PDF Active-Reading Assistant
Project Plan

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4-29-2024 - v1.05

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1. Project Plan Revision History

Date	Author	Description
4-10-2024	nr	Created the initial document.
4-11-2024	rh	Added project Gantt chart.
4-12-2024	team	Finalized the initial document.
4-28-2024	nr	Made amendments to the initial document to reflect actual progress.
4-29-2024	team	Finalized the document.

2. Management Plan

2.1. Team organization

The team consists of Ryan Helms, William Qiu, Abie Safdie, Caleb Sutherland, and Nikhar Ramlakhan, all computer science students in CS 422. Each member contributes to both technical and organizational aspects of the project. Our team is structured to ensure collaboration and expertise in all aspects of the project. Nikhar Ramlakhan will also oversee project management and ensures adherence to documentation.

2.2. Work division amongst members

Tasks are allocated based on individual strengths and interests, ensuring a balanced workload and diverse skill set utilization. Nikhar and William focus on system setup and backend development, while Abie, Caleb, and Ryan handle user interface design and front-end development. Collaboration and cross-functional involvement are encouraged to foster a holistic understanding of the project.

2.3. Decision making protocols

Decisions are made collaboratively, with input from all team members. Major decisions require a super-majority vote (3 out of 5) to ensure consensus and representation of all perspectives. Major decisions will be documented and signed / initialed by all team members to ensure that a record is kept in case any future disputes or disagreements.

2.4. Team meetings and communication

Communication is facilitated through a Discord channel and a WhatsApp group channel for any group discussions outside of meetings. In addition, Discord will serve as the primary platform for providing progress updates, facilitating unscheduled meetings for development assistance, and promptly informing the team of any issues that can be addressed later. WhatsApp, on the other hand, will be reserved for emergency situations, ensuring immediate attention to urgent matters that require immediate resolution. Members are expected to communicate respectfully and within designated hours (8:00am to 10:00pm).

In-person meetings are held at the Allan Price Science Commons Library on the following dates and times:
- Monday, 8 April | 6:00pm to 8:00pm
- Friday, 12 April | 4:00pm to 5:00pm
- Monday, 15 April | 6:00pm to 8:00pm
- Friday, 19 April | 4:00pm to 5:00pm
- Monday, 22 April | 6:00pm to 8:00pm
- Friday, 26 April | 4:00pm to 6:00pm

All meeting minutes will be recorded and attached as an Annexure (Section 7.2).

3. Work breakdown schedule

3.1. Milestones

#	Projected Milestone	Projected Date
1.	Initial Project Plan, SRS and SDS	4/12/2024
2.	Server Setup	4/16/2024
3.	Note-Taking and PDF Viewing System Implementation for GUI	4/19/2024
4.	Question Prompting and Answering System	4/19/2024
5.	Database Setup	4/21/2024
6.	Integrate Server, Database and GUI	4/21/2024
7.	Server Setup Prompt and Admin Account	4/21/2024
8.	Homepage/Login Development for GUI	4/25/2024
9.	Pre-loaded PDFs and Sample Data	4/25/2024
10.	Revise Project Plan, SRS and SDS	4/29/2024
11.	Programmer Documentation	4/29/2024
12.	Installation Instructions	4/29/2024
13.	User Documentation	4/29/2024
14.	README	4/29/2024
16.	Prepare Project Presentation	4/30/2024

3.2. Project Schedules

Following the above milestones, the project schedule can be derived as follows:

