
Group 06

VocaBoost
Software Development Plan
Version <1.0>

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Revision History

Date	Version	Description	Author
28/05/2025	1.0	Initial Project Plan creation including project overview, team organization, and management processes	All team's members

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Software Development Plan

1. Introduction

This Software Development Plan provides a comprehensive overview of the VocaBoost project development process, including project organization, management processes, and deliverables. The plan serves as a guide for the project team and stakeholders throughout the development lifecycle from May 19, 2025, to August 10, 2025.

2. Project Overview

2.1 Project Purpose, Scope, and Objectives

Purpose: VocaBoost aims to address the critical challenge of vocabulary retention in English learning by implementing a scientifically-proven Spaced Repetition system in an accessible web application format.

Scope: The project encompasses the development of a web-based vocabulary learning platform with the following core components:

- User authentication and profile management system
- Vocabulary list creation and management
- Spaced Repetition learning engine
- Multiple learning modes (Flashcards, Fill-in-the-blank, Word Association)
- Classroom management for teachers
- Progress tracking and analytics
- AI-powered example sentence generation

Objectives:

1. Deliver a fully functional web application that helps users retain vocabulary effectively
2. Implement the SM-2 Spaced Repetition algorithm for optimal learning intervals
3. Build a simple interface that's easy to understand and use.
4. Support both individual learners and classroom environments
5. Achieve 80% user satisfaction based on usability testing

2.2 Assumptions and Constraints

Assumptions:

- All team members will be available throughout the project duration
- Required technologies and tools will remain accessible
- All team members are proficient in the required technologies and methodologies
- Users have basic internet connectivity and modern web browsers
- Stakeholders will provide timely feedback and approvals throughout the project lifecycle

Constraints:

- Fixed project schedule of 12 weeks (May 19 - August 10, 2025)
- Zero budget (using free tools and resources only)
- Team size limited to 5 members with no additions during the project
- Must follow RUP and Scrum methodologies as specified in course requirements
- Development must align with course assignment deadlines

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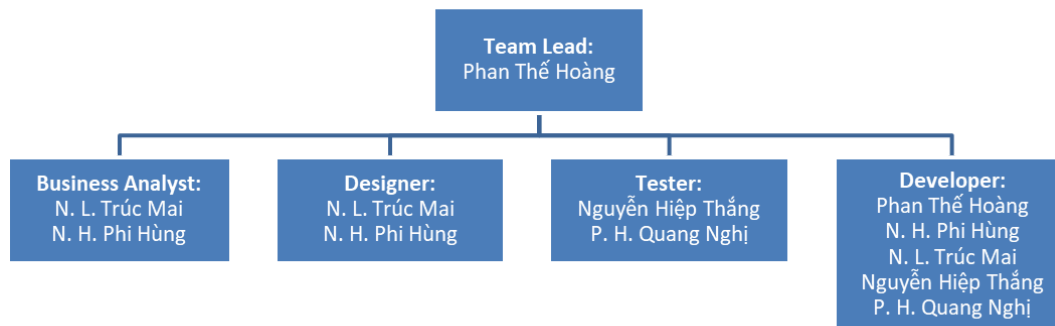
2.3 Project Deliverables

