Senior Design II
Progress Report

Name 1 Elizabeth Caona
Name 2 Michael Hylton
Name 3 Hardik Polamarsetti
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Name of Design Team: WealthWise: Tax Optimization for Small Businesses

Department of Electrical Engineering and Computer Science, Cleveland State University

Submitted to—

Name 1 of Project Advisor or Sponsor: Dr. Zicheng Chi

Contents

Executive Summary

The challenges faced by small businesses in navigating complex tax regulations, acquiring funding, and scaling operations highlight a critical need for accessible tools

to optimize tax strategies and financial planning. Research indicates that a significant proportion of small businesses fail within their first decade, often due to inadequate planning, limited funding, and insufficient understanding of applicable tax benefits. Current solutions, such as hiring certified public accountants (CPAs) or using basic software like TurboTax, either impose prohibitive costs or fail to provide the depth of insight necessary for effective decision-making.

To address these challenges, this project proposes a comprehensive design solution to bridge the gap between accessible tax advice and cost-effective implementation. The proposed solution includes the development of a web-based platform powered by machine learning algorithms and real-time data updates. The platform will enable users to input their financial and business data to receive tailored tax strategies designed to optimize deductions, credits, and compliance with regional regulations. Additionally, web scraping technologies will ensure that the platform remains updated with the latest tax laws and policies.

The platform design will prioritize affordability, user accessibility, and security. By leveraging artificial datasets to simulate various business scenarios and integrating predictive models, the solution seeks to empower small business owners with actionable insights previously accessible only to large enterprises or high-cost advisors. Ultimately, this project aims to reduce the barriers to financial success for small businesses, fostering growth and sustainability in an increasingly competitive marketplace.

1. Statement of Problem and Background

Small businesses often face many challenges that larger corporations do not. These challenges include navigating complex tax laws, acquiring capital, and scaling operations effectively. “According to the Bureau of Labor Statistics, ‘approximately 20% of new businesses fail within the first two years, 45% within the first 5 years, and 65% within the first 10 years. Only 25% of new businesses make it to 15 years or more. The reasons are due to inadequate planning, funding, and flexibility.’ Many small businesses struggle to overcome these challenges and could benefit from tools and services to help bridge the gap towards success.

Currently, to address the complexity of tax regulations surrounding a small business, business owners may have to hire a CPA, which can be extremely expensive for a new business. Otherwise, they have to rely on basic tax services such as TurboTax, which often fails to provide in-depth insights and feedback that limits users ability to optimize their tax strategy and maximize their savings.

2. Design Objectives

This document proposes creating a tool that can be used by small businesses to help optimize their choices in several different ways. This leads to the following design objectives:

- Create an artificial dataset to simulate a variety of small businesses and types of businesses which can then be used to train a predictive model.
- Create a predictive model that will help users optimize their tax credits, deductions, and achieve their short and long term goals.

Creating an artificial dataset that will enable us to train a model on a variety of different situations. There will be a number of different variables like Entity Type, Years in Business, Gross Revenue, Net Income, Income Growth Rate, and many other variables. With all these variables, there is not a clean dataset we can pull from. However, an artificial dataset should be sufficient.

The predictive model will utilize the dataset

3. Technical Approach

3.1 Identifying the Unmet Needs

The needs of the customer were determined through anecdotal accounts received by team members from friends and acquaintances that own small businesses or file their own taxes. They expressed the challenges they face when filing their taxes and often refer to the complexity of the process as a large barrier to why they rely on basic tax services and do not receive the maximum amount on their returns.

3.2 Determining the Design Constraints

One of the biggest challenges in this project will be sourcing data for the machine learning algorithm that recommends a tax strategy to the user. Specific tax data that regards a business's practical details such as their revenues, expenditures, and number

of employees and their salaries are extremely limited and not publicly available. The machine learning algorithm benefits from large amounts of complete and reliable data in order to provide the best possible strategy.