Anticipated project schedule

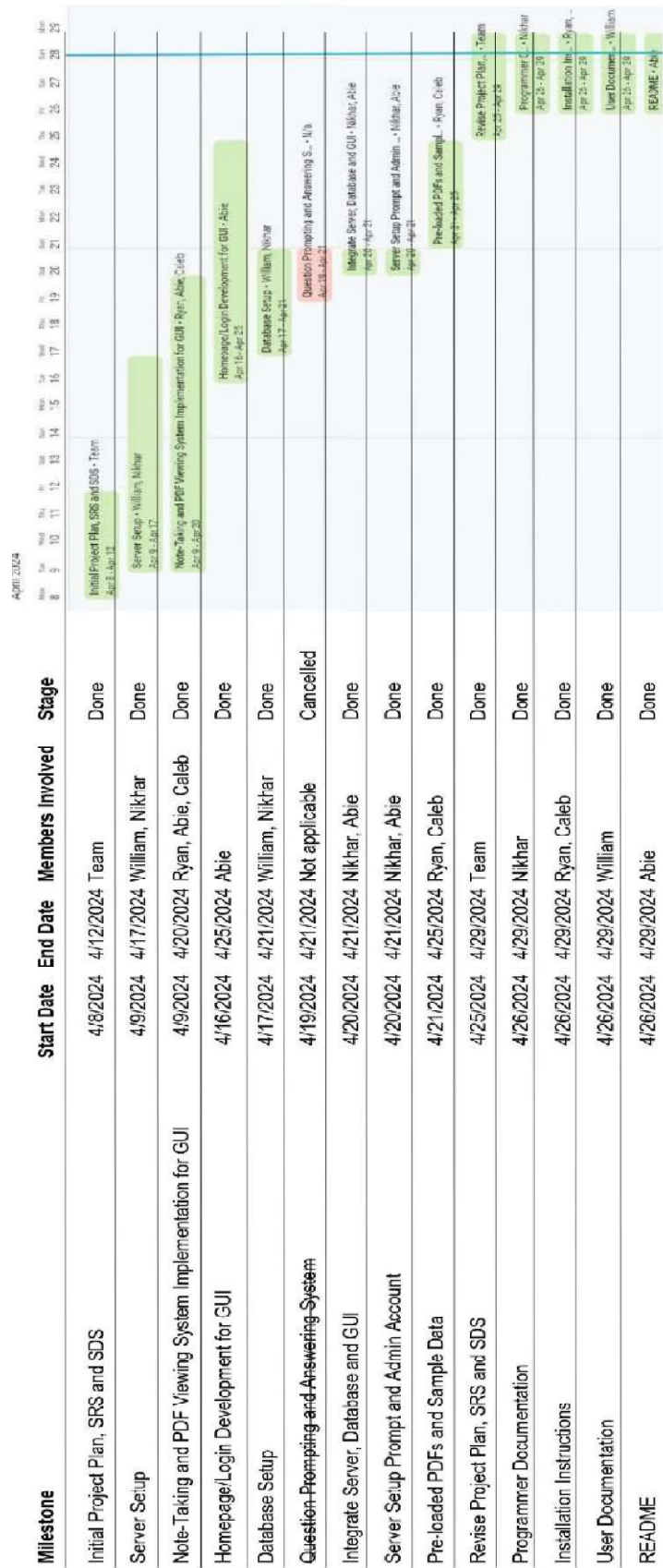| Milestone	Projected Date	Assigned Member
Initial Project Plan, SRS and SDS	4/12/2024	team
Server Setup	4/16/2024	wq, nr
Note-Taking and PDF Viewing System Implementation for GUI	4/19/2024	as, cs
Question Prompting and Answering System	4/19/2024	rh, as, cs
Database Setup	4/21/2024	nr
Integrate Server, Database and GUI	4/21/2024	nr, as
Server Setup Prompt and Admin Account	4/21/2024	wq
Homepage/Login Development for GUI	4/25/2024	rh, as
Pre-loaded PDFs and Sample Data	4/25/2024	rh, cs
Revise Project Plan, SRS and SDS	4/29/2024	team
Programmer Documentation	4/29/2024	nr
Installation Instructions	4/29/2024	rh, cs
User Documentation	4/29/2024	wq
README	4/29/2024	as
Prepare Project Presentation	4/30/2024	team

After completion of the project, the anticipated project schedule was updated as follows:

Actual project schedule

Milestone	Complete Date	Completed By
Initial Project Plan, SRS and SDS	4/12/2024	team
Server Setup	4/17/2024	wq, nr
Note-Taking and PDF Viewing System Implementation for GUI	4/20/2024	rh, as, cs
*~~Question Prompting and Answering System~~	~~4/19/2024~~	~~none~~
Database Setup	4/21/2024	wq, nr
Integrate Server, Database and GUI	4/21/2024	nr, as
Server Setup Prompt and Admin Account	4/21/2024	nr, as
Homepage/Login Development for GUI	4/24/2024	as
Pre-loaded PDFs and Sample Data	4/25/2024	rh, cs
Revise Project Plan, SRS and SDS	4/28/2024	team
Programmer Documentation	4/28/2024	nr
Installation Instructions	4/28/2024	rh, cs
User Documentation	4/28/2024	wq
README	4/28/2024	as
Prepare Project Presentation	4/29/2024	team

* Note: Question Prompting and Answering System was cancelled.