Deliverable	Description	Components	Target Date
PA0 - Project Proposal & Tools Setup	Team formation, project proposal, and development environment setup	<ul style="list-style-type: none"> • Team registration form • Project proposal document • Tool configuration (Slack, JIRA, Git) 	May 26, 2025
PA1 - Vision Document & Project Plan	Initial requirements documentation and project planning	<ul style="list-style-type: none"> • Vision document (1st submission) • Project plan (1st submission) • Weekly report 	June 1, 2025
PA2 - Use Case Model	Detailed requirements with use case diagrams and specifications	<ul style="list-style-type: none"> • Revised project plan (2nd submission) • Detailed vision document (2nd submission) • Use-case model (diagrams) • Use-case specifications • Weekly report 	June 15, 2025
PA3 - Architecture & Design	Software architecture document, class diagrams and database design	<ul style="list-style-type: none"> • Use-case specification (2nd submission) • Software Architecture Document (SAD) • Class diagrams for key components • Weekly report 	June 29, 2025
PA4 - Implementation Phase 1	Core features implementation with UI design and testing	<ul style="list-style-type: none"> • Revised SAD with deployment diagram • UI prototype (main screen + 3 key scenarios) • Working software (at least 1 main use-case) • Test plan document • Test cases (15+ test cases for 3 use-cases) • Test execution report • Folder structure documentation • Weekly report 	July 27, 2025
PA5 - Final Product	Complete implementation, testing, and project presentation	<ul style="list-style-type: none"> • Full feature implementation • Test cases for all implemented use-cases (3+ per use-case) • Test execution report with defects • Automated testing (2 use-cases, 2 scenarios each) • Project presentation (15 min presentation + 10 min Q&A) • Final submission package • Weekly report 	August 10, 2025

3. Project Organization

3.1 Organizational Structure

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3.2 Roles and Responsibilities

Role	PICs	Responsibilities
Team Leader	Phan Thế Hoàng	<ul style="list-style-type: none"> • Coordinate team activities and meetings • Monitor project progress and deadlines • Communicate with stakeholders (TAs, instructors) • Resolve conflicts and make final decisions • Review and approve major deliverables • Manage JIRA boards and sprints
Backend Developer	Phan Thế Hoàng Nguyễn Hiệp Thắng Phan Hoàng Quang Nghị	<ul style="list-style-type: none"> • Design and implement RESTful APIs • Implement Spaced Repetition algorithm (SM-2) • Develop business logic and data processing • Database integration and optimization • Implement authentication and authorization • Code review for backend components
Frontend Developer	Nguyễn Hoàng Phi Hùng Nguyễn Lê Trúc Mai Phan Hoàng Quang Nghị	<ul style="list-style-type: none"> • Implement user interface components • Integrate with backend APIs • Ensure responsive design across devices • Implement learning modes (flashcards, fill-in-blank) • Handle client-side state management • Code review for frontend components
Business Analyst	Nguyễn Hoàng Phi Hùng Nguyễn Lê Trúc Mai	<ul style="list-style-type: none"> • Gather and document requirements • Create use case diagrams and specifications • Conduct user interviews and surveys

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		<ul style="list-style-type: none"> • Validate requirements with stakeholders • Update vision document • Ensure features align with user needs
Tester	Nguyễn Hiệp Thắng Phan Hoàng Quang Nghị	<ul style="list-style-type: none"> • Develop test plan and strategies • Design test cases for all use cases • Execute manual testing • Set up automated testing framework • Document and track defects • Prepare test reports and metrics
System Designer	Nguyễn Hoàng Phi Hùng	<ul style="list-style-type: none"> • Create software architecture document • Design system components and interactions • Create class diagrams and sequence diagrams • Define technology stack • Design deployment architecture • Ensure scalability and maintainability
UI/ UX Designer	Nguyễn Lê Trúc Mai	<ul style="list-style-type: none"> • Design wireframes and mockups • Create UI prototypes • Define visual design guidelines • Conduct usability testing • Ensure consistent user experience • Design responsive layouts