3.3 Defining Technical Specifications

The website will be HTML/CSS based and should be responsive and easy to navigate. The machine learning algorithm will be based on python and one of its libraries such as sci-kit learn and will include data cleaning and hyperperamerterization if it is found to be applicable and necessary. The web scraping portion of the project will also be python based and will most likely use a library such as BeautifulSoup to gather data from various tax sources.

3.4 Enumerating Design Concepts

Web design	A user friendly website will be created
Machine Learning	A machine learning algorithm will be used to determine the best tax strategy
Web scraping	Web scraping will be used to ensure the application is always using the latest tax regulations and data

3.5 Selecting Design Concepts

Machine learning is a new topic that has not yet been widely adopted in the tax industry. By bringing this technology to tax advice in this project, the team hopes to gather new insights that may have previously been overlooked.

Web design is important because it it the medium through which users interact with the product and gain value from it. If users cannot easily access the information provided by the algorithm, it is not very helpful to growing their business. An alternative platform that is being considered is an application; however, this is an area the team has less expertise in, so its feasibility still needs to be considered.

In order to keep up with the ever-changing landscape of tax regulations and variations between locations, web scraping will be used to constantly update the website with the latest information. This ensures that users are given up to date information about their specific region when navigating their taxes.

3.6 Standards Compliance

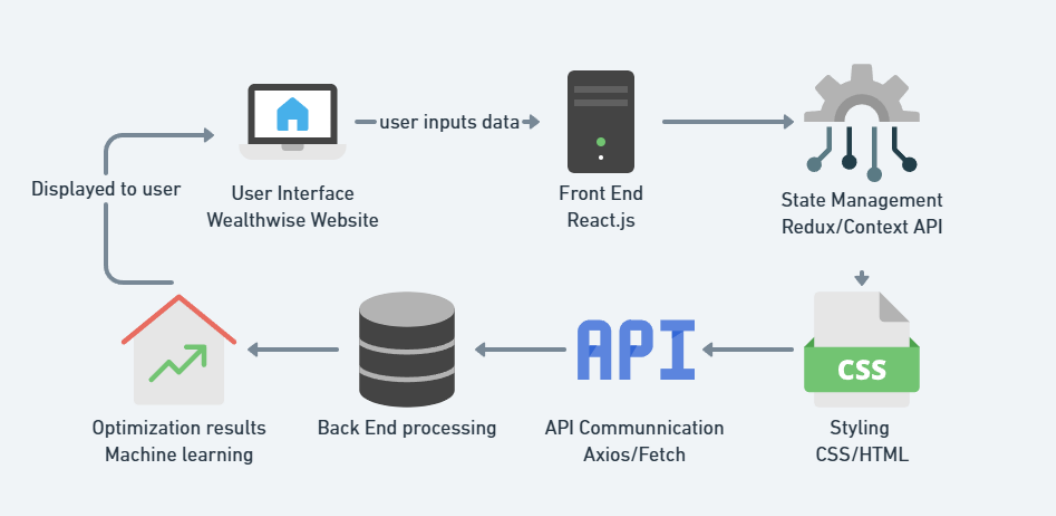
The Internal Revenue Service (IRS) is the primary regualtory body for taxes in the United States. Their regulations will be strictly adhered to in the development of this project. Circular 230 governs ethical standards to tax preparers and advisors and ensures that tax related advisors act competently, provide accurate information adn avoid conflicts of interest. The WealthWise application will not file taxes returns and will simply act as an informational service to assist users when they are filing taes for their business or themselves.

There are also data privacy and security laws that will need to considered. One such law is the Gramm-Leach-Bliley Act that mandates the protection of user information on the platform. To comply with this, the data used for the machine learning algorithm will not be accessible anywhere on the platform and will only be used to create the model.

4. Detailed Design

This section should be the main section of the final report and should be divided into multiple subsections. You should describe the final design in detail. It is recommended to first give an overview of the overall systems and then give detailed descriptions of individual subsystems/blocks. Use block diagrams, circuit diagrams, mechanical drawings, software pseudo code, flowcharts, etc., to illustrate your point.

