Milestones for Quiz Master - V2 Modern Application D…   Updated automatically every 5 minutes

Milestones for Quiz Master - V2 Modern Application Development - 2

Project: Quiz Master - V2 (MAD-II)

The milestones are divided into **Core Requirements**, **Recommended Enhancements**. Students can complete core milestones (1-10) in any order but recommended (milestone 11-12) need to be done only after the core is completed. Each milestone includes a **brief explanation** and a **Git commit message** to track progress. When you finish a milestone, use the exact `Git commit message` given in every milestone to save your work. Then, push the changes to GitHub to update the online version of your project.

Milestone 0: GitHub Repository Setup (Mandatory)

✅ **Expected Time:** 1 day
📊 **Completion Progress:** 5%

- Create a **private GitHub repository** for version control.

- Add **README.md** with a basic project description.

- Create a **.gitignore** file to exclude unnecessary files.

- Set up a **Flask-VueJS project skeleton** and ensure it runs.

- Define an **issue tracker for milestone progress** in GitHub.

- Refer to the [git tracker document](#) to add **cs2006** as your collaborator, so that we can track your project.

Git Commit Message: `Initialized private GitHub repository with README and .gitignore`

Core Milestones (1-9)

These milestones are **mandatory** for project completion.

Milestone 1: Database Schema Design & Implementation

✅ **Expected Time:** 5-7 days
📊 **Completion Progress:** 15%

- Define tables for `User`, `Admin`, `Subject`, `Chapter`, `Quiz`, `Question`, and `Score` in SQLite. (Advised: Implement **database creation using Flask-SQLAlchemy**.)

- Set up relationships between tables (e.g., Subjects have multiple Chapters, Quizzes belong to Chapters).

- Ensure the database is programmatically created through a python script/file.

Git Commit Message: `Created database schema for users, subjects, quizzes, and scores`

Milestone 2: Token-Based Authentication & Role-Based Access Control

✅ **Expected Time:** 5 days
📊 **Completion Progress:** 5%

- Implement **Token-based authentication** for Admin and Users.

- Admin login should be **predefined (no registration)**.

- Users can **register and login** securely.

- **Role-Based Access Control (RBAC)**:

  - Admin can **manage quizzes, users, subjects, and questions**.

  - Users can only **attempt quizzes and view their scores**.

Git Commit Message: `Implemented token-based authentication & RBAC`

Milestone 3: Admin Dashboard Management (Python API and VueJS UI)

✅ **Expected Time:** 7-9 days
📊 **Completion Progress:** 15%

- Admin should be able to:

  - **Create/Edit/Delete Subjects**.

  - **Create/Edit/Delete Chapters** under a subject.

- ○ **Create/Edit/Delete Quizzes** under a chapter.

- ○ **Create/Edit/Delete Questions** under a quiz.

- Implement **VueJS UI for the admin dashboard and CRUD using Flask**.

- Admin should see a list of all users and their details in **VueJS UI**.

Git Commit Message: `Built Admin dashboard using VueJS with CRUD operations for subjects, chapters, quizzes, and questions using API.`

Milestone 4: User Dashboard & Quiz Attempt System

✅ **Expected Time:** 7 days
📊 **Completion Progress:** 10%

- Users should see a list of **available subjects and quizzes**.

- Users should be able to **attempt a quiz** (MCQ format with one correct option).

- Add a **timer per quiz** and **instant feedback** for correct/incorrect answers.

- Store **quiz scores in the database**.

Git Commit Message: `Developed User Dashboard with quiz attempt functionality and timer`

Milestone 5: Score Management and Quiz Result Display

✅ **Expected Time:** 5 days
📊 **Completion Progress:** 15%

- Store quiz scores after submission.

- Users should see **past quiz attempts and scores**.

- Display a **quiz summary report** with total scores.

Git Commit Message: `Implemented score tracking and quiz result display`

Milestone 6: Quiz Scheduling & Time Management

✅ **Expected Time:** 4 days
📊 **Completion Progress:** 10%

- Admin can **set quiz start date and time duration (HH:MM)** when creating a quiz.

- Users can **only attempt quizzes within scheduled times**.

- Implement **automatic quiz locking after expiry**.

