Software Requirements Specification (SRS)
Course: CS 4850 – Section 04
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Professor: Sharon Perry
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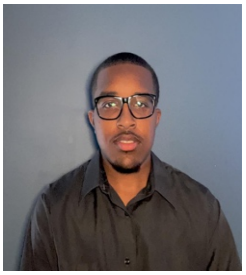
Project Title: Automation of Digital Intake with MS 365 – Carelink of Georgia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1.0 Introduction

1.1 Overview

CareLink of Georgia is a nonprofit healthcare provider that focuses on serving people who may not have insurance or reliable access to healthcare. Their mission is to provide care to underserved communities in Georgia by removing barriers and making services more accessible.

Right now, the way they handle new patient intake is still paper based. When the patients arrive, they are given paper forms to complete by hand. After that, staff members scan the forms and upload them into Methasoft, the patient management and billing system that Carelink currently uses. This process slows things down, creates extra work for staff, and sometimes leads to errors and/or delays.

Our project focuses on creating a digital intake system that allows patients to fill out and sign forms electronically instead of on paper. The completed forms will be stored securely in Microsoft 365 SharePoint, where staff can find them more easily and keep everything in one place.

Key ideas for this project:

- Patients fill out and sign forms digitally (at time of service in the clinic on a device).
- Staff no longer have to scan paper forms or chase signatures.
- Completed forms are stored in a structured way in SharePoint (PDF + JSON).
- CareLink staff get training and a repeatable guide so they can expand the system later on their own.

This project also includes a repeatable guide for CareLink staff, showing them how to digitize additional forms in the future, plus training materials so staff can use and maintain the new system confidently.

1.2 Project Scope

In Scope

The system we are building will include:

- Digitize one intake form
    - Take one of CareLink's existing paper intake forms and create a digital version with all required fields.
    - Include electronic signature capability using Adobe Sign.
- Submission options
    - Patients can complete and submit the form:

        - In the office on a tablet, kiosk, or desktop, using the same flow.
- SharePoint storage
    - All submitted forms will be automatically stored in SharePoint with:
        - A clear naming pattern (e.g., Patient Name + Form Name + Date).
        - Basic metadata such as submission date and who submitted it.
        - A signed PDF copy and a JSON file for structured data.
- Staff guide
    - A written guide that shows CareLink staff how to:
        - Digitize other forms using Microsoft 365 and Adobe.
        - Plug new forms into the existing workflow.
        - Manage and organize forms in SharePoint.
- Automation flows
    - A main Power Automate flow that:
        - Starts from the Form Selection Tool (Microsoft Forms).
        - Sends the chosen form to Adobe Sign.
        - Waits for the form to be signed.
        - Stores the signed PDF and JSON file in SharePoint.
- Training materials
    - Simple, step-by-step documentation and screenshots.
    - Short demo-style content explaining how staff should:
        - Use the Form Selection Tool.
        - Track and review completed forms.
        - Handle basic errors (e.g., if a patient does not sign).

Out of Scope

The following items are not part of this project:

- Direct integration with Methasoft or other EHR/billing systems
    - CareLink still uses Methasoft for patient records and billing, but our project will not connect to Methasoft or modify it.
    - Any uploads into Methasoft will remain a separate, manual process handled by staff if they choose to do it later.
- Billing or insurance features
    - We are not handling payments, insurance workflows, or clinical charting.
- Mobile app development
    - We are not building a separate mobile app.
    - The solution will be web-based and accessed through existing devices and browsers.

- Other third-party integrations
    - No direct integration with outside healthcare platforms beyond Microsoft 365 and Adobe Sign for this MVP.