4. Management Process

4.1 Project Estimates

None

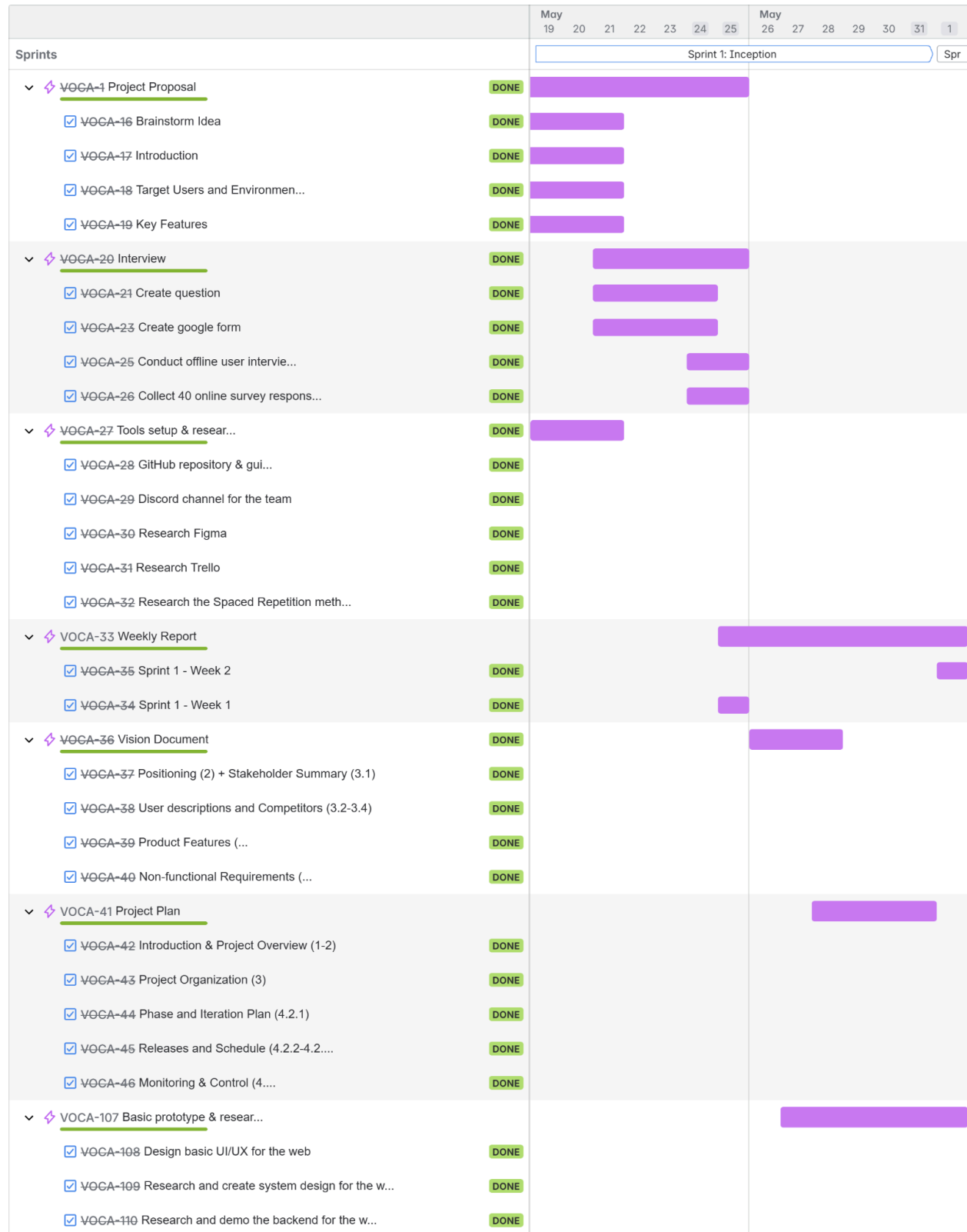
4.2 Project Plan

4.2.1 Phase and Iteration Plan

Phase 1: Inception (Sprint 1)

- Duration: May 19 - June 1, 2025
- Objectives:
 - Establish project plan and project vision document
 - 2 weekly reports
 - Form team and assign roles
 - Set up development environment
 - Conduct user research and interviews