Framework describing the user experience including the User Interface and backend configuration.

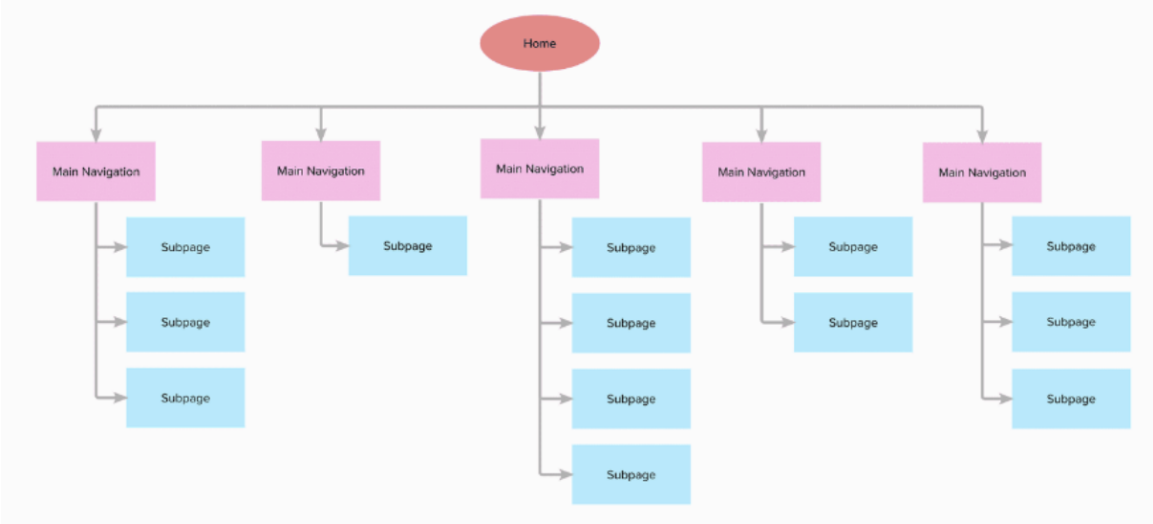
1. 

4.1 Main Goals:

- Provide a user-friendly experience and interface for inputting small business financial data
    - The business's previous year financial data or tax return
    - Their current data
    - Their business goals
        - May decide to split up by quarter, year, or years.
- Process in backend and Display in frontend: tax optimization (interactive? – can we make it interactive? Or would that be necessary/provide value?) dashboard for personalized insight or recommendations.

4.2 Front-End

This section details the final front-end design of *WealthWise*, broken into subsystems and components that contribute to the overall user experience. A typical UX/UI process follows a structured method to ensure usability, functionality, and performance, and we seek to emulate that here.



4.2.1 System Overview

The front-end system is designed to be a user-friendly tax optimization tool that provides real-time tax-saving recommendations based on user input. The interface follows a structured, step-by-step process to guide users through income, expense, and deduction entry.

4.2.2 Front-End Technologies Used:

Front-End Framework: React.js. Utilizing React.js will allow us the flexibility of creating a dynamic framework that is easier to manage when updates are needed. It also simplifies API calls and data management, making the communications between front and back end more straightforward. React will also allow us to build in state management systems to make our platform more efficient.

State Management: Redux or Context API (for managing the data that is received by the user.) This state management implementation makes it so the webpage is able to update in real time as the user inputs their data in real time, without requiring a full page reload. While data state can be managed locally at a component level, or globally, we will utilize both methods depending on how the particular data point needs to be managed.

Styling: CSS/Tailwind CSS. We will create a master CSS styling sheet to encompass the entire front-end styling. If we later wish to change the styling of individual components,

we can incorporate Tailwind CSS that allows us to declare classes directly into the HTML/JSX code without needing to change the style sheet.

API Communication: (for backend interaction) – should we use Axios, Fetch API, or?