1.3 Definitions and Acronyms

- M365: Microsoft 365 (SharePoint, Power Automate, Forms, Outlook).
- Methasoft: Patient management system currently used by Carelink.
- HIPAA: (Health Insurance Portability and Accountability Act) which is a U.S. law protecting patient health information
- PHI: Protected Health Information.
- OCR: Optical Character Recognition
- MVP: Minimum Viable Product

1.4 Assumptions

For this project, we are assuming:

- CareLink already has access to Microsoft 365 (including SharePoint, Power Automate, and Outlook).
- Staff will have access to digital devices such as tablets, laptops, or desktops in the clinic.
- No real patient data will be used during development or testing; only test or sample data.
- CareLink will assign a system administrator (M365 admin) after deployment to manage permissions and minor changes.
- Staff will need training and documentation to continue using and maintaining the workflows after the class ends.

1.5 References

- Carelink of Georgia official site: https://carelinkofgeorgia.org
- Microsoft 365 documentation (Forms, SharePoint, Power Automate)
- Adobe Acrobat & Adobe Sign Documentation
- HIPAA Compliance Guidelines (U.S. Department of Health & Human Services)

2.0 Constraints

2.1 Environment

- The system must run inside CareLink's existing Microsoft 365 environment.

- It must work over stable Wi-Fi at CareLink clinic locations (Rome and Austell).
- Users must be able to access the system using modern web browsers, including:
    - Microsoft Edge
    - Google Chrome
    - (Optionally) Safari on compatible devices
- The solution should work on:
    - Desktops and laptops (for staff)
- Tablets or kiosk-style setups (for patients in the clinic)

2.2 System

- Must meet HIPAA requirements, including encryption in transit and at rest (handled by M365 and Adobe Sign).
- Must use Microsoft 365 authentication with role-based permissions for access to forms and submissions.
- Must be designed, implemented, and tested within the Fall 2025 semester timeline and class milestones.

3.0 Functional Requirements

The system must provide at least the following functions:

3.1 Access and Security

Because this system will eventually handle PHI, access and security are important:

- Staff access will be managed through Microsoft 365 accounts.
- Role-based permissions in SharePoint will control who can:
    - View completed forms
    - Upload or update files
    - Manage libraries and settings
- Only authorized CareLink staff will be able to see submitted forms and related data.
- The system administrator will be able to update permissions if staff roles change.
- Documents can be shared securely on a case-by-case basis if CareLink chooses (for example, sending a copy to a patient).

3.2 Digital Intake Form

The main intake form will be built using Microsoft Forms (or a similar M365 form tool), because it:

- Works in a browser.
- Is easy for patients to use on different devices.

The digital intake form will:

- Include all required fields from CareLink's original paper form.
- Use required fields so patients cannot submit incomplete forms.
- Use basic validation (for example, date/phone formats where possible).

Patients will access the form through a link generated from the workflow (opened in-clinic by the staff members).

3.3 E-Signature

The intake form and signing process will be connected to Adobe Sign using Power Automate.

The system will:

- Take a blank form file from SharePoint.
- Create an Adobe Sign agreement for the selected form.
- Send it to the patient for signing (in-clinic device).

Patients can sign in several ways:

- Type their name
- Draw a signature
- Upload an image of their signature

After signing, Adobe will finalize the document and make it available for the workflow to store in SharePoint.

3.4 Submission and Notifications

Once the patient fills out and signs the form, Adobe Sign marks the agreement as completed.

The Power Automate flow will:

- Detect when the agreement is completed.
- Retrieve a signed PDF copy of the form.
- Save it into the correct SharePoint library.

The system will send email notifications (via Outlook) to the appropriate staff when a new signed form has been stored, so they know a new intake is ready.

Note: The current design does not route forms into Methasoft. Any future upload to Methasoft or another system would be handled separately and is not part of this SRS.