Git Commit Message: Implemented quiz scheduling with time duration

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Milestone 7: Backend Jobs - Daily Reminders & Monthly Reports

✅ **Expected Time:** 7 days
📊 **Completion Progress:** 10%

- Implement **Celery tasks** for:

    - **Daily Quiz Reminders** (via G-Chat/SMS/Email).

    - **Monthly Performance Reports** (sent to users via email).

- Optimize **Celery & Redis** for background processing.

Git Commit Message: Added Celery-based backend jobs for reminders & reports

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Milestone 8: Search Functionality for Admin & Users

✅ **Expected Time:** 4 days
📊 **Completion Progress:** 5%

- **Admin Search:** Find **users, subjects, quizzes, questions**.

- **User Search:** Find **quizzes and subjects** by keyword.

Git Commit Message: Added search functionality for Admin and Users

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Milestone 9: Async CSV Export for Quiz & User Data

✅ **Expected Time:** 5 days
📊 **Completion Progress:** 5%

- **User-triggered export:** Quiz history in CSV format.

    OR

Admin-triggered export: User performance data in CSV.

- Use **Celery background tasks** to handle async exports.

Git Commit Message: Implemented async CSV export for quizzes & user data

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Milestone 10: API Performance Optimization & Caching Using Redis Cache

✅ **Expected Time:** 4 days
📊 **Completion Progress:** 5%

- Optimize API response times.

- Secure endpoints with rate-limiting (use caching decorators) .

- Use **Redis caching** for API optimization.

Git Commit Message: Optimized API performance using redis cache

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Recommended Enhancements (Milestones 11-12)

These milestones are recommended but **not mandatory**.

Milestone 11: UI/UX Improvements & Responsive Design

✅ **Expected Time:** 7 days

Improve **UI styling** using Bootstrap & VueJS.

- Ensure a **mobile-friendly and responsive layout**.

- Implement **frontend validation** (JavaScript) and **backend validation** (Flask).

Git Commit Message: Enhanced UI/UX and added frontend validation

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Milestone 12: Advanced Quiz Analytics & Leaderboard

✅ **Expected Time:** 7 days

- Display **detailed performance analytics** for users.

- Create a **leaderboard based on quiz scores**.

- Implement **progress tracking charts**.

Git Commit Message: Added advanced analytics and leaderboard feature

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Final Project Submission

Milestone 13: Final Project Submission Details

✅ Expected Time: 2 days
📊 After, **Completion Progress is 100%.**

Ensure you submit the final project, including:

- Code ZIP file.

- 3-5 page report.

- 3-10 min video presentation.

- The video should be uploaded to your g-drive with access granted to anyone with the link.

- The g-drive link must be included in the report for review. Report pdf should be added to the zip file.

- Ensure all **code is documented & structured**.

Git Commit Message: `Finalized project submission with report and presentation link`

Tracking Progress

To track progress, you should:

1. **Use Git commits** for each milestone.

2. **Test functionality** after completing each milestone.

3. **Log issues** encountered and their resolutions in a `README.md` or GitHub Issues section.

Timeline Overview

Project Completion Overview

Milestone	Average Time	Split (%)	Progress (%)

	Estimate		
Milestone 0: GitHub Setup	1 day	5%	5%
Milestone 1: Database Setup	5-7 days	15%	20%
Milestone 2: Authentication & RBAC	5 days	5%	25%
Milestone 3: Admin Dashboard	7-9 days	15%	40%
Milestone 4: User Dashboard & Quiz	7 days	10%	50%
Milestone 5: Score Management	5 days	15%	65%
Milestone 6: Quiz Scheduling	4 days	10%	75%
Milestone 7: Backend Jobs	7 days	10%	85%
Milestone 8: Search Feature	4 days	5%	90%
Milestone 9: CSV Export	5 days	5%	95%
Milestone 10: Redis Cache	4 days	5%	100%

Extra Work Overview

Milestone	

	Average Time Estimate
Milestone 11: UI/UX & Responsive Design	7 days
Milestone 12: Advanced Quiz Analytics	7 days

Final Submission Overview

Milestone	Average Time Estimate
Milestone 13: Final Project Submission Details	2 days

Note: The average time estimate is not a strict deadline. Each student has a different level of understanding, so you can take the time you need. The provided time estimates indicate the average duration students typically take to complete each milestone if they dedicate 2-3 hours (approx.) per day.