3.3. Project Gantt Chart

Milestone	Start Date	End Date	Members Involved	Stage
Initial Project Plan, SRS and SDS	4/8/2024	4/12/2024	Team	Done
Server Setup	4/9/2024	4/17/2024	William, Nikhar	Done
Note-Taking and PDF Viewing System Implementation for GUI	4/9/2024	4/20/2024	Ryan, Abie, Caleb	Done
Homepage/Login Development for GUI	4/16/2024	4/25/2024	Abie	Done
Database Setup	4/17/2024	4/21/2024	William, Nikhar	Done
Question Prompting and Answering System	4/19/2024	4/21/2024	Not applicable	Cancelled
Integrate Server, Database and GUI	4/20/2024	4/21/2024	Nikhar, Abie	Done
Server Setup Prompt and Admin Account	4/20/2024	4/21/2024	Nikhar, Abie	Done
Pre-loaded PDFs and Sample Data	4/21/2024	4/25/2024	Ryan, Caleb	Done
Revise Project Plan, SRS and SDS	4/25/2024	4/29/2024	Team	Done
Programmer Documentation	4/26/2024	4/29/2024	Nikhar	Done
Installation Instructions	4/26/2024	4/29/2024	Ryan, Caleb	Done
User Documentation	4/26/2024	4/29/2024	William	Done
README	4/26/2024	4/29/2024	Abie	Done

April 2024

Gantt bars:
- Initial Project Plan, SRS and SDS • Team — Apr 8 - Apr 12
- Server Setup • William, Nikhar — Apr 9 - Apr 17
- Note-Taking and PDF Viewing System Implementation for GUI • Ryan, Abie, Caleb — Apr 9 - Apr 20
- Homepage/Login Development for GUI • Abie — Apr 16 - Apr 25
- Database Setup • William, Nikhar — Apr 17 - Apr 21
- Question Prompting and Answering S... • N/a — Apr 19 - Apr 21
- Integrate Server, Database and GUI • Nikhar, Abie — Apr 20 - Apr 21
- Server Setup Prompt and Admin ... • Nikhar, Abie — Apr 20 - Apr 21
- Pre-loaded PDFs and Sample... • Ryan, Caleb — Apr 21 - Apr 25
- Revise Project Plan... • Team — Apr 25 - Apr 29
- Programmer D... • Nikhar — Apr 26 - Apr 29
- Installation Ins... • Ryan... — Apr 26 - Apr 29
- User Documen... • William — Apr 26 - Apr 29
- README • Abie — Apr 26 - Apr 29

4. Monitoring and reporting

4.1. Individual progress monitoring

Individual progress will be primarily monitored through the GitHub repository and the developer log / document log markdown file. Each team member is responsible for regularly updating the developer log / document log with their contributions, changes made, and revisions. This log will serve as a central hub for tracking individual progress and documenting project developments.

Regular team meetings will be held, providing an opportunity for members to report their progress, discuss any challenges or roadblocks, and coordinate on tasks. At the beginning of each meeting, members will provide updates on their individual contributions, which will be documented in the developer log / document log.

A copy of the developer / document log has been provided as an annexure (Section 7.1) to this document.

4.2. Project progress monitoring

Project progress will be monitored through various channels to ensure alignment with the project plan and objectives:

- Documentation Updates: Documentation, including the project plan, SRS, and SDS, will be continuously updated to reflect project progress and any changes or refinements made. During team meetings, documentation will be reviewed and revised as necessary to ensure accuracy and alignment with project developments.
- Communication Channels: WhatsApp and Discord will serve as additional avenues for minor updates, progress reviews, and ad-hoc discussions among team members. While major updates and progress reports will be documented in the developer log / document log, these communication channels will facilitate real-time collaboration and information sharing.
- Gantt Chart: A Gantt chart will be developed as part of project monitoring, providing a visual representation of project timelines, milestones, and dependencies. The Gantt chart will be updated regularly to reflect progress and any adjustments to the project schedule.

