: Provide personalized counseling based on member needs and appointments.

Tasks:

- View and manage own work schedule.
- Conduct online consultations via the assigned meeting tools.

- Access and review member profiles and consultation histories.
- Submit advice and consultation results.
- View feedback from members.

2.3.5 Manager

Goal: Oversee system operations, monitor consultant performance, and approve educational materials.

Tasks:

- Approve blog, survey and course content.
- Assign consultants to appointments.
- Review detailed analysis reports and activity tracking (e.g., user actions, consultation history).

2.3.6 Administrator

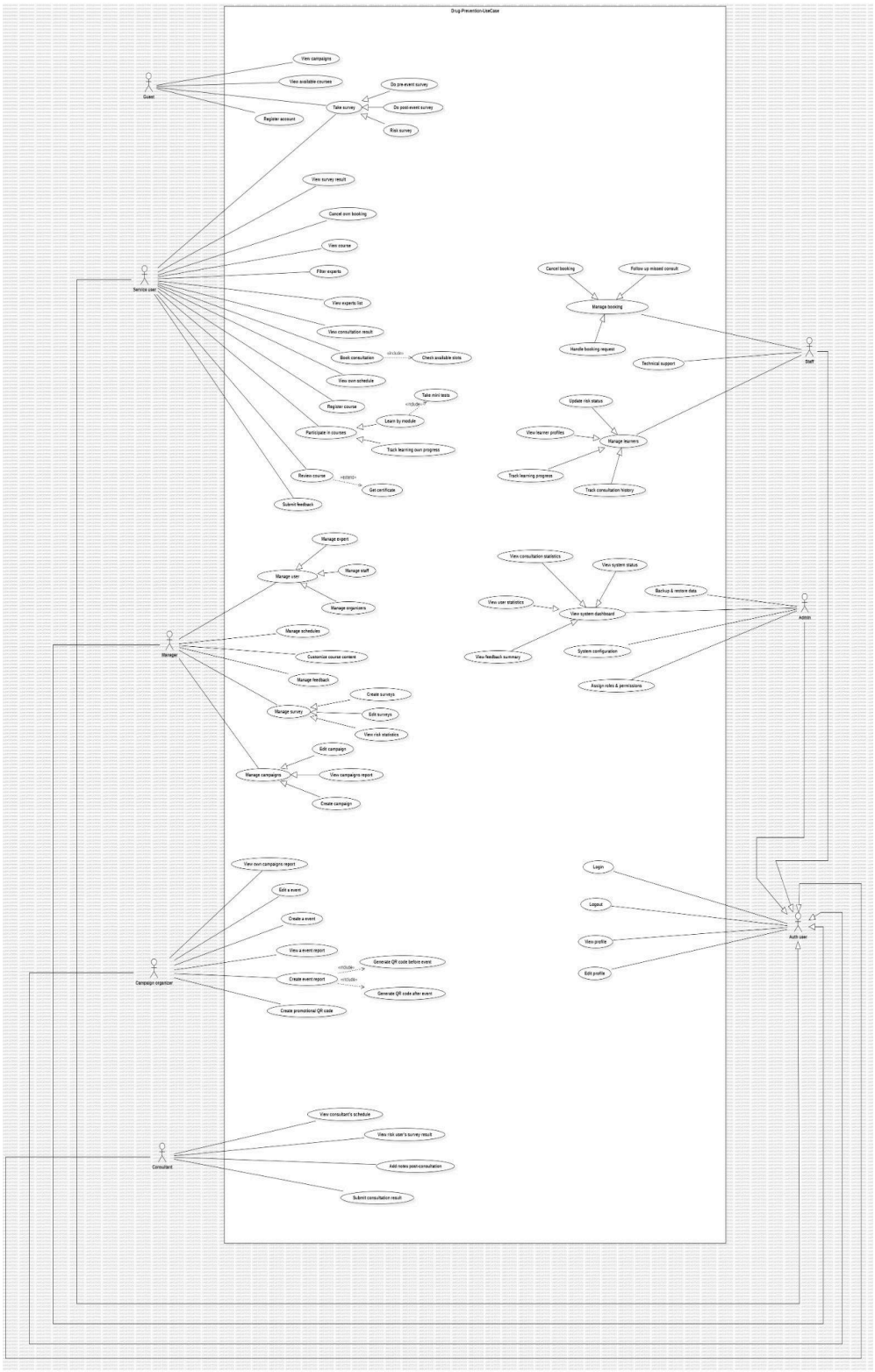
Goal: Manage technical operations, users, and system integrations.