3.5 Storage in SharePoint

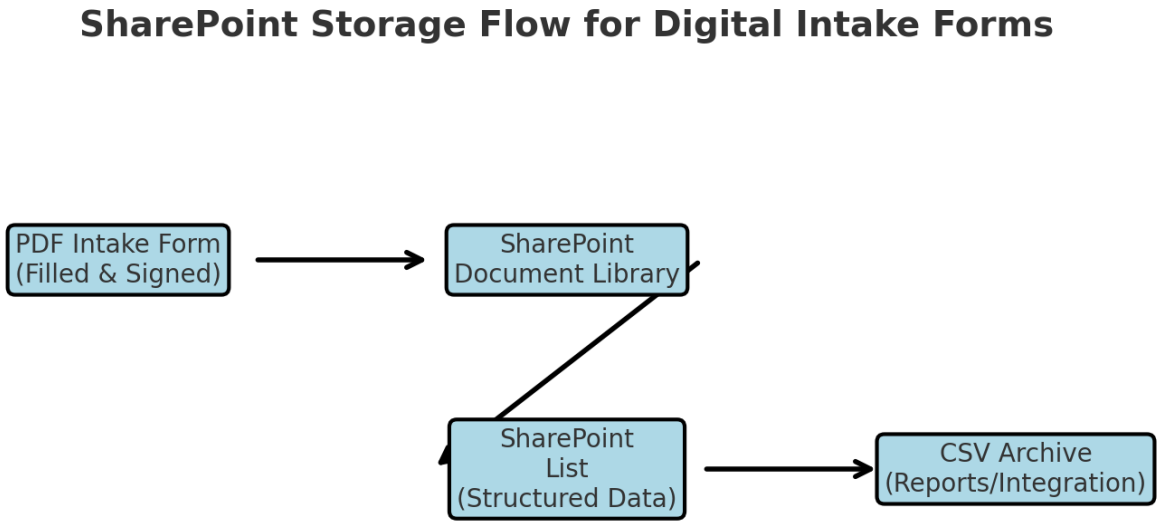
All submitted intake forms will be stored securely in Microsoft 365 SharePoint. The storage approach includes:

- Signed PDF Storage
    - Each completed, signed form is saved as a PDF in a dedicated library (for example, “Form Submissions”).
    - File names will follow a consistent pattern such as:
        - PatientName_FormName_Date.pdf
- Structured Data (JSON)
    - A JSON file will also be created for each submission.
    - This JSON file will contain key field values from the form (for example, patient name, date of birth, ID, etc.).
    - JSON makes it easier to connect to a database or create reports later, if CareLink chooses to do that.
- Search and Organization
    - SharePoint columns (metadata) will be configured so staff can:
        - Filter by patient name
        - Filter by form type
        - Filter by submission date

This design gives CareLink both a “document of record” (PDF) and a structured data representation (JSON) without needing a separate database right now.

For reporting and integration, SharePoint will also maintain a copy of the structured data in CSV format. These files will be generated through Power Automate flows and stored in a designated folder within SharePoint. This allows the staff to have access to both human-readable documents and machine-readable datasets.

3.6 Permissions and Roles



The system will use Microsoft 365 and SharePoint permissions to control access.

Example roles:

- General Staff (Nurses, Front Desk, Admin Staff)
  - Can view completed forms in the "Form Submissions" library.
  - Can search/filter forms by patient name, form type, or date.
  - Cannot change core library settings or permissions.
- Approvers / Supervisors (if CareLink chooses to use this)
  - Can review submissions for quality and completeness.
  - Can export structured data (JSON → CSV, if needed later) for reporting.
  - Can help manage naming conventions and views.
- System Administrator (M365 Admin)

    - Can update intake form structure over time (for example, add/remove fields).
    - Manages SharePoint permissions and access.
    - Ensures HIPAA and security settings are kept up-to-date.

Optional security measures, like additional password protection or extra review steps, can be added later if CareLink requests them.

3.7 Legacy Form Digitization Guide

The system will include a step-by-step guide that shows CareLink staff how to digitize other forms beyond the first one.

High-level process:

- Scan or obtain a clean PDF of the paper form.
- Use tools like Adobe Acrobat, Microsoft Forms, or AI (e.g., ChatGPT/OCR) to:
    - Identify fields on the form.
    - Map those fields into a digital version.
- Add the new digital form into the existing SharePoint “Blank Forms” library.
- Update or reuse the Power Automate workflow so the new form follows the same process (selection --> Adobe Sign --> SharePoint storage --> JSON).

This guide is meant to help CareLink staff continue to expand the system without needing a developer.

3.8 Automation Flows (Email/Excel)

Automation flows will be developed in Microsoft Power Automate to reduce manual work, enforce data consistency, and make sure timely notifications are sent to staff. The following flows are defined:

Flow #1: PDF Storage Flow

- Trigger: A patient submits a digital intake form.
- Action: Save the completed and signed form as a PDF in the designated SharePoint document library.
- Purpose: Preserve a compliance-ready copy of the intake form.

Flow #2: Data Extraction Flow

- Trigger: A patient submits a digital intake form.
- Action: Extract field values from the form and save them into a SharePoint list (which serves as the structured intake database).

- Purpose: Provide staff with searchable, filterable patient intake data.

Flow #3: Approval and Upload to Methasoft

- Trigger: New entries accumulate in the SharePoint list.
- Action: After a defined threshold (e.g. a certain number of entries or a set number of days/hours), designated approvers are notified by email.
- Approval: Approvers review the batch of new records for accuracy and compliance and once approved, the batch is exported as a CSV file and uploaded into Methasoft.
- Purpose: Ensure that only validated data is transferred into the official record system, while reducing the frequency of interruptions to staff.

Flow #4: Legacy Form Digitization Flow

- Trigger: A scanned legacy paper form is uploaded to a designated SharePoint folder.
- Action: Use Adobe PDF Services or AI Builder to extract field data, store extracted data in the SharePoint list, and save the scanned form as a PDF in the repository.
- Purpose: Convert legacy paper forms into structured, digital records consistent with new intake submissions.

This flow design ensures that all new and legacy patient intake records follow a consistent process.

3.9 Training and Support

To ensure successful usage of the digital intake system, training and support will be provided to Carelink staff and, if requested, to patients. The training and support plan includes the following components:

Training Guide + Videos:

To help CareLink use this system, we will provide them the following:

- Training Guide + Screenshots
    - How to use the Form Selection Tool.
    - How to track and open submitted forms.
    - How to verify that forms are stored correctly in SharePoint.
    - Basic troubleshooting steps (e.g., what to check if a form doesn't appear).
- Short Demo / Walkthrough
    - This may be in the form of slides or a recorded demo (depending on time), showing the full flow:
        - Staff chooses a form and a patient.

        - Patient receives link or signs in the office.
        - Signed form shows up in SharePoint.
- Pilot Use
    - A short “trial run” using test data where staff walk through the flow.
    - Collect feedback on pain points (for example, naming, views, or notification emails).
    - Adjust views and documentation based on what CareLink finds confusing.

It should be noted that support for this project is limited to the Fall 2025 semester. After the semester ends, the project team will no longer provide direct support unless CareLink chooses to involve the team through a separate agreement or contract.

4.0 Non-Functional Requirements

4.1 Security

All data must comply with HIPAA regulations for handling protected health information. The data must be encrypted both in transit and at rest (Microsoft 365 encryption). Optional features, such as password protection for intake forms, can be enabled if required by Carelink stakeholders.

Access to SharePoint libraries and lists will be role-based, with permissions limited to Carelink staff according to their responsibilities. Intake forms will require Microsoft 365 authentication for staff access. Patients will only access forms through secure links. Audit trails will be maintained through SharePoint and Power Automate logs to record submission activity and data access.

4.2 Performance

The system must support multiple simultaneous submissions without reduction in performance. Intake forms must load and submit within a reasonable time frame (target: under 5 seconds on a stable clinic Wi-Fi connection).