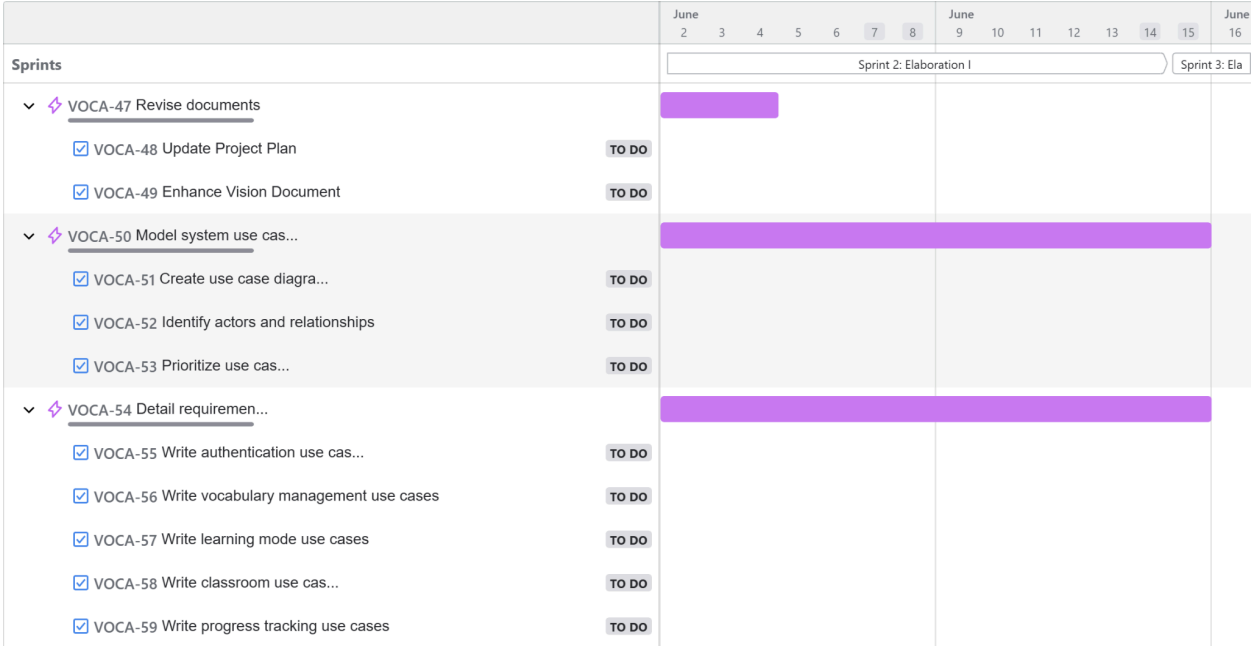
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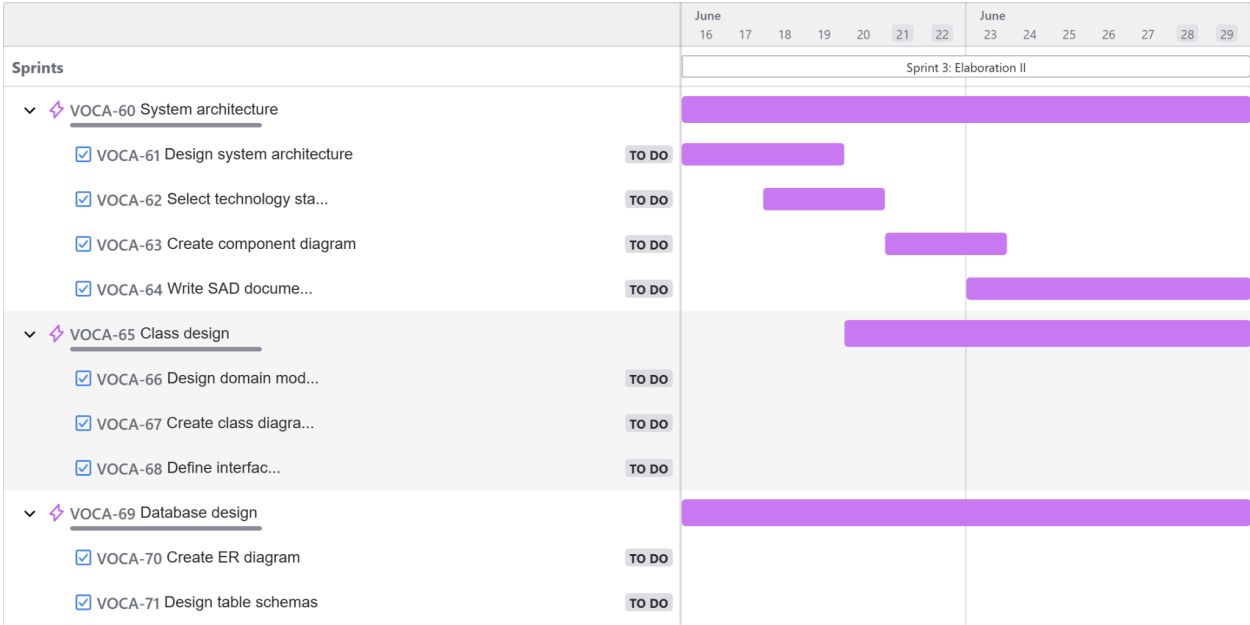
Phase 2: Elaboration (Sprints 2-3)