Tasks:

- Manage user information, roles and access control.
- Monitor account creation, updates and ban.
- Configure integration with external services (e.g., email, video conferencing).
- Receive and track error reports from system components.

3 FUNCTIONAL REQUIREMENTS

3.1 Use Case Diagram



3.2 Use Case Specifications

3.2.1. Take Drug Risk Assessment Survey.

USE CASE-1 SPECIFICATION			
Use-case No.	UC001	Use-case Version	1.0
Use-case Name	Take Drug Risk Assessment Survey		
Author	Luong Gia Lam		
Date	17/06/2025	Priority	High

Primary Actor: Member

Secondary Actor: None

Description: Users conduct a risk assessment survey (e.g., ASSIST, CRAFFT) to classify the level of drug use risk. The system calculates scores, categorizes the risk (low, medium, high), and suggests appropriate actions (training, consultation, emergency intervention).

Triggers: Member selects the “Conduct Risk Assessment” option on the interface.

Preconditions:

PRE-1. The user has accessed the application.

Post Conditions:

POST-1. Survey results (anonymous ID, answers, score, time) are saved to the database.

POST-2. The user receives a suitable action recommendation.

Main Success Scenario:

1.0 Take a Risk Assessment Survey:
1. The user selects the “Khảo Sát” option.

2. The system displays a list of surveys (e.g., ASSIST), and the user selects one.

3. The system displays the survey questions.

4. The user answers the questions and clicks ""Submit"".

5. System calculates the score according to international standards and categorizes the risk level (low, medium, high)

6. The system saves the results to the database.

7. The system displays the results and suggests actions (e.g. take a training course, book a consultation).

8. The user selects the suggested action or exits.

Alternative Scenario: None

Exceptions:

1.0.E1 Lost connection during survey:

1. The system displays a connection error warning or temporarily saves the process.

2. The user is asked to try the system again after the connection is stable.

3. The user continues the survey to the last saved step.

Business Rules:

BR-1: The system only allows users to retake the risk assessment survey after a minimum of 7 days to prevent spam.

Frequency of Use: Depends on the campaign,can also be actively accessed by users at any time according to individual needs

Other Information: A temporary storage/caching/partitioning strategy is needed to prevent data overflow when many users conduct the survey.

Assumptions: Users understand the survey questions, the system has an internationally standardized scoring algorithm.

3.2.2. Book Appointment with Consultant

USE CASE-2 SPECIFICATION			
Use-case No.	UC002	Use-case Version	1.0
Use-case Name	Book Appointment with Consultant		
Author	Luong Minh Nhat, Nguyen Tan Dung		
Date	17/06/2025	Priority	High

Primary Actor: Member

Secondary Actor: Consultant

Description: Member wants to make an appointment for consultation. The system allows members to choose consultants, schedule time and enter consultation content. The system will save the appointment, send notification to the consultant and manage appointment history.

Triggers: The Member indicates that they want to book an appointment with a consultant.

Preconditions:

PRE-1: Member has logged in properly.

PRE-2: The consultation time does not overlap with the previous schedule.

Post Conditions:

POST-1: Appointment is stored in the system.

POST-2: The consultant is sent a notification about the appointment.

Normal Flow:

4.0 Book Appointment with Consultant:

1/ The Member accesses the "Đặt lịch hẹn" feature.

2/ The system displays a list of available consultants and their free time slots**.**

3/The Member selects a consultant and time slot**.**

4/ The system prompts the Member to optionally enter a note or reason for the appointment.

5/ The Member confirms the booking.

6/ The system validates the selected slot (not already booked).

7/ The appointment is saved to the system.

8 /The system notifies the consultant.

9/ The system displays a confirmation message to the Member.

Alternative Flows:

4.1 Web System Unavailable – Booking via Phone

1/ Member attempts to book a consultation, but the web system is temporarily unavailable or the selected consultant has no available online schedule.

2/ The system displays the message: "Online booking currently unavailable. Please contact us via phone to schedule your consultation."

3a. Member decides to call the hotline number (e.g., 0123 456 789) → A staff member assists in booking the appointment manually. → End of use case

3b. Member cancels the operation → end of use case.

Exception

4.1.E1 Lost Connection During Booking

1. The system detects a loss of internet connection while the Member is booking an appointment.

2. The system displays a connection error warning and temporarily saves the partially entered data (if possible).

3. The Member is prompted to retry once the connection is restored.

4. The system resumes the booking process from the last saved step.

Frequency of Use: Used 1–2 times per week per Member, depending on consultation needs.

Other Information: All appointment data, including time, consultant, and consultation note, is stored for audit, history tracking, and system analytics to improve user support and service quality.