WealthWise: Tax Optimization

Calculate My Deductions

Select your filing status: Single

Enter your income: $ e.g. 75000

Claim Credits

☑ Employer-provided childcare credit

Childcare facility expenditures: $

Resource and referral expenditures: $

☑ Opportunity Zones

Deferred Gain: $

Fair Market Value of Fund Investment: $

Basis in Fund Investment: $

☑ Fuel Tax Credit (farm/off-road use)

Fuel Expenses (nontaxable use): $

The credit is available only for nontaxable uses of gasoline, aviation gasoline, undyed diesel and undyed kerosene. Nontaxable uses are purposes where fuel isn't used for regular driving purposes, such as:

- On a farm for farming purposes
- Off-highway business use (for equipment, machines, vehicles and tools that operate on private property, farms, or construction sites, not public roads)
- Commercial fishing
- Certain types of buses (intercity, local, or school)

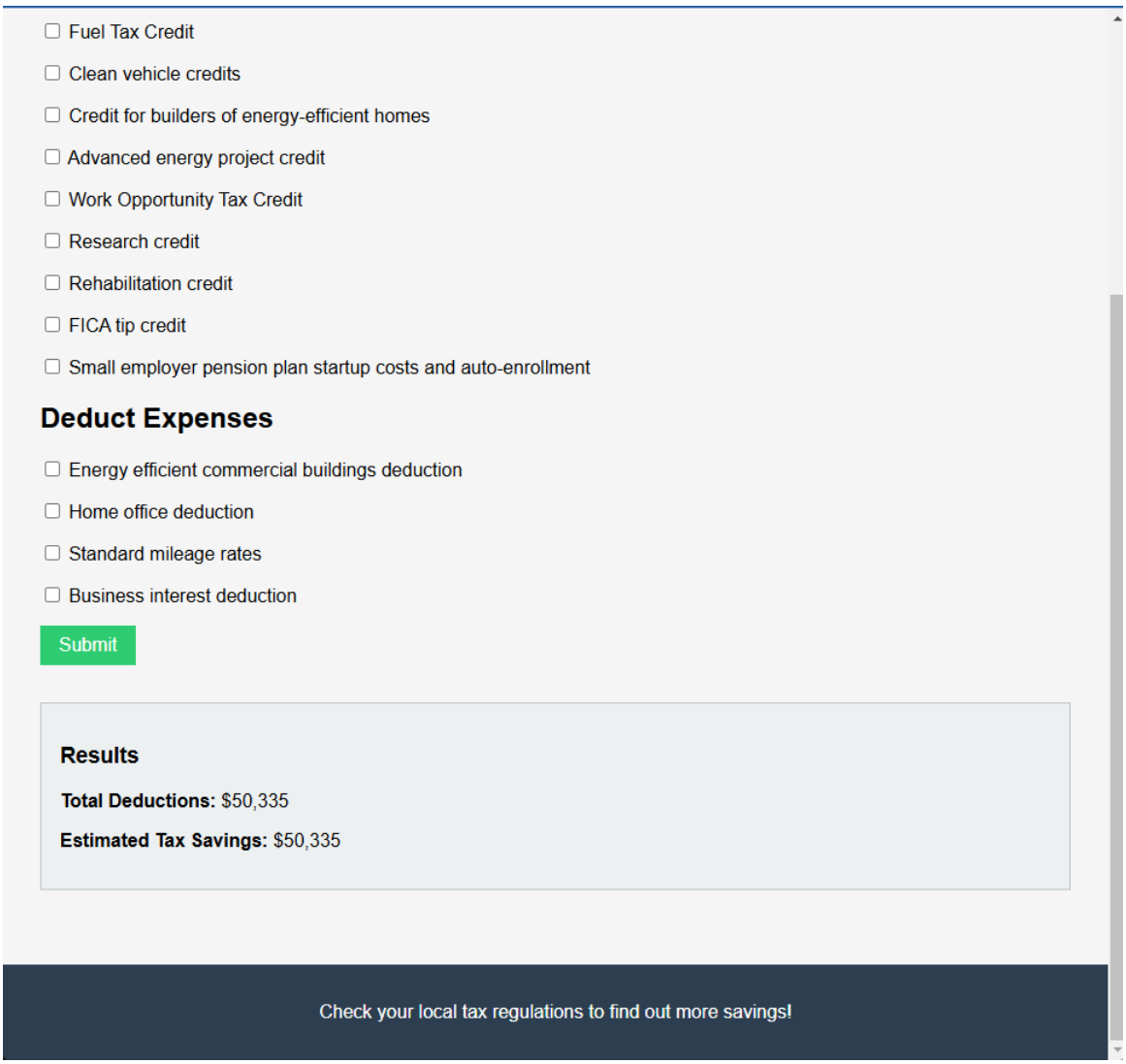
☑ Clean vehicle credits (up to $7,500)