Automated flows should process submissions within 1–2 minutes from the time of patient submission to SharePoint storage. Batch exports to Methasoft must complete within scheduled windows without delaying clinic operations.

4.3 Usability

Intake forms must be designed with required fields, validation rules (e.g. correct phone and date formats), and clear instructions to reduce potential errors. They must be accessible through

modern browsers (Chrome, Edge, Safari) and function properly on desktops, laptops, and tablets. User interfaces must remain simple and intuitive, reducing the number of clicks required to complete submissions.

4.4 Reliability

The system must prevent data loss by maintaining both the original PDF and structured data in SharePoint. Automated flows will include error handling to flag incomplete or failed submissions and notify staff.

4.5 Maintenance

The digital intake system must be designed so Carelink staff can digitize additional forms without developer support, using the provided legacy form digitization guide. Power Automate flows and SharePoint lists will be documented to allow Carelink's designated administrator to update them as needed. System maintenance after the Fall 2025 semester will be the responsibility of Carelink unless a separate contract is agreed with the project team.

5.0 External Interface Requirements

5.1 User Interface

Patients:

- See a clean and simple digital form (through a link or in-office device).
- Are clearly told which fields are required.
- Can sign electronically using Adobe's signing interface.

Staff:

- Use the Form Selection Tool to choose:
  - Which form to send
  - Which patient to send it to
- Use SharePoint to view and manage submissions (PDF + JSON).

5.2 Hardware Interface

Patients:

- Tablets, kiosks, laptops, or desktops with a modern browser.

Staff:

- Laptops or desktops are recommended (easier for managing SharePoint and workflows).

No special hardware beyond typical clinic computers and tablets is required.

5.3 Software Interface

The main software components are:

- Microsoft Forms – Form Selection Tool and possibly the intake form base.
- Adobe Sign / Adobe Acrobat – Digital signatures and agreement management.
- Microsoft Power Automate – Automates the end-to-end process (Forms → Adobe → SharePoint).
- Microsoft SharePoint – Secure storage for blank forms, signed PDFs, and JSON data.
- ChatGPT / OCR tools – Optional tools to help digitize legacy paper forms when creating new digital versions.

5.4 Communication Interface

- Forms --> Power Automate
    - Uses the built-in Microsoft connector for form responses.
- Power Automate --> Adobe Sign
    - Uses the Adobe Sign connector to create and manage agreements.
- Power Automate --> SharePoint
    - Uses SharePoint connectors to read blank forms and write signed PDFs/JSON.
- Power Automate --> Outlook
    - Uses Outlook or M365 connectors to send email notifications to staff.

All communication happens over secure HTTPS connections inside the Microsoft 365 environment and Adobe's cloud services.

6.0 Analysis

6.1 Use Cases

Use Case 1: Patient Submits Form Before Visit

- Staff uses the Form Selection Tool to pick a form and enter the patient's email.
- The workflow sends an Adobe Sign link to the patient.
- The patient fills out and signs the form from home.
- The system saves the signed PDF and JSON in SharePoint.
- Staff receive a notification and can review the form before the appointment.

Use Case 2: Patient Completes Form In-Office

- Staff uses the Form Selection Tool while the patient is in the clinic.
- The link is opened on a clinic tablet or device for that patient.
- The patient fills out and signs on the device.
- The signed form is stored in SharePoint and staff are notified.
- Staff can use the information as part of their normal care and billing processes.