Business Rules:

BR-02: Do not allow 2 appointments at the same time.

Assumption: The list of available consultants and time slots is up-to-date at the time of access.

3.2.3. Register for Drug Prevention Training Course

USE CASE-3 SPECIFICATION			
Use-case No.	UC003	Use-case Version	1.0
Use-case Name	Register for Drug Prevention Training Course		
Author	Nguyen Thanh Dat		
Date	17/06/2025	Priority	Medium

Primary Actor: Member

Secondary Actor: None

Description: Users can register for an appropriate drug prevention training course. The system presents a list of available courses to users.

Triggers: Users select "Khóa học" and choose the course they want to join.

Preconditions:

PRE-1: User has logged into the system with a valid account.

PRE-2: At least one training course is available.

Post Conditions:

POST-1: User's registration information is saved.

POST-2: A certificate must be issued to the user who has finished the course.

Normal Flow:

3.0 Register for Drug Prevention Training Course:

1. The system shows a list of recommended training courses.
2. The user selects a course and clicks “Tham gia khóa học”.
3. The system shows course details (videos, quiz).
4. the user finishes the course.
5. The system saves the information to the database.
6. The system issues certificates to user.

Alternative Flows:

3.1. No Courses Available – Contact via Phone

1/ System shows a message: “No available training courses for your risk level at this time.”

2/ System suggests user to contact support via phone (e.g., 0123 456 789) for personalized training options.

3a. Member decides to call → End of use case.

3b. Member cancels the operation → End of use case.

Exception

3.0.E1 Registration error (e.g., database error):

1. The system displays an error message.

2. Suggests users to try again or contact support.

Frequency of Use: Depends on the user's survey results and interest in available courses.

Other Information: Course data should be regularly updated and filtered by target audience (e.g., youth, adult, parents).

Business Rules:

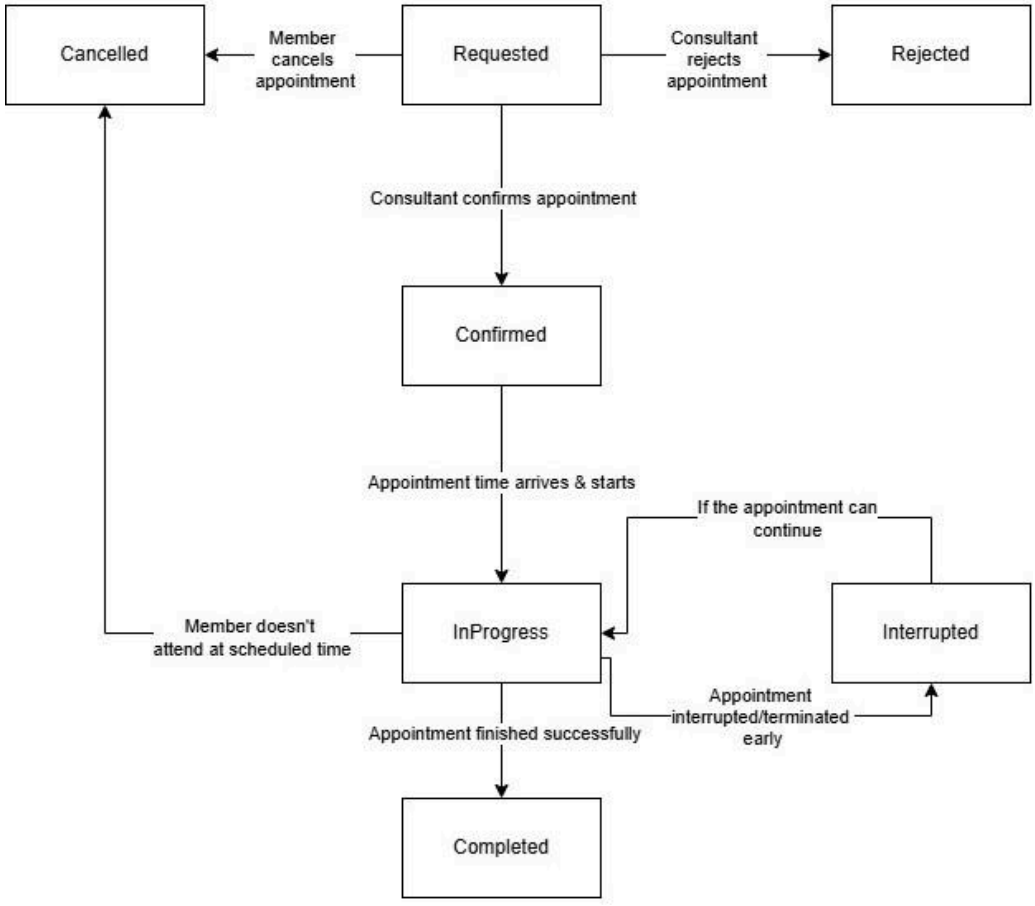
BR-03: Only authenticated members can register for courses.

