

Folio: Student Academic Planning with Task-Completion Encouragement

First Semester Project Plan

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Goal and Motivation

- Goal: help students who are struggling or falling behind turn course information into a manageable plan and follow through.
- Student pain points include late awareness, stress, lack of advice, inconsistent Canvas use, and the dread of catching up as deadlines approach.
- Potential user said a self-imposed reward system could motivate him to complete his work.
- Canvas and similar systems show grades, deadlines, missing work, and course content, but do not provide the complete student-owned planning and follow-through workflow Folio targets.

CURRENT SYSTEMS

Grades
Deadlines
Missing work
Course content

FOLIO ADDS

Student-owned plans
Cross-plan scheduling
Optional instructor suggestions
Follow-through

Key Features of the System

PREPARE

The user can manually enter or import course schedules, assessments, deadlines, and scores.

The user can choose which assignment, test, or other work to address.

Course information is planning context, not a basis for inferring attendance, studying, participation, or effort.

BUILD MY PLAN

The user can choose a planning template, edit suggested tasks, and schedule tasks from active plans into one daily or weekly schedule.

The user can export a plan as PDF or DOCX, review a prepared instructor email, and decide whether to revise the plan after suggestions.

FOLLOW THROUGH

The user can view and reschedule tasks, receive configurable reminders, mark tasks complete, and see plan progress.

The user can receive congratulations, play task-linked one-player tic-tac-toe, and earn separate XP, points, levels, badges, and cosmetic rewards.

Planning remains usable without the game or rewards.

Novel Features / Functionalities

CROSS-PLAN SCHEDULING

Tasks from multiple active plans feed into one student-owned schedule.

STUDENT-CONTROLLED FEEDBACK

Students can export a plan and request instructor suggestions without a professor dashboard or exposing private progress.

TASK-COMPLETION ENCOURAGEMENT

Tic-tac-toe is tied to task completion; XP, points, levels, badges, and cosmetics are a separate encouragement layer.

Folio's proposed novelty is the combination of these features into one workflow. Calendars, reminders, task lists, or rewards are not claimed as novel by themselves.

Algorithms and Tools

BUILD / PLAN / SCHEDULE

Streamlit + Python for the web application, planning interface, reminders, progress, and reward logic.

Scheduling and conflict-detection logic combines active-plan tasks without overriding student choices.

DATA

Pandas for manual/CSV course-data validation.

SQLite for local data storage.

EXPORT / INSTRUCTOR FEEDBACK

Playwright for PDF export.

python-docx for DOCX export.

Python email tools for preparing instructor emails for student review.

GAME / REWARDS

Tic-tac-toe game-state and turn rules; computer-move algorithm selected during Milestone 1.

Python rules for XP, points, levels, badges, progress bars, and congratulations.

Collaboration tool: GitHub for software development.

Three Main CSE-Related Challenges

DATA QUALITY & SCHEDULING

Validate manual fields and preserve source labels.

Handle duplicate or conflicting schedule data.

Resolve task collisions across active plans without overriding student choices.

PRIVACY & EXPORT

Keep private progress, rewards, and game information separate from academic information the student chooses to share.

Let the student review exported plans and prepared emails before sharing.

GAME & REWARD CORRECTNESS

Prevent duplicate earned moves and handle lost turns.

Track legal moves and win/loss/tie states with a random starting player.

Keep rewards separate from the core planning workflow.

Milestone 1 — Sep 28

1. Compare and select technical tools for planning/scheduling, manual/CSV data and storage, PDF/DOCX/email export, and tic-tac-toe/rewards.
2. Provide “hello world” demos for the planning/scheduling interface, CSV-to-database workflow, PDF/DOCX and email preparation, and tic-tac-toe.
3. Resolve the three technical challenges: data quality/scheduling, privacy/export, and game/reward correctness.
4. Compare and select collaboration tools for software development, documents/presentations, communication, and task calendar.
5. Create Requirement Document.
6. Create Design Document.
7. Create Test Plan.

Milestone 2 — Oct 26

TASK 1

Implement, test, and demo manual/CSV entry of course schedules, assessments, deadlines, and scores.

Include selection of the assignment, test, or coursework to address, input validation, and storage.

TASK 2

Implement, test, and demo planning-template selection and editing suggested tasks.

Combine active-plan tasks into one daily or weekly schedule.

Implement PDF/DOCX export, prepared instructor email, and student-controlled plan revision after feedback.

Milestone 3 — Nov 23

TASK 1

Implement, test, and demo daily and weekly task views, rescheduling, configurable reminders, task completion, plan progress bars, and completion congratulations.

TASK 2

Implement, test, and demo tic-tac-toe and XP, points, levels, badges, and cosmetic rewards. Integrate these features with the complete version-1 workflow while keeping planning usable independently of the game and rewards.

Task Matrix for Milestone 1

Task	Nicholas Dunzelman	Caleb Brooks
Compare/select technical tools		Planning/scheduling; manual/CSV data + storage; PDF/DOCX/email; tic-tac-toe + rewards
"Hello world" demos	PDF/DOCX + email preparation	Planning/scheduling interface; CSV→database; tic-tac-toe
Resolve technical challenges	Privacy + export	Data quality + scheduling; game + reward correctness
Compare/select collaboration tools	Documents/presentations; communication; task calendar	Software development
Requirement Document	Write 50%	Write 50%
Design Document	Write 50%	Write 50%
Test Plan	Write 50%	Write 50%