☑ Credit for builders of energy-efficient homes (up to $5,000)

☐ Advanced energy project credit

☑ Work Opportunity Tax Credit (up to $2,400)

☑ Research credit



Sample page for deduction calculations

4.3 Data Handling/ Processing

The backend processes user financial data, cross-referencing it with IRS regulations and tax laws to generate optimized tax strategies.

-Data Collection:

Collects user-provided financial data and historical tax records.

Collects IRS data through web scraping

-Validation & Cleaning: Ensures data accuracy before analysis.

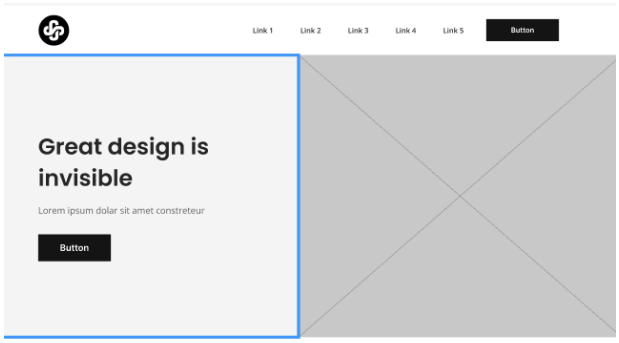
-Tax Optimization : Utilizes machine learning models to identify savings opportunities.

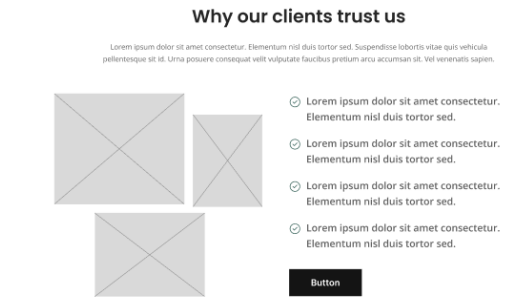
-Recommendation Generation: Provides users with personalized tax-saving strategies.

4.4 (draft architecture)

Frontend Wireframes:

Landing Page (example):





User account access

Navigation System

Main Dashboard

Data Input Section

Results Display (Optimization Insights)

Help/Resources/Resource Links

Sitemap

API Communication Layer (connects to backend)

Backend:

The backend of WealthWise is responsible for handling data processing, user authentication, API interactions, and machine learning computations to provide accurate tax optimization recommendations. Python and Node.js will be utilized to handle data

processing and API endpoints efficiently. Python will be used for machine learning and data analytics, while Node.js will be used for real-time backend processing and API handling.

5. Verification

Present your test plan, giving details of what type of testing is to be done and just what each test entails. Provide solid technical data and present it in an easily grasped manner, using graphs and tables where necessary. Discuss whether the system functionality and performance meet the specifications.

5.1 Testing Components

As part of our testing, we will be creating and/or collecting small business tax data to provide the training model with a framework of all the possible data points used by the small business owners, CPAs, and the IRS when filing tax returns.

We will also gather a collection of types of questions that small business owners have, (potentially where they lose the most money on their tax returns, where the savings opportunities are, etc). These questions will be used as potential questions asked by the user. The platform will be able to take the user's input, check the (static current) IRS data, rules, tax cuts, rebates, etc, to provide the user with a tailored recommendation for their need.