Assumption: User understands the importance of training, admin keeps course schedules up to date.

3.3 State Diagrams

3.3.1 Appointment

This diagram represents the lifecycle of an appointment between a member and a consultant.

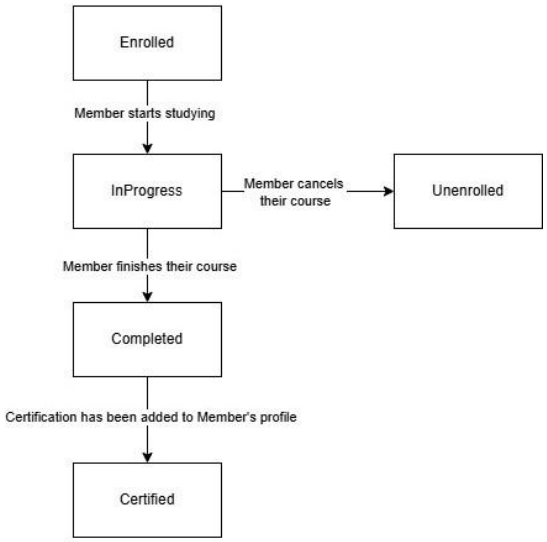


States:

- Requested: Member has submitted a request for an appointment.
- Confirmed: Consultant or system has approved the request.
- In Progress: The meeting is happening at the scheduled time.
- Completed: The appointment ended successfully.
- Rejected: Consultant denied the appointment request.
- Cancelled: Member cancelled the appointment before it happened.
- Interrupted: The appointment was started but ended early due to unexpected reasons.

3.3.2 Course Enrollment

This diagram illustrates the course participation progress of a member.

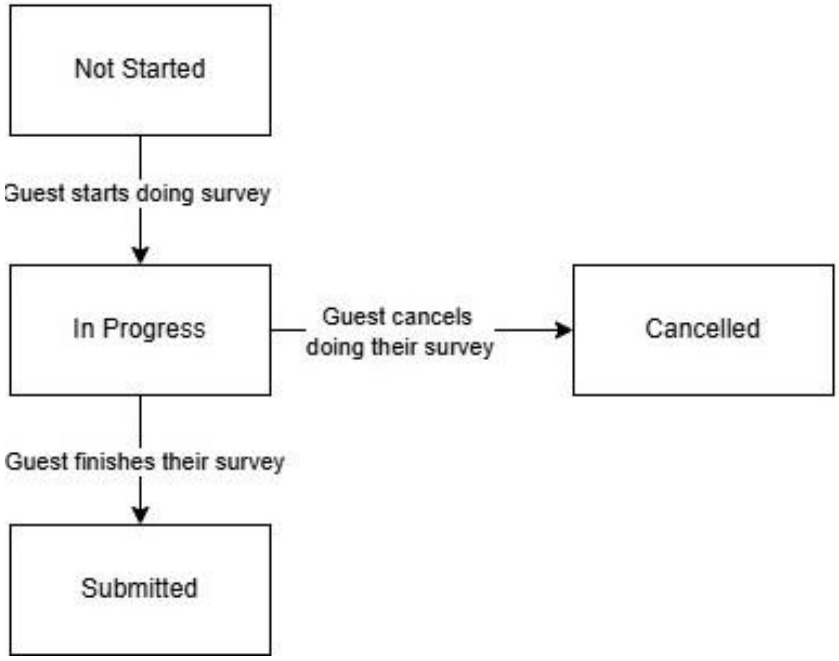


States:

- Enrolled: The member has joined the course but has not started studying.
- In Progress: The member has begun learning by accessing the course content.
- Unenrolled: The member has canceled their course participation (only possible from “In Progress”).
- Completed: The member has finished all course materials and passed the final assessment.
- Certified: The system has issued a certificate and added it to the member’s profile.

3.3.3 Survey Result

This state diagram describes the lifecycle of a survey result submitted by a user (guest or member). It reflects how the system tracks progress as the user interacts with a drug risk self-assessment survey such as ASSIST or CRAFFT.

