Requirements Documentation

CS 459: Software Engineering Senior Project

Spring 2025

Project Title	HCAR - Client Database
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Revision History:

Version	Date	Comments
0.0	1/28/2025	- Creation of Requirements Template / description for project
0.1	2/4/2025	- Appended elicited requirements for the project based on acceptance criteria
0.2	2/24/2025	- Added user story 2.1.9. - Changed user story 2.1.3. to have structured documents, not limited to excel sheets - Added and updated revision history for requirements document.
0.3	3/3/2025	- Added user stories 2.1.10 - 2.1.14 for HCAR's requested requirements - Adjusted other user stories to better express individual functionality
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1. Introduction

This Requirements Document will lay out the Functional / Non-Functional Requirements expected from the primary stakeholders/sponsors of this project. Traceability and working models representing the products expected functionality will be tied to their respective sections of this document.

Functional and Non-Functional Requirements elicited in this document are derived from user stories listed in the Requirements section below. Traceability between such requirements will be expressed through figures and diagrams in the Traceability section. This process of requirement elicitation can be referenced to the IEEE standards for Requirements Engineering.

2. Requirements

2.1. User Stories & Acceptance Criteria

2.1.1. Client Information View:

2.1.1.1. As a staff member, I want to be able to view client demographics and non-medical information to better serve our clients.

- [ ] AC1: System will show client information on the home page
- [ ] AC2: Client information is neatly organized by field (name, age, exp date)

2.1.2. Add New Clients:

2.1.2.1. As a staff member, I want to be able to add new clients to the database so that we can securely record client information.

- [ ] AC1: Creates a new client when user inputs all necessary information to the database
- [ ] AC2: Data is protected by a layer of security for confidentiality
- [ ] AC3: Data is backed up to the server to strengthen data integrity.

2.1.3. Uploading Client Documents:

2.1.3.1. As a staff member, I'd like to be able to upload my client documents in one location for convenience and so that I can see all my client’s information in one place.

- ☐ AC1: Able to import structured documents to autofill a client’s information page.
- ☐ AC2: Able to export a client’s information page into a formatted excel document.
- ☐ AC3: Should be able to import/export with the click of a button

2.1.4. View Client Documents:

2.1.4.1. As a staff member, I’d like to be able to view my client's documents in one location for convenience and so that I can see all my client’s information in one place.

- ☐ AC1: Staff member is able to upload client’s documents to the database.
- ☐ AC2: Documents are securely retrieved from the database for the staff member.
- ☐ AC3: Database is able to accept multiple documents per client.

2.1.5. PoS Notification / Report:

2.1.5.1. As a staff member, I’d like for the purchase of the service date of expiration to notify me (or turn red) in some way when it is getting close to expiring, so I can avoid missing this date and safely obtain another purchase of services in a timely manner.

- ☐ AC1: Database has a trigger to notify when a purchase of service is close to the expiration date (1 month)
- ☐ AC2: UI reflects the alert with a notification or turning the purchase of service red.

2.1.6. Case Notes:

2.1.6.1. As a staff member, I want to be able to write/upload case notes so that staff assigned to that client can be better informed about said client.

- ☐ AC1: Staff member is able to navigate to a client’s “profile.”
- ☐ AC2: Staff member is able to add multiple case notes to the client’s profile.
- ☐ AC3: Database is able to accept multiple case notes per client.
- ☐ AC4: Case note metadata is stored in the database upon case note creation(User and creation date)

2.1.7. View Previous Case Notes:

2.1.7.1. As a staff member, I want to be able to review case notes so that myself and others can be better informed about our clients.

- ☐ AC1: Staff member is able to navigate to a client's "profile."
- ☐ AC2: When a staff member navigates to the client's profile, a request is sent to grab the client's case notes securely.

2.1.8. Login:

2.1.8.1. As a staff member, I want to be able to log into the program so that I can keep client data securely protected.

- ☐ AC1: User is granted access when correct username and password is entered
- ☐ AC2: User is denied access if incorrect username OR password is entered
- ☐ AC3: User is denied access if missing username OR password

2.1.9. Automatic Logout:

2.1.9.1. As a staff member, I want the program to automatically log me out of the system if I am inactive for 5 minutes, to prevent other people from using my account while I am away.

- ☐ AC1: User is logged out of their account in the system if they are inactive for 5 minutes.

2.1.10. Client Filtering:

2.1.10.1. As a staff member, I want to filter the client list by Program, Purchase of Service expiration date, and by client demographics such as name, address, and program/service code so I can reach a specific client.