5. Build plan

5.1. System build plan

- Initial Setup
  - Establish development environment
  - Set up GitHub repository
  - Create project files and directories
- Server and Database Setup
  - Implement the server for storing program data
  - Develop system for storing user data and profiles
  - Set up database for storing user information
  - Create system to prompt user inputs for server setup
- General Graphical User Interface Development
  - Design and develop GUI for accessing PDF files and parsing text
  - Implement hierarchical SQ3R structure for capturing user notes
  - Develop system for hiding and unhiding notes
  - ~~Create system for cycling through questions in user notes~~
- Login Page
  - Develop system to validate user access.
- User Management and Authentication
  - Create system for managing user accounts and profiles
  - Develop functionality for pre-defining user accounts
- Integration and Testing
  - Integrate frontend and backend components
  - Conduct testing to ensure functionality and reliability
  - Address any bugs or errors identified during testing
- Deployment and Release
  - Prepare system for deployment to production environment
  - Develop deployment scripts and procedures
  - Release system to end-users
- Sample Data Preparation
  - Generate pre-loaded complete notes
  - Populate database with sample data for testing and demonstration purposes

5.2. Explanation of system build plan

1. Modularity and Scalability: Breaking the system into distinct components allows for modularity, making it easier to manage and scale the project. Each component can be developed, tested, and deployed independently, reducing complexity and facilitating future updates or expansions.

2. Clear Functionalities: Each step in the build plan corresponds to a specific functionality or feature of the PDF Active-Reading Assistant. This approach ensures clarity and focus, enabling the team to prioritize tasks effectively and deliver incremental value to users.

3. Risk Management: By identifying and addressing potential risks early in the development process, the build plan aims to mitigate project risks and uncertainties.

4. User-Centric Design: The build plan prioritizes functionalities that directly impact the user experience, such as GUI development, note-taking features, and PDF parsing capabilities. This user-centric approach ensures that the system meets the needs and expectations of its intended users, enhancing usability and satisfaction.

5. Progressive Enhancement: The build plan follows a progressive enhancement approach, starting with essential functionalities and gradually adding more advanced features. This incremental development strategy allows for early feedback from developers and users, enabling iterative improvements based on real-world usage and feedback.

5.3. Risks and risk reduction strategies

1. Research and Prototyping: Before proceeding with development, conduct thorough research and prototyping to explore potential solutions, identify technical challenges, and validate assumptions. This helps mitigate risks associated with unknowns and uncertainties.

2. Regular Testing and Quality Assurance: Implement robust testing processes, including unit tests, integration tests, and end-to-end tests, to identify and address bugs, errors, and inconsistencies. Prioritize quality assurance throughout the development lifecycle to ensure the reliability and stability of the system.

3. Continuous Communication and Collaboration: Foster open communication and collaboration within the team to address challenges, share insights, and align on objectives. Regular team meetings, progress updates, and discussions help identify and resolve issues promptly, minimizing the impact on project timelines and deliverables.

6. Acknowledgements

The content of this document is inspired by the Project 1 Evaluation Criteria provided by Prof. Anthony Hornof.

This document template is built and derived from SRS/SDS template provided by Prof. Anthony Hornof. Additionally, it builds on a document developed by Stuart Faulk in 2017, and on the publications cited within the document, such as IEEE Std 1016-2009.

7. Annexures

7.1. Development and Document Log

This log, initially in Markdown format, has been formatted for the purpose of this document.

<u>GUI:</u>

4/16:
- Basic homepage created. [as]

4/17:
- Fixed login page and added page switching between home and login. [as]

4/18:
- All three pages (homepage, login, notes) connected together. [as]
- Added GUI update to auto create unique buttons for the PDFs within the folder. [rh]

4/20:
- Added hide/show buttons for notes and save button to store to database. [as]
- Implemented indentation keeping. [cs]

4/21:
- Set up user control. [nr/as]
- Migrated PDF files, the app and server together. [nr/as]
- Set up notes to synchronize with the server. [nr/as]
- Admin page added. [nr/as]

4/22:
- Added SQ3R method into the GUI. [as]

4/24:
- Final version setup completed. [nr/as]

