Monen: A new way to learn

**Software Development Plan**

**Version 1.0**

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**Revision History**

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**Software Development Plan (Small Project)**

# **Introduction**

## **Purpose**

The purpose of the *Software Development Plan* is to provide a guideline for the development team to follow, ensuring that the project stays on track and meets its objectives. It provides a means to communicate and collaborate between the development team and other stakeholders. It also helps to identify and avert potential risks.

The following people use the Software Development Plan:

* The **project manager** will use the SDP to plan and track the project, and to communicate with stakeholders.
* The **development team** members will use the SDP to understand their tasks and responsibilities and to coordinate their work with other team members.
* **Testers** will use the SDP to understand the features and functionality of the app and to develop test cases.

## **Scope**

This Software Development Plan (SDP) describes the overall plan to be used by the Monen project, including the development of the product. The details of individual iterations will be described in the Iteration Plans.  
The plans outlined in this document are based upon the product requirements as defined in the Vision Document.

## **Overview**

This *Software Development Plan* contains the following information:

Project Overview — provides a description of the project's purpose, scope, and objectives.  It also defines the deliverables that the project is expected to deliver.

Project Organization — describes the organizational structure of the project team.

# **Project Overview**

## **Project Purpose, Scope, and Objectives**

**Project Purpose:**

The purpose of this project is to develop a modern and interactive flashcard application called "Monen". Monen aims to provide an engaging and efficient learning experience by combining the concept of flashcard revision with playing games. This app is designed to make learning enjoyable and interactive while catering to a wide range of learners.

**Project Scope:**

The project encompasses the entire software development life cycle of Monen, including requirements analysis, design, development, testing, and deployment. It also involves the creation of supporting documentation and user guides. The scope of the project extends to delivering both mobile versions for iOS and Android platforms.

**Project Objectives:**

Create an Engaging Learning Environment: Develop a user-friendly app that offers engaging learning experiences through gamified activities.

Encourage Collaboration: Enable users to interact with each other through multiplayer games, class setups, and forums.

Customization and Personalization: Allow users to customize flashcards and personalize their learning journey.

Enhance Accessibility: Ensure that Monen is accessible to users on both iOS and Android, providing a convenient way to study on the go.

Promote Consistent Learning: Implement features like daily attendance and achievements to motivate users to study regularly.

Provide Quality Content: Allow users to access a library of flashcard decks created by others, ensuring the availability of valuable learning resources.

## **Assumptions and Constraints**

*[A list of assumptions that this plan is based on and any constraints, for example. budget, staff, equipment, schedule, that apply to the project.]*

Assumptions:

The project assumes that there will be access to the necessary budget and resources for development.

It assumes that the team has the required skills and expertise for software development.

The project assumes that users will have access to smartphones running iOS or Android.

Constraints:

Budget constraints may affect the scope and features of the app.

The availability of skilled staff may impact the project timeline.

Constraints related to hardware and software compatibility may arise during development.

## **Project Deliverables**

*[A list of the artifacts to be created during the project, including target delivery dates. The text below is provided as an example.]*

The project will deliver the following artifacts:

Monen flashcard DEMO application (Target Delivery: [Date])

Monen authentication (Target Delivery: [Date])

Multiplayer games and collaborative features (Target Delivery: [Date])

User guides and documentation (Target Delivery: [Date])

Access to a library of flashcard decks (Target Delivery: [Date])

Daily attendance and achievement features (Target Delivery: [Date])

Third party social network integration (Target Delivery: [Date])

Application customization (Target Delivery: [Date])

# **Project Organization**

## **Organizational Structure**

*[Describe the organizational structure of the project team, including management and other review authorities.]*

The organizational structure of the project team for the development of Monen is designed to efficiently manage and oversee the various aspects of the project. The project team consists of the following key roles:

Project Manager (PM): The Project Manager is responsible for overall project management, including planning, resource allocation, and monitoring project progress. The PM ensures that the project stays on track and is completed within the established timeline and budget.

Development Team: The development team includes software engineers, designers, and developers responsible for creating the Monen flashcard application for iOS and Android.

Quality Assurance (QA) Team: The QA team is tasked with testing the application, identifying and reporting issues, and ensuring the final product meets the required quality standards.

User Experience (UX) Designers: UX designers focus on creating an intuitive and user-friendly interface for the application, ensuring that users have an enjoyable and efficient experience.

Game Designers: Game designers work on custom-designed games integrated into the learning experience to make it engaging and interactive.

