Neal Soni
Trumbull College '22
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[CPSC 290](#): Independent Study Project Proposal
STUDENT: Neal Soni
ADVISOR: Benedict Brown
TITLE: *Planing, Designing, Building, Testing, and Scaling Full Stack Applications Across All Platforms.*
DESCRIPTION*:* The goal of this independent study would be to learn, experiment with, and use new and modern development technologies and strategies with the ultimate goal of obtaining the skills to develop industry standard production-ready code.

OVERVIEW:
I will learn industry standard concepts in three separate areas: *Mobile, Web, Server*
- *iOS and Android App Development* will focus on learning and implementing the following:
    - Created a shared native Android and iOS Applications
    - Unit Testing with the goal of reaching at least 80% code coverage
    - User Interface Testing and Acceptance Testing
    - Creating a network layer using either an Apollo or Relay client for connecting to the GraphQL API
    - Real-time updating through WebSockets and push notifications
    - Developing a data layer using redux-like store (or simply Redux)
- *Web Development* will focus on learning and implementing the following:
    - Vue framework
    - Authentication with a server
    - Styling library
- *Server development* will be focused on learning and implementing the following:
    - GraphQL API service
- Potentially integrate with GraphQL API developed by Dylan Gleicher
- All iOS, Android, and Web applications will feature CI/CD features on a build server environment.
- Standardized testing (Unit/UI/Acceptance) with the goal of at least standard 80-90% code coverage.

The deliverables of this independent study will be each of the individual aforementioned applications and features.
- A natively built iOS and Android acting as a mobile interface
- A web application acting as a desktop interface
- All solutions deployed on a CI/CD development server
- All solutions demonstrate understanding of Unit/UI testing in their respective languages

I will develop either a single project or series of projects throughout the independent study that exemplifies my understanding of these strategies and techniques. Potential project ideas include a Twitter Data Scraper and Network Analyzer, Yale Daily News Application, Facebook Graph API Visualizer, etc. The goal of the finalized project will be to implement as many of the above concepts in a single unified way.

Development of this project can be made independent of the participation of any other student but progress towards completing all deliverables will be greatly improved while working in conjunction with another student. Ideally this other student would be Dylan Gleicher, Grace Hopper College, Yale '21.