

CIS 4000 Semester Project

Build Your Own Finance/Investing Database System

Project Theme: Investing or Finance

Project Guidelines

- Your project must relate to finance or investing in some way.
- It must use concepts found in web page development and can go beyond the ones we cover.
- Do your own work, but take advantage of tools that already exist.
- You are allowed to use code development tools, generative AI, tutorials, or references, but you must document what you used and explain your role in the result. For example, build from examples and starter material you find, or start with free code. You must be honest about how you used resources!
- Creativity and customization count significantly. Do something that feels like your own.
- Ask Me Questions: If you need clarification, please ask me directly. Other instructors or advisors may not be aware of the specific details and expectations of this assignment.

Project Expectations and Support

This project offers considerable flexibility but requires a strong sense of responsibility. It mimics a professional work environment where regular progress, punctual submissions, and professional behavior are expected. While your project is self-driven, creative, and enjoyable, failing to meet expectations and to make progress could lead to being 'laid off,' which results in a course grade of F. Your instructor serves as your manager and primary point of contact, supporting your success, guiding your efforts, and clarifying expectations as the project progresses. They will not make arbitrary decisions; instead, they help set realistic goals for your project. Although your instructor advocates for you, they also maintain standards and decide if the project should continue.

Tips for Success:

- Arrange a meeting with your manager within the first two weeks to establish a good working relationship.
- Address any questions or concerns early, before deadlines approach.
- Do not let uncertainty or hesitation prevent you from reaching out. Your manager is there to support you.
- Focus on your personal progress and goals; your success relies on your dedication rather than comparing yourself to others.
- Avoid letting rumors or secondhand opinions shape your view. Instead, build your understanding through direct communication with your manager.

Your Mission

Create a database system on a finance or investing theme. It can be informational, a game, a data analysis tool, or something else, and it does not have to be an original idea. The goal is to build and learn. This is your opportunity to explore tools in a full-stack development environment, learn as you go, and make something with pride. You have the freedom to choose the tools, framework, and content. You must cover the major course topics in your project (see syllabus and schedule for topics), but you can, and should, go beyond them.

Note: One of the necessary and valued skills you demonstrate in this project is learning to use tools that help you build great things. It is okay if your project is not complete by the end of the semester (projects seldom are finished in a semester). This project is also about what you learn and how you progress during the semester.

Part 1 – Explore & Propose (Due during week 3)

Goal: Understand what full-stack development is, then plan your project. **Remember: You are attempting to convince your manager to allow the project.**

Deliverables:

- A 5-to-10-minute recorded explanation that includes:
 - A summary of what front-end, back-end, and full-stack development are.
 - Your project idea (name, purpose, rough layout, intended users).
 - Your selected tech stack.
 - What excites you about this idea?

Tip: Think broadly, then narrow it down. Your database system could be a personal budget tracker, an investing tool, a game to teach investing, or any idea that involves finance/investing. You have the freedom to choose the tools, framework, and content.

Special Notes:

- You cannot have identical projects in my classes at the same time. Projects can be related, such as using the same idea, but they must have a clear distinction that aligns with the expected course content of the course. Reports and presentations must be distinct in content for the class, but overlaps are allowed and can be combined; however, this doubles the length, e.g., a 10-minute presentation becomes 20 minutes.
- If you were in one of my previous courses and want to continue your project, you may do so, but you are expected to expand it using the content of the current course significantly. In other words, you cannot submit the same project with minor changes from the previous course.
- If you have an idea for a project that is not in this theme that you would like to explore, you must discuss it with me first.
- If your project falls into these special notes, please discuss it with me to ensure you are on the right track to meet my expectations.

For the presentation, you can either schedule a time with me on Teams or in person, or share a link to your recorded video (OneDrive or YouTube are good options; GitHub only allows small video files).

Grades are objective and subjective and determined by showing the knowledge you have gained about stack development and effort in laying out your idea, not by project completeness. Minimum effort will reflect a minimum grade.

Part 2 – Progress Checks (Due during week 6 and week 10)

Goal: Show you are learning your full-stack environment, setting up infrastructure, and working on the project. **Remember: You are attempting to prevent project cancellation and layoffs by ensuring you are making progress and that the project meets the requirements.**

Deliverables:

- A 5-to-10-minute recorded explanation that includes what has been accomplished. The focus is on your project, not reflection (the reflection will be in the written report). Examples of possible things to show include:
 - Basic database structure
 - Project folder/repo structure
 - Any databases or back-end services connected (or mocked)
 - New tool(s) or methods you taught yourself and how you applied them

- Features of the tools you have practiced or used
- Items you have completed
- Code you have written
- Key features under development
- A reflection (two-page minimum):
 - Use one of the provided templates.
 - Where are you at in the project?
 - What has been easiest/hardest so far?
 - What are your next steps?
 - What is working well?
 - What problems have you solved?
 - What help do you still need?
 - Include a list of ALL resources used—AI, websites, tutorials, resources, and where you got help.
 - If you used AI, include screenshots of the prompting you used.
 - Any relevant completed items or source code, links to your work, and GitHub repo link.

Special Note: You must be honest about how you used the resources, including generative AI. There is no reason to claim you used AI only to learn how to do something if you had it generate starting code or help write your report. Include the prompts you used. If you are not turning over everything to AI, you will be fine.

For the presentation, you can either schedule a time with me on Teams or in person, or share a link to your recorded video (OneDrive or YouTube are good options; GitHub only allows small video files).

Tip: Remember that it is not yet a completed project. These progress checks are about showing progress and what you are learning. I do not expect perfectly recorded videos, but you should demonstrate your project rather than make vague statements without revealing what you have completed.

Grades are subjective and determined by showing significant progress, not by project completeness. Minimum effort will reflect a minimum grade.

Part 3 – Final Push (Due Week 16)

Goal: Prepare your final version for submission and reflect on your work.

Tip: Remember that it still does not have to be perfect or complete.

Deliverables:

- A 10-minute presentation (live or recorded):
 - Walk through your project.
 - Explain your tech stack and development process.
 - Show what you built, what you're proud of, and what's next.
 - Demonstrate your ownership and understanding of the project and tools.
- A reflection (two-page minimum):
 - Use one of the provided templates.
 - What did you learn (technically and personally)?
 - What would you do differently if starting over?
 - What resources did you use the most?
 - If you used generative AI, how did you use it, and what parts did you NOT let AI do?
 - Include a list of ALL resources used—AI, websites, tutorials, resources, and where you got help.

- Any relevant completed items or source code, links to your website, or GitHub repo link.

For the presentation, you can either schedule a time with me on Teams or in person, or share a link to your recorded video (OneDrive or YouTube are good options; GitHub only allows small video files). Refer to the guidelines to understand expectations.