## **Roles and Responsibilities**

*[Identify the project organizational units that will be responsible for each of the disciplines, workflow details, and supporting processes. The text below is provided as an example.]*

| **Person** | **Role** |
| --- | --- |
| Nguyễn Nhật Quang, Software Engineer  Phùng Quang Minh Huy, Software Engineer  Huỳnh Đăng Khoa, Software Engineer  Trần Minh Khoa, Software Engineer | Responsible for software development and coding.  Workflow details: This team will follow the software development life cycle (SDLC) to design, code, test, and deploy the application. |
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|
| Phùng Quang Minh Huy, Project Manager | Responsible for overall project management.  Workflow details: Planning, resource allocation, and project monitoring.  Supporting processes: Risk management, stakeholder communication, and project reporting. |
| Nguyễn Nhật Quang, UX Designer  Trần Minh Khoa, UX Designer | Responsible for designing the user interface and enhancing user experience.  Workflow details: Creating wireframes, prototypes, and user interface designs.  Supporting processes: User testing, feedback analysis, and design iteration. |
|
| Huỳnh Đăng Khoa, Quality Assurance  Trần Minh Khoa, Quality Assurance  Phùng Quang Minh Huy, Quality Assurance | Responsible for testing the application to ensure quality and functionality.  Workflow details: The QA team will create test cases, execute testing, and report defects.  Supporting processes: Test plan creation, defect tracking, and regression testing. |
|
|
| Nguyễn Nhật Quang, Game Designer  Huỳnh Đăng Khoa, Game Designer | Responsible for creating custom games within the application.  Workflow details: Game concept creation, game design, and integration with the learning experience.  Supporting processes: User feedback incorporation, game testing, and updates. |
|

# **Management Process**

## **Project Estimates**

## **Project Plan**

### *Phase Plan*

Phase 1: Design

Estimated Duration: 2 weeks

Objective: Analyze user requirements, design the user interface and user experience, and establish a detailed plan for the next phase.

Phase 2 :Develope

Estimated Duration: 2 weeks

Objective: Develop and design all essential pages required for the app, ensuring a seamless and user-friendly interface.

Phase 3: Add Features and Demo

Estimated Duration: 2 week

Objective: Develop the Demo application, with integrated games and all basic features. Build the Demo.

Phase 4: Add Feature

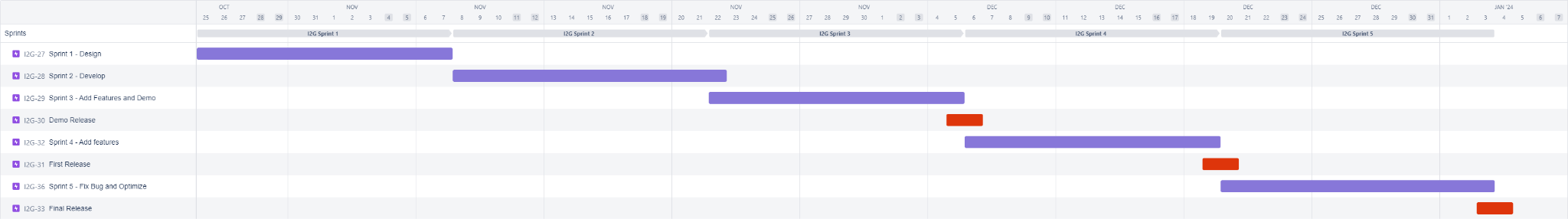
Estimated Duration: 2 week

Objective: Test the application, identify and report issues, and ensure quality and performance. Build the first release

Phase 5:Fix Bug and Optimize

Estimated Duration: 2 week

Objective: Deploy the application to app stores, monitor performance, and collect user feedback. Build the final release



### *Iteration Objectives*

- Sprint 1: Complete the app design

* Write the Vision Documentation
* Write the Software Development Plan
* Setup Environment
* Design User Interface
* Database design
* Design games

- Sprint 2: Add new features

* Create Register Page
* Create Login Page
* Create Home Page
* Code the Flashcard Page
* Code the Flashcard Deck Page
* Create User Profile

- Sprint 3:Create the first Demo

* Create the Flashcard Deck storing system
* Create Search Bar with Search Engine
* Code games
* Create the Flashcard Deck learning mode
* Create Course Feature

- Sprint 4:Add new feature

* Connect the 3rd party to send reminders via mail or notifications
* Customize App Theme
* Write the user guiding Documentation

- Sprint 5: Fix bug and optimize

* Fix bugs
* Optimize code

### *Releases*

**Demo**

During the Prototype Phase, a functional version of the application will be created, consisting of all essential features necessary for comprehensive use.

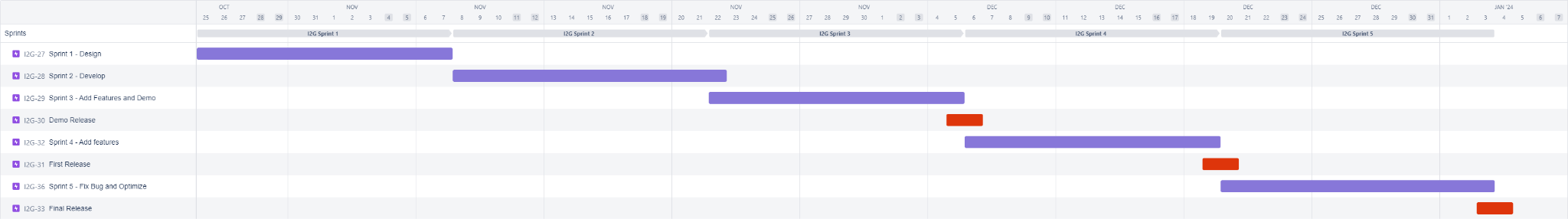
**Beta Version**

In the Beta Version, the application will undergo refinement, incorporating quality-of-life enhancements and the introduction of additional features.

**Release Phase:**

The Release Phase signifies the final iteration of the application, representing the polished and fully-featured product ready for public deployment.

### *Project Schedule*

**

### *Project Resourcing*

*[Identify the numbers and type of staff required here, including any special skills or experience, scheduled by project phase or iteration.*

*Describe how you will approach finding and acquiring the staff needed for the project.*

*List any special training project team members will require, with target dates for when this training should be completed.]*

## **Project Monitoring and Control**

*[The following is a checklist of items to consider:*

* *Requirements Management : Specify the information and control mechanisms which will be collected and used for measuring, reporting, and controlling changes to the product requirements.*
* *Reporting and Measurement: Describe internal and external reports to be generated and the frequency and distribution of publication. Specify which metrics should be collected and why.*
* *Risk Management: Describe the approach that will be used to identify, analyze, prioritize, monitor, and mitigate risks. Include a list of risks and their current status.*
* *Project Close-out: Describe the activities for the orderly completion of the project, including staff reassignment, archiving of project materials, post-mortem debriefings and reports, and so forth.*
* *Configuration Management: Describe the process by which problems and changes are submitted, reviewed, and dispositioned. Describe how project or product artifacts are to be named, marked, and numbered, including hardware, system software, Commercial-Off-The-Shelf (COTS), plans, models, components, test software, results and data, executables, and so on. Describe retention policies, and the backup, disaster, and recovery plans. Also describe how the media is to be retained—online, offline, media type, and format.*

*The text that follows is provided as an example.]*

### *Requirements Management*

The requirements for this system are captured in the Vision document. Requested changes to requirements are captured in Change Requests and are approved as part of the Configuration Management process.

### *Reporting and Measurement*

Updated cost and schedule estimates, and metrics summary reports, will be generated at the end of each iteration.

The Minimal Set of Metrics, as described in the RUP [Guidelines: Metrics](about:blank), will be gathered weekly. These include:

Earned value for completed tasks. This is used to re-estimate the schedule and budget for the remainder of the project, and/or to identify the need for scope changes.

Total defects open and closed – shown as a trend graph. This is used to help estimate the effort remaining to correct defects.

Acceptance test cases passing – shown as a trend graph. This is used to demonstrate progress to stakeholders.

In addition, overall costs will be monitored against the project budget.

### *Risk Management*

Risks will be identified in the Inception Phase using the steps identified in the RUP for Small Projects activity “Identify and Assess Risks”. Project risk is evaluated at least once per iteration and documented in this table. The risks of the greatest magnitude are listed first in the table.

| **Risk Ranking (High, Medium, Low)** | **Risk Description and Impact** | **Mitigation Strategy and/or Contingency Plan** |
| --- | --- | --- |
| High | Funding and Budget Overruns: Budget constraints or unexpected costs could disrupt the project timeline. | Regularly monitor the project budget. Implement a stringent financial tracking system. Prioritize features to ensure essential elements are developed within budget. Seek additional funding sources if necessary. |
| Low | Rapid Technological Advancements: in technology may render certain app features obsolete or less competitive. | Stay updated with technology trends. Design the app architecture to be flexible and easily upgradable. |
| High | Lack of Resources may occur when there are insufficient resources for the application development phase, leading to delays and increased costs. It may create pressure on the project team. | Review the necessary skills and resources from the outset. Seek input from staff who can work overtime or look for support from individuals outside the project if needed. |
| Low | Dependencies on external services, APIs, or third-party components might face disruptions. | Diversify dependencies where possible. |
| Medium | Loss of Communication with Team Members may occur when project team members do not regularly report progress or lose communication, leading to misunderstandings and delays. | Establish regular meeting and communication schedules. Use project management tools to track progress and communication. |
| High | Sudden Requirement Changes occur when users or clients request significant changes to project requirements, leading to schedule changes and increased costs. | Establish a change request confirmation and approval process. Ensure that all changes are documented and approved before implementation. |

### *Configuration Management*

Appropriate tools will be selected which provide a database of Change Requests and a controlled versioned repository of project artifacts.

All source code, test scripts, and data files are included in baselines. Documentation related to the source code is also included in the baseline, such as design documentation. All customer deliverable artifacts are included in the final baseline of the iteration, including executables.