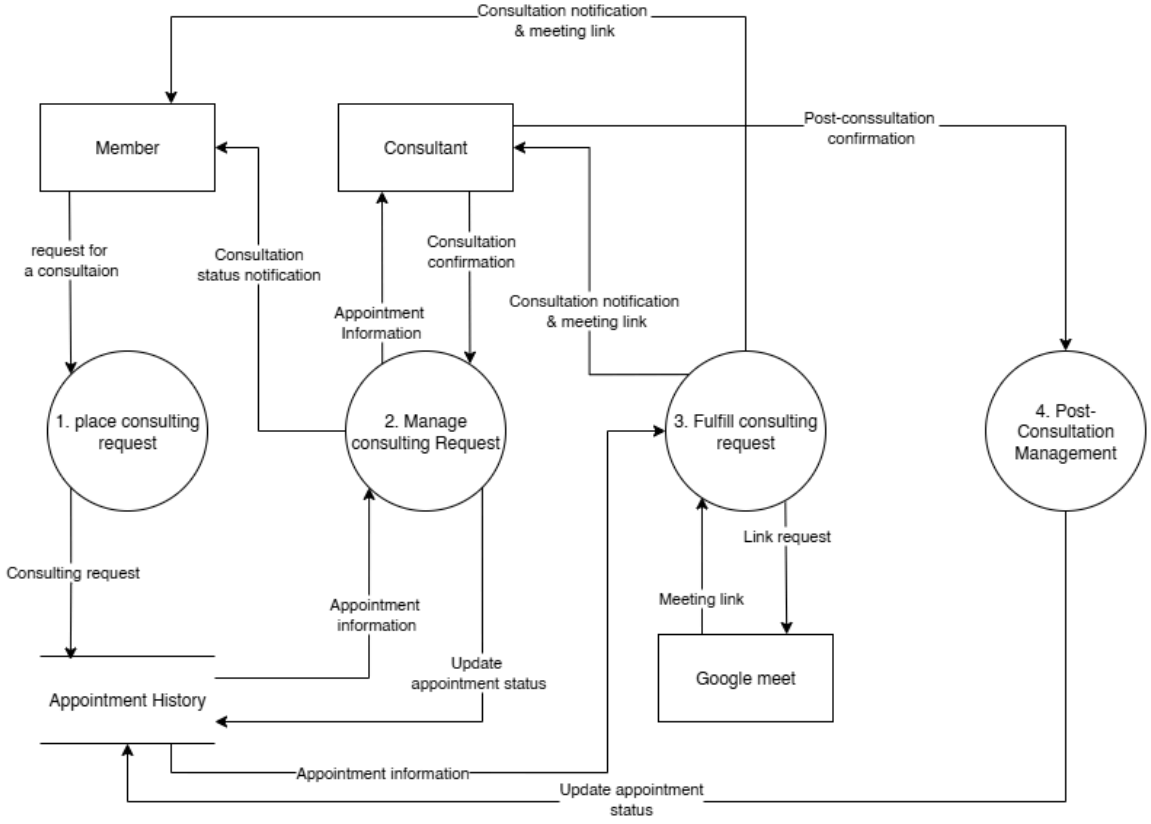


States:

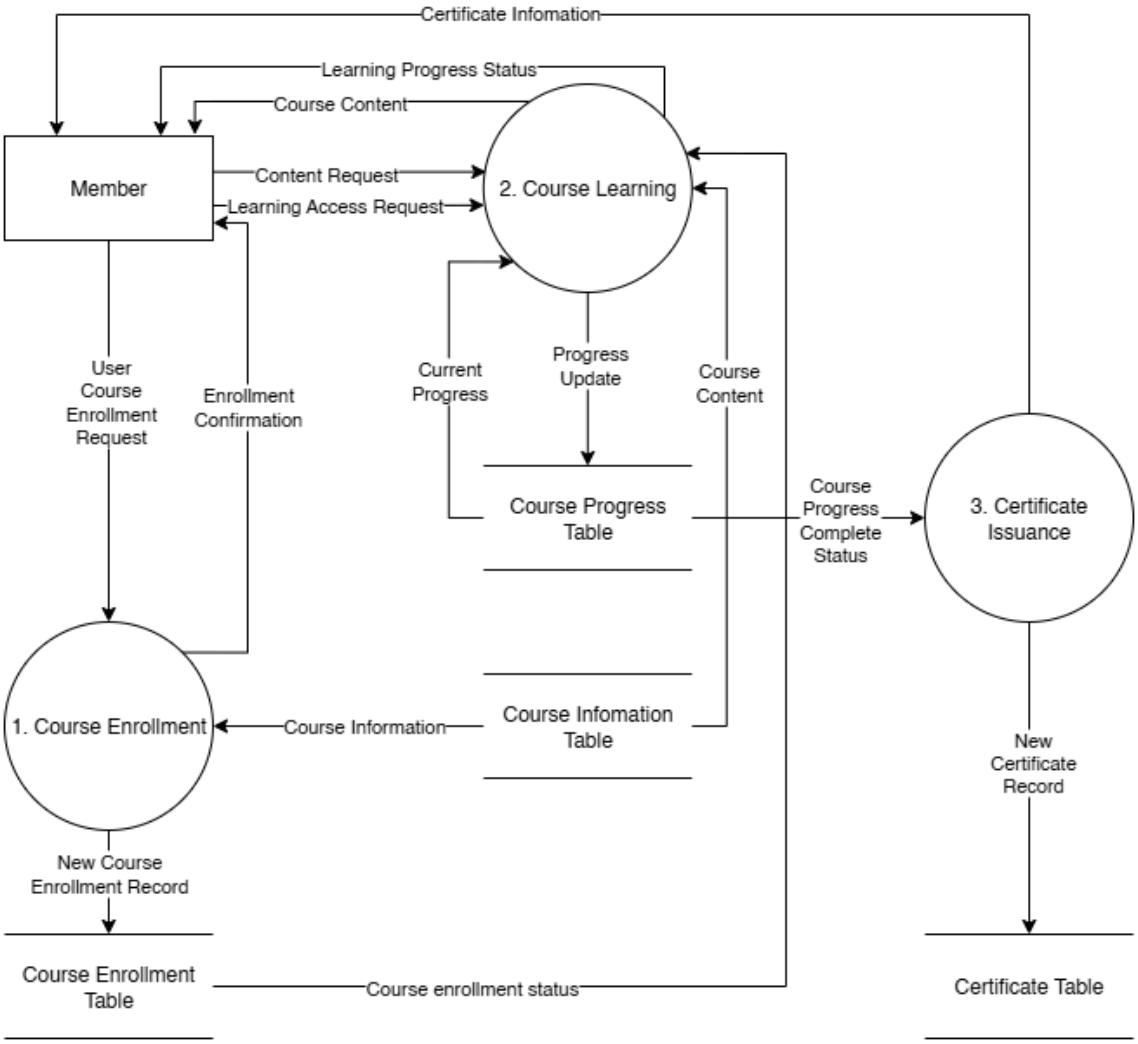
- Not Started: The user has not begun the survey. This is the default state before interaction.
- In Progress: The user has started answering the survey but has not completed it.
- Cancelled: The user exited or abandoned the survey before submission.
- Submitted: The user has finished and submitted the survey for evaluation.

3.4 Data flow Diagrams

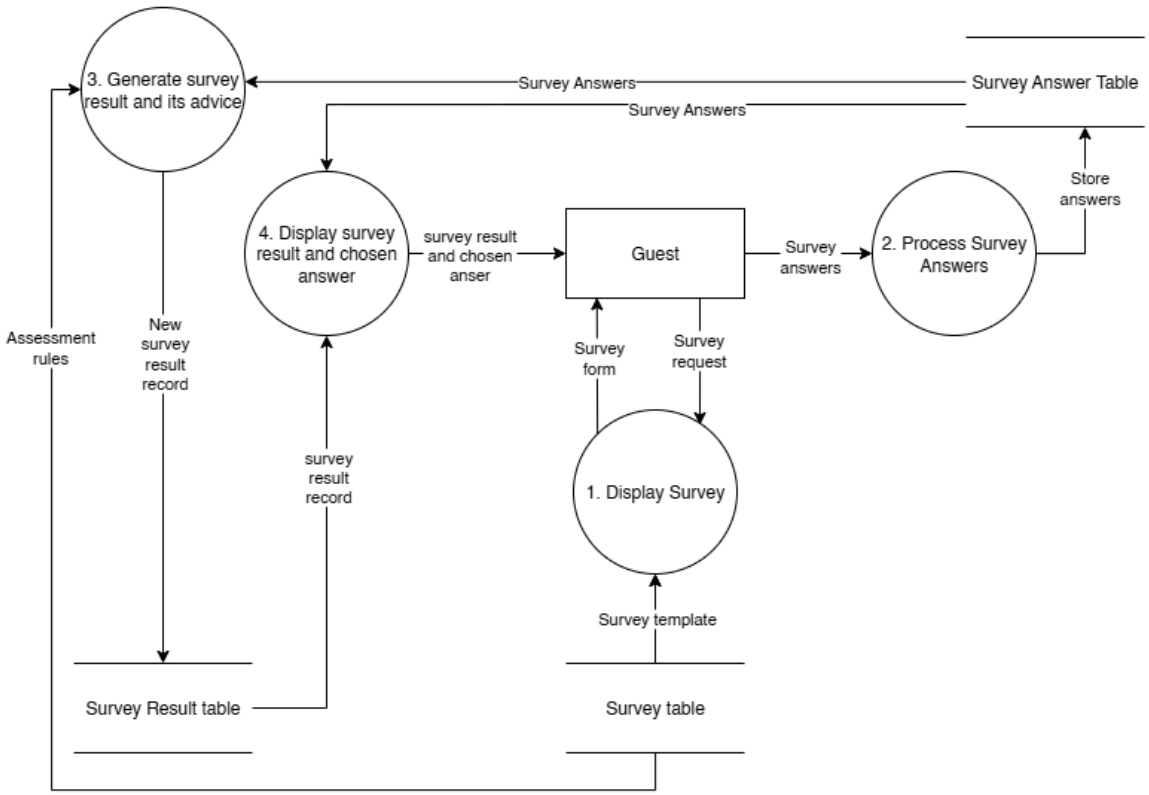
3.4.1 Make an appointment for consultation