- Duration: June 2 - June 29, 2025
- Sprint 2 (June 2-15):
 - Complete detailed requirements
 - Create use case models
 - Design system architecture
 - 2 weekly reports



- Sprint 3 (June 16-29):
 - Finalize architectural design
 - Create detailed class diagrams
 - Design database schema
 - Plan testing strategy
 - 2 weekly reports

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Phase 3: Construction (Sprints 4-5)

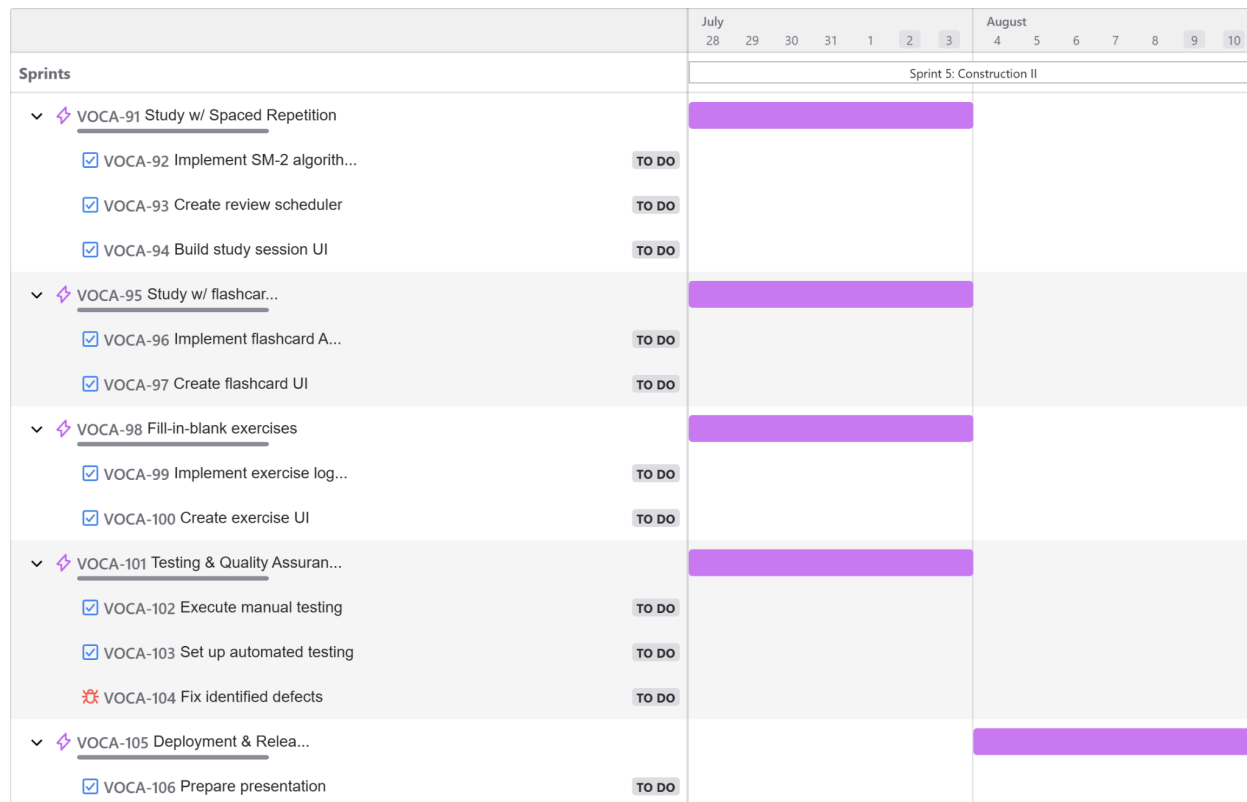
- Duration: July 14 - August 10, 2025
- Sprint 4 (July 14-27):
 - Implement core features
 - Develop UI components
 - Create test cases
 - 2 weekly reports

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		July							July						
		14	15	16	17	18	19	20	21	22	23	24	25	26	27
Sprints		<div>Sprint 4: Construction I</div> <div>Sprint 4: Construction I</div>													
▼	🔗 VOCA-76 Login/logout														
	☑ VOCA-77 Implement auth API with J...	TO DO													
	☑ VOCA-78 Create login UI	TO DO													
	☑ VOCA-79 Handle session manageme...	TO DO													
▼	🔗 VOCA-80 Create vocabulary lists														
	☑ VOCA-81 Implement CRUD A...	TO DO													
	☑ VOCA-82 Create list management UI	TO DO													
	☑ VOCA-83 Add validation	TO DO													
▼	🔗 VOCA-84 Add words to lists														
	☑ VOCA-85 Implement word A...	TO DO													
	☑ VOCA-86 Create word input...	TO DO													
▼	🔗 VOCA-88 Create Test Plan														
	☑ VOCA-87 Define test strategy	TO DO													
	☑ VOCA-89 Design test cases	TO DO													
	☑ VOCA-90 Set up test environment	TO DO													

- Sprint 5 (July 28 - August 10):
 - Complete feature implementation
 - Conduct comprehensive testing
 - Prepare deployment
 - Project presentation
 - 2 weekly reports

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4.2.2 Releases

Release	Type	Date	Features
v0.1	Internal Alpha	June 29, 2025	Basic authentication, vocabulary list CRUD
v0.2	Internal Beta	July 27, 2025	Spaced Repetition engine, learning modes
v1.0	Final Release	August 10, 2025	All features complete with testing

4.2.3 Project Schedule

Key Milestones:

1. **Project Kickoff** - May 19, 2025
2. **Requirements Complete** - June 15, 2025
3. **Architecture Finalized** - June 29, 2025
4. **Core Features Implemented** - July 27, 2025
5. **Project Completion** - August 10, 2025

Weekly Schedule:

- **Monday & Wednesday:** Offline meeting at library, documentation work (3 hours)
- **Tuesday:** Documentation and planning
- **Thursday & Friday:** Development work (4 hours/day)

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- **Saturday:** Self-study and research
- **Sunday:** Sprint review and retrospective meeting

4.3 Project Monitoring and Control

4.3.1 Reporting

Communication Plan:

1. **Offline Meetings** (Monday & Wednesday at Library & optional meeting)
 - Duration: 3 hours per session
 - Focus: Sprint planning, task coordination, pair programming
 - Documentation review and updates
 - Problem-solving sessions
2. **Sprint Review Meeting** (Sunday)
 - Full team retrospective
 - Demo of completed features
 - Planning for next sprint
 - Performance evaluation
3. **Documentation Days** (Thursday)
 - Individual documentation work
 - Async collaboration via Google Docs
 - Comment and review cycles
4. **Emergency Communication**
 - Discord for urgent issues
 - Phone calls for critical blockers
 - Response time: within 2 hours during working hours

4.3.2 Risk Management

None

4.3.3 Configuration Management

Version Control:

- Repository: GitHub (<https://github.com/itshoang2024/Intro2SE-23CLC06-Group06.git>)
- Branching Strategy: Git Flow
 - **main:** Production-ready code
 - **develop:** Integration branch
 - **feature/*:** Individual feature branches
 - **hotfix/*:** Emergency fixes

Code Review Process:

1. All code must be reviewed before merging
2. At least one approval required

Change Management:

- All changes must be tracked in JIRA
- Major changes require team consensus
- Change impact analysis required for scope changes