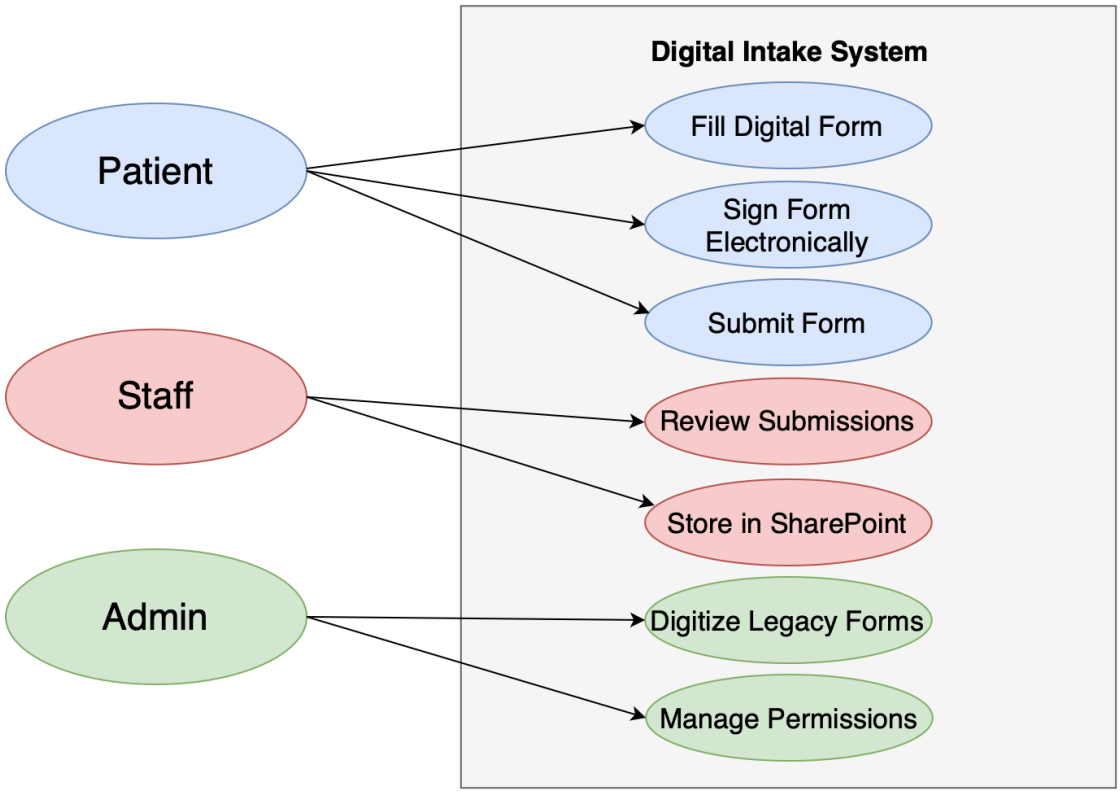
Use Case 3: Staff Digitizes a Legacy Form

- Staff identify an older paper form they want to convert.
- They scan the form and/or use Adobe / AI tools to map fields.
- They create a digital version and add it to the Blank Forms library.
- They configure the workflow so this new form can also be selected and sent for signing.

This keeps all forms (old and new) going through the same digital pipeline.

Figure 1: Use Case Diagram for Digital Intake System

This diagram below shows the main users (patients, staff, and administrators) and their interactions with the system. Patients can fill, sign, and submit forms. Staff review submissions and manage storage in SharePoint. Administrators oversee permissions and help digitize legacy forms.



6.2 Data Flow

The data flow can be described as follows:

Patient --> Digital Form (Forms/Adobe) --> Power Automate --> SharePoint --> Notification to Staff --> Optional upload to Methasoft

The figure below shows the overall data flow for the intake system. A patient begins by completing a digital intake form (through Microsoft Forms or Adobe Acrobat with signature support). Power Automate is used to route the submitted form into the secure SharePoint library. Notifications are then sent to Carelink staff so they can review the submission. If needed, staff can also upload the digital file into Methasoft, Carelink's existing patient management and billing system. This ensures continuity with their current operations while introducing a more efficient intake process.

Figure 1. Digital Intake Workflow

This diagram shows how patient data flows through the digital intake system, starting from form submission and ending with secure storage and optional Methasoft upload.