Students will be assigned to a 2-person group, and they will design and prototype a software application or tool that addresses a real-world ethical or societal challenge in computing. The application must include:

- ~~Two-factor authentication for login~~
- ~~Integration with an AI generator (e.g., GPT API, image generator, summarizer)~~
- ~~Use of one AI code assistant (GitHub Copilot, Amazon CodeWhisperer, or Tabnine)~~

Suggested Project Examples

- An app that summarizes medical instructions for patients using AI, with high privacy sensitivity
- A job preparation tool for underserved students with built-in resume reviewers powered by AI
- A local crime reporting dashboard that anonymizes sources and ensures non-biased summaries
- An IoT dashboard for smart home devices with user controls for transparency and data usage
- A browser plugin that flags manipulative design patterns (e.g., dark UX patterns)

PART 1: What, Why, How

Deliverable: Create the following in a PowerPoint presentation, save as a PDF.

1. **Team Overview, picture, hometown, little known fact, major and specialty, return offer or how many jobs have you applied or both.**
2. **Project Concept**
    - **What problem is your software/tool addressing?**
    i. Giving investors insight into how economic news will affect broad indexes (aka their holdings — if they have exposure to these indices)
    - **Who are the users?**
    i. Anyone who has exposure to the S&P, or broad US Indexes
    - **Why does this problem have ethical relevance (e.g., fairness, privacy, accessibility)?**
    i. Neutral outlook and data driven/focused so users can feel confident about the data presented and processed for a real-world understanding of how companies and investors respond

3. **What You Hope to Learn**
    - **Technical skills you expect to gain**
    i. Eddie: React exposure, AWS exposure, Practice on API
    ii. Harrison: AWS cloud utilization, integration of AI and API's, machine learning methods with financial data, and test cases with Postman to ensure a complete and working service
    - **Ethical considerations you plan to explore**
    i. Data transparency, Integrity, Authenticity with out Data
4. **Initial Architecture Thinking (diagram required)**
    - **Will it be web/mobile/desktop/embedded/tool?**
    i. Web application
    - **Technology Stack**
    i. React
        1. For the UI / UX
        2. Bootstrap and Vite libraries as well
    ii. Two-factor authentication for login
        1. AWS Cognito
    iii. AWS Cloud services
    iv. Python
    v. GPT API
    vi. Amazon Code Whisperer
    vii. Postman
    viii. MongoDB
    - **Basic structure: components, data flow, user access, AI integration**
    i. React for the user interface with Bootstrap and Vite libraries for creating website
    ii. We'll use Microsoft Authenticaticator with Python to make the two factor authentication for login to work
    iii. AWS will be used to host our web application, API's, and two factor authentication
    iv. Python will handle the majority of the programming with machine learning methods, API integration, and utilizing datasets to handle our financial data and math libraries including visualizations
    v. We'll integrate ChatGPT with the API for advanced insight and if a user has any questions about the data we present for a deeper outlook
    vi. Amazon Code Whisperer will help with the coding part of the application and allow us to pursue greater productivity and quickness

vii. Postman will be used to test the integrated API’s to ensure our application works fully
viii. MongoDB will be used to handle storage of financial data, login, and GPT analysis/API