3.4.2 Enroll an online training course



3.4.3 Take a survey



3.5 Logical Data Model

4 NON-FUNCTIONAL REQUIREMENTS

4.1 Usability

Usability Requirement One: User Training and Proficiency

Requirement Description: The system must be designed to minimize the training time required for users to become proficient in key operations.

- Normal User (Guest, Member):
  - Training Time: A normal user, with basic computer literacy, should be able to independently complete tasks such as Browse information, registering for a course, taking a survey (e.g., ASSIST, CRAFFT), or booking an online consultation within 15 minutes of their first interaction with the relevant module.
  - Productivity: After a maximum of 30 minutes of self-guided exploration, a normal user should be able to efficiently navigate the entire public-facing system and utilize all available self-service features.
- Power User (Staff, Consultant, Manager, Admin):
  - Training Time: A power user should be able to independently perform their specific administrative and content management tasks (e.g., managing communication programs, updating consultant profiles, generating reports) within 30 minutes of initial access to their respective dashboards.
  - Productivity: After 2 hours of guided training or self-exploration, a power user should be able to efficiently manage their assigned responsibilities within the system, including complex operations like program creation and data analysis.

Usability Requirement Two: Measurable Task Times for Typical Operations

Requirement Description: Key user tasks must be completed within specified timeframes to ensure efficiency and user satisfaction.

- For Guests/Members:
  - Search and Register for a Course: A user should be able to search for a course, select one, and complete the registration process within 2 minutes from the moment they land on the course listing page.
  - Complete a Risk Assessment Survey (e.g., ASSIST/CRAFFT): A user should be able to complete any self-assessment survey and view initial recommendations within 5 minutes (excluding the actual thinking time for answers).
  - Book an Online Consultation: A user should be able to book an appointment within 3 minutes.
- For Staff/Managers:
  - Create a New Communication Program Entry: A staff member should be able to create a new blog/survey/course, including basic details and associated survey links, within 5 minutes.
  - Generate a Basic Dashboard Report: A manager should be able to generate and view a default overview report (e.g., total course total blogs, total surveys, staffs, consultants) within 15 seconds.
- For Consultants:

- Update Daily Availability: A consultant should be able to take an appointment within 30 seconds.

Usability Requirement Three: Adherence to Usability Standards

Requirement Description: The system's graphical user interface (GUI) and interaction design must conform to established usability best practices and recognized standards to ensure consistency and a familiar user experience.

- Consistency: The system will maintain a consistent design language, including layout, color schemes, typography, and icon usage, across all modules and user roles.
- Feedback: The system will provide immediate and clear feedback for all user actions (e.g., success messages, error notifications).
- Error Prevention and Recovery: Design elements will aim to prevent errors where possible, and when errors do occur, provide clear, actionable messages for recovery.

4.2 Reliability

Reliability Requirement One: Availability

Availability: The system must maintain an availability of at least 99.5% during regular operational hours from 6:00 AM to 10:00 PM daily. Scheduled maintenance will occur from 10:00 PM to 11:00 PM every Sunday, during which the system will operate in a degraded mode, allowing access to basic information only.

Reliability Requirement Two: MTBF

Mean Time Between Failures (MTBF): The system must achieve an MTBF of at least 1000 hours of continuous operation without critical failures that cause a system halt.

Reliability Requirement Three: MTTR

Mean Time To Repair (MTTR): In the event of a failure, the system must be restored to full functionality within a maximum of 2 hours from the time the error is logged.

Reliability Requirement Four: Accuracy

Accuracy: The drug risk assessment results (e.g., based on the ASSIST survey) must maintain an accuracy of at least 95% in comparison to international standards (such as those set by WHO). Input and output data must maintain a maximum deviation of ±1%.

Reliability Requirement Five: Maximum Bugs or Defect Rate

Maximum Bugs or Defect Rate: The system must not exceed a defect rate of ≤ 1 bug per 1000 lines of code (KLOC) or ≤ 0.2 bugs per function point.

Reliability Requirement Six: Bug/Defect Categorization

Bug/Defect Categorization:

- Critical bug: A failure that results in complete data loss, inability to log in, or total inaccessibility to core system functions → must be fixed within 1 hour.
- Significant bug: A defect that causes partial data errors or UI issues that do not prevent core functionality → must be resolved within 12 hours.
- Minor bug: A cosmetic or textual error that does not affect functionality → must be resolved within 3 working days.

4.3 Performance

Performance Requirement One: System Throughput

The system must support a minimum throughput of 50 completed survey submissions or bookings per second under normal operating conditions, without any noticeable lag or degradation in user experience.

Performance Requirement Two: Response Time

For all primary customer actions (such as submitting a survey, booking an event, or navigating between core modules), the system must respond within 2 seconds 95% of the time under typical load.

Performance Requirement Three: Concurrent Users

The platform **must support at least 300 concurrent users** during regular online events or community campaigns, with seamless performance.

For large-scale or national campaigns, the system **must be scalable to accommodate at least 1,000 concurrent users**, ensuring continued availability and responsiveness.

Performance Requirement Four: Fault Tolerance and Data Persistence

In the event of connection loss or system interruption, user progress must be preserved (e.g., partial survey answers are not lost).

The system must provide **clear error notifications** and allow users to resume or recover ongoing actions with minimal disruption.

Performance Requirement Five: Scalability During Peak Events

The infrastructure must be designed to dynamically scale up during major campaigns (such as national survey days) to support tens of thousands of active participants simultaneously, with no downtime and no significant decrease in response time.

4.4 Reusability

Reusability Requirement One: Modular Component Design

Requirement Description:

The system must be architected with modular and reusable components to support future enhancements, Seduce development effort, and encourage maintainability.

Reusable Components Identified:

Component	Reused In
Authentication Module	Member login, Staff/Admin/Consultant login.
Survey Engine	Drug risk assessments (e.g., ASSIST, CRAFFT), Pre-/Post-program evaluations

User Profile Management	Members, Consultants, Admins,...

Reusability Requirement Two: Cross-Role UI and Logic Sharing

Requirement Description:

Interfaces and business logic shared across roles should be designed to avoid redundancy, reduce maintenance effort, and ensure consistency across user experiences.

Examples:

Shared Element	Used By
Course list & filter UI	Member, Staff and Manager
Survey result logic	Guest, Member
Appointment history viewer	Member, Consultant, Manager

Reusability Requirement Three: API Layer Reusability

Requirement Description:

All system services should be exposed through a documented and reusable API layer, enabling future integration with mobile apps, third-party platforms, and external reporting tools.

- REST APIs will be provided for:
  - Course registration
  - Survey submission and result retrieval
  - Appointment booking and updates
  - Viewing blog
- API responses will follow consistent formats (JSON), include versioning, and support role-based access.

4.5 Scalability

Scalability Requirement One: Effective Appointment Management

Requirement Description:

The system must efficiently manage up to **1,200 online consultation appointments per hour**, covering tasks such as scheduling new appointments, viewing appointment history, and canceling bookings. All actions, including confirmations and history display, must respond in **under 2 seconds**. The system should also be scalable to maintain this performance even if the number of users **doubles within the next 6 months**, ensuring a smooth experience for both members and consultants during busy periods..

Scalability Requirement Two: User Management

Requirement Description:

The system must be designed to **stably and efficiently handle up to 6,000 users**—including members, consultants, and managers—logged in and using features like account registration, profile updates, and viewing personal information at the same time. **Response times must remain under 3 seconds**, even if the number of new users **triples within one year**. This ensures a fast and reliable experience for everyone, from members seeking support to managers overseeing operations.

Scalability Requirement Three: Handling More Surveys and Courses

Requirement Description:

The system must be designed to **quickly and exactly handle a high volume of surveys and course registrations**. Specifically, it must process **2,500 surveys** (e.g., ASSIST, CRAFFT) and **600 course registrations per hour**, delivering survey results and course content within **4 seconds**. This performance must be maintained even if the number of users **doubles within the next 6 months**, ensuring all participants receive timely support through educational tools and risk assessments.

5 SUPPORTING INFORMATION