- ☐ AC1: The list of clients must have columns "Program", "Purchase of Service", "Expiration Date", "Client Name", "Client Address", and "Program/Service Code"
- ☐ AC2:

2.1.11. Forgot Password:

2.1.11.1. As a staff member, I want to be able to recover my account in case I forget my password, so I can continue using my designated account.

- ☐ AC1: A "Forgot Password" button must be added to the login page, which redirects the user to a page where they can enter their '@hcarcenter.org' email address.
- ☐ AC2: A manager must have access to an employee list where they can add, remove, and change password for employee accounts.

2.1.12. Customizable Reports:

2.1.12.1. As a staff member, I would like my reports to be customizable with a list of checkboxes for each information field, so when I go to export the data as a PDF I am given the requested fields.

- [ ] AC1: When going to export a client's data, checkboxes indicating whether specific fields should be included will be added before the user exports the file.
- [ ] AC2: The fields of data to have a checkbox will be structured to HCAR's existing documents, allowing the addition and removal of other prevailing data in the export.

2.1.13. Levels of Access:

2.1.13.1. As a Manager, I want to have a higher access level to the system that allows me to manage and control staff/directors in lower access tiers, so some sensitive business information and abilities can be blocked from the other users of the system.

- [ ] AC1: The Manager will be the highest privilege level for the system (under admins)
- [ ] AC2: Creating/Deleting user accounts, changing user passwords, and gathering automatically generated system/client reports must be features for the Manager access level.

2.1.14. Audit Trail:

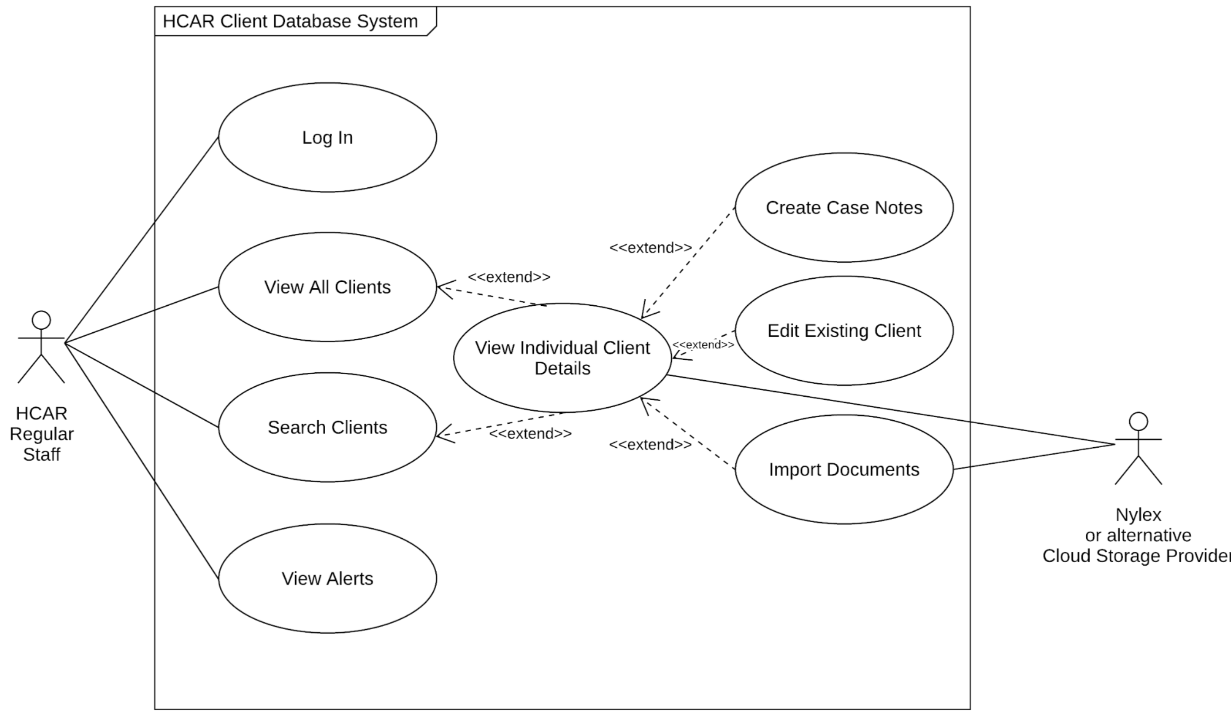
2.1.14.1. As a Manager, I want to be able to see edit history for a client my colleague recently modified, so that I can hold my colleague accountable for any mistakes they make and reduce the amount of errors in client files.

- [ ] AC1: There will be an edit history available to all employees for a given client
- [ ] AC2: This history must go back by a month, or by the last 5 changes made with timestamps and the name of the employee that modified the data.

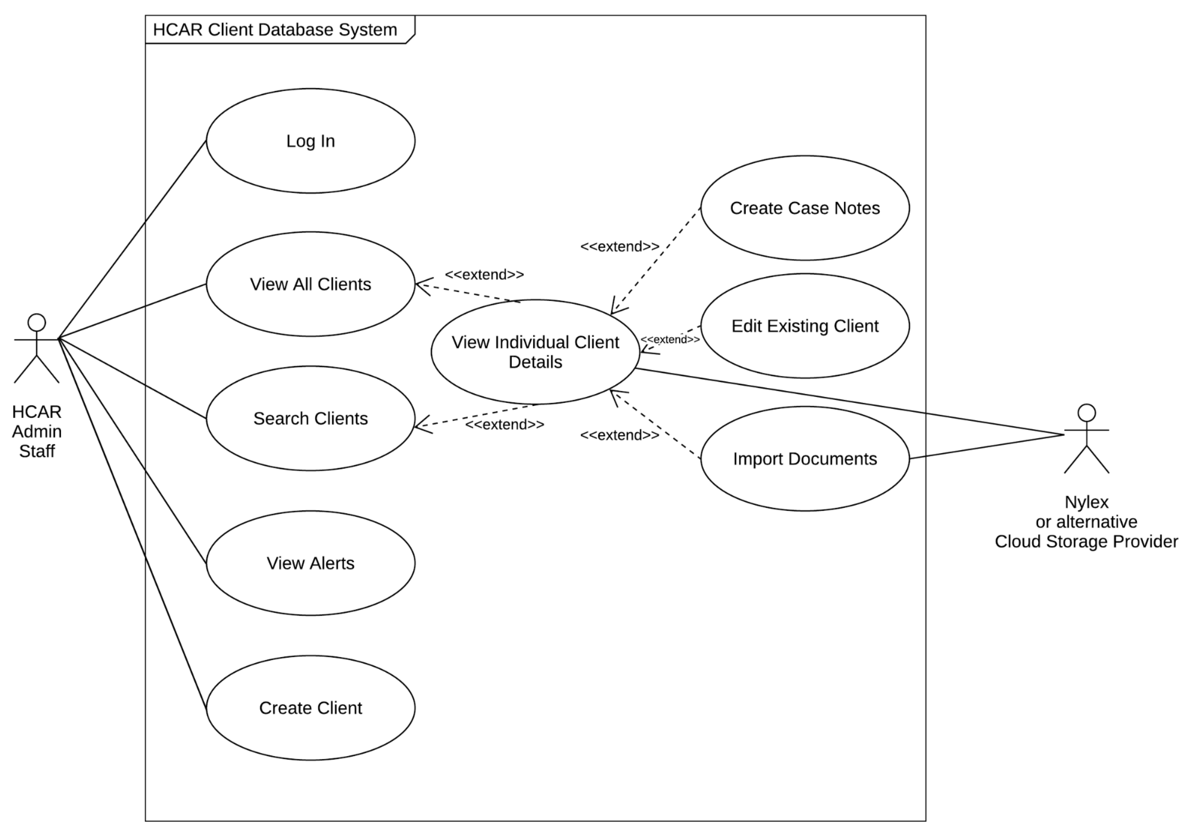
3. Traceability

3.1. Use-Case Model for Functional Requirements

3.1.1. Use-Case Model for Regular HCAR Staff



3.1.2. Use-Case Model for Admin HCAR Staff



3.2. Other Diagrams

4. Evidence of Configuration Management

5. Engineering Standards and Multiple Constraints

5.1. IEEE

5.1.1. IEEE Std 830-1998: Software Requirements [pdf]
5.1.2. IEEE Std 29148: Requirements Engineering [pdf]
5.1.3. ISO/IEC/IEEE Std 29148-2018: Systems and Software Engineering
5.1.4. Life Cycle Processes
5.1.5. Requirements Engineering [pdf]
5.1.6. Additional standards suggested by the sponsor(s)

5.2. Additional References

5.2.1. Lamsweerde, A.V., 2009. Requirements Engineering: From System Goals to UML Models to Software Specifications. John Wiley