4/25
- Added example PDFS. [rh/cs]

<u>Server/Database:</u>

4/9:
- Set up a private Linux server for testing purposes. [wq]

4/14:
- Installed mysql-connector-python and pymongo on the server. [wq]

4/17:
- Set up the server on ix-dev. [nr]
- Created database, and tables for users, files, and notes. [nr]
- Tested server connection with Python. [nr]

4/21:
- Connected server with the program. [nr/as]

Document

4/10:
- Phase 1.00 of Initial Project Plan, SRS, SDS [nr]
    - Created initial project plan. (uploaded)
    - Created initial SDS. (uploaded)
    - Team decided to keep SRS as the standard handout

4/11:
- Phase 1.01 of Initial Project Plan, SRS, SDS
    - Drafted static and dynamic models for the SDS modules. [as/cs]
    - Created a dynamic usage case model for SDS. [wq]
    - Formatted and made minor revisions to the Project Plan. [nr]
    - Added a Gantt chart to the Project Plan. [rh]

4/12:
- Phase 1.02 of Initial Project Plan, SRS, SDS
    - Digital creation of SDS diagrams required. [team]
    - Finalized documents and combined them. [team]
    - Submitted the initial project plan, SRS, and SDS at 5:32 pm on April 12, 2024. [nr]

4/26
- Added code comments. [as]
- Created README. [as]
- Created installation instructions. [cs]

4/27
- Updated Gantt chart. [rh]

4/29:
- Created user documentation. [wq]
- Updated static and dynamic models. [wq]
- Updated SRS. [rh]
- Created server installation documentation. [nr]
- Updated project plan. [nr]
- Created technical documentation. [nr]

- Compiled final submission files. [team]

7.2. Meeting Minutes

Monday, 8 April | 6:00pm to 7:30pm | Allan Price Science Commons
Discussion items
- General design of the ARA
- Setting up a Github repository and means of communication
- Assessment of the team and allocation of roles based on individuals strengths and weaknesses.

Action items to be completed before next meeting
- Documentation for the Project Plan, SRS and SDS. [team]

Friday, 12 April | 4:00pm to 5:45pm | Allan Price Science Commons
Discussion items
- Reviewing the drafted Project Plans, SRS and SDS.
- Creating static and dynamic models for our components we anticipate using.
- Compiling the documents for our final submission.
- Submission was completed at 5:32pm by Nikhar Ramlakhan on Canvas.

Action items to be completed before next meeting
- Research resources to aid development [team]

Monday, 15 April | 6:00pm to 7:00pm | Allan Price Science Commons
Discussion items
- Means for note taking and the hierarchy of notes.
- Review SRS and approach to implementation of the software.
- Broke development into sub projects that could be conducted in parallel.

Action items to be completed before next meeting
- Set up the server. [wq/nr]
- Set up the user interface and basic PDF reader. [rh/as/cs]

Friday, 19 April | 4:00pm to 6:00pm | Deschutes Common Room
Discussion items
- Outcomes of our meeting with Prof. Hornof on our progress and developments.
- Team reviewed first working version of the user interface.
- Types of PDF documents to include in the project.
- Changing the SRS to facilitate having more than one SRS.
- Storing the PDFs within the project directory.

Action items to be completed before next meeting
- Integrate the server database and program together. [nr/as]
- Build example PDFs and pre annotated / highlighted PDFs [rh/cs]
- Compile server set up instructions [wq]

Monday, 22 April | 6:00pm to 6:30pm | Allan Price Science Commons
Discussion items
- Feedback on program and how it works.
- Analyzing system to SRS.

Action items to be completed before next meeting
- General debugging and code improvements. [nr/as]
- Final project documentation. [rh/wq/cs]

Friday, 26 April | 4:00pm to 6:00pm | Allan Price Science Commons
Discussion items
- Creating a list of final tasks that need to be completed.
- Testing server set up to the server installation document.
- Overview of the project evaluation criteria.
- Testing of working project to see if there are any other bugs or issues.

Action items to be completed before next meeting
- SRS [rh/wq/cs]
- SDS [rh/wq/cs]
- Project Plan [rh/nr]
- Readme [as]
- Programmer's Document [nr/as/cs]
- Installation Instructions [rh/cs/nr]
- User Documentation [wq]