Platform/Website: We will be testing the deliverable platform to take input from the users based on the trained tax data. We will provide the platform with a number of test cases to ensure its robustness and accuracy for a user-friendly experience.

Machine learning model: To test the machine learning algorithm, we will use Cross-validation testing to ensure the results provided are accurate and applicable to the user's input. We will achieve this by creating a testing and training split of the data and verifying the model's accuracy with the training set to the testing set.

```
--------------------------------------------------
Training model for WOTC_Eligible...
Accuracy for WOTC_Eligible: 0.9800
              precision    recall  f1-score   support

           0       1.00      0.88      0.94        17
           1       0.98      1.00      0.99        83

    accuracy                           0.98       100
   macro avg       0.99      0.94      0.96       100
weighted avg       0.98      0.98      0.98       100

--------------------------------------------------
```

Sample Machine Learning test

5.2 Front-End Testing Strategy

5.2.1 Functional Testing

Purpose: Ensures every single component on the site functions correctly.
As a team we will iterate through the site testing every component, from field, and suer flow to ensure everything is functioning as intended with the correct backend code implemented.

5.2.2 Usability Testing

Purpose: Ensures users can effectively navigate and interact with the system.
Methodology: Conducted with a sample of target users, preferably with some knowledge of filing their own taxes or small business tax filings. The predefined metrics will be tracked, as well as task completion time, error rates, and user satisfaction scores. It should be noted that testing will be conducted in both desktop and mobile views as time allows.

Test Scenarios:

- Creating an account
- Entering in financial data
    - We will provide the tester with mock small business portfolio data
- Navigating between sections
- Their understanding of the optimization results

5.2.3 Accessibility testing:

Utilizing accessibility plugins such as ANDI or color contrast analyzers, we will test to ensure the site is compliant with Web Content Accessibility Guidelines (WCAG) standards.

- Site can be navigated completely via keyboard usage alone.
    - All components can be accessed via the tab button, no keyboard traps, etc.
- Contrast and font size pass the WCAG tests.
- Components in code are coded in a way that's fully accessible to screen readers.
- Page can be zoomed in 200% while information is still readable, and meaning is not lost.

5.3 Backend Testing Strategy

Backend testing ensures system stability, security, and performance to provide the user with accurate information and protect their data.

-Functional Testing: Validates authentication, API interactions, and data processing.

-Performance Testing: Evaluates responsiveness and system stability under load.

-Security Testing: Detects vulnerabilities and ensures compliance with security standards.

5.4 Whole Platform Training

Purpose: To do wholistic testing on the platform to check for any errors or opportunities for improvement and refinement.

Component testing: Ensures individual front end components create the correct response in the back end. We will also test to evaluate the platform's general usability behavior (e.g. page load times, smooth rendering of components, no lag, etc).

6. Project Management

This section discusses the management aspects of the project.

6.1. Team Qualifications

Hardik Polamarasetti is a senior at Cleveland State University pursuing a Bachelors of Science in Data Science with Minors in Computer Science and Statistics at the Washkewicz College of Engineering. He is a senior that has taken courses on machine learning and web design and is proficient in a number of programming languages that will be helpful in the project.

Kennedy Saxton is a senior at Cleveland State University pursuing a Bachelors of Science degree in Computer Science with a minor in Mathematics. She is a senior who, through her experience at her Union Home Mortgage internship, has become skilled in project management, user acceptance testing, compliance standards, and graphic design. These skills, along with web design and programming skills learned through her courses, will be helpful for this Senior Design project.

Michael Hylton is a senior at Cleveland State University pursuing a Bachelor of Science degree in Computer Science with a minor in Mathematics. Michael is a senior with experience in the IT field that has granted him experience with Python, HTML, CSS, PowerShell, and SQL. In addition, he participated in policy speech and debate throughout high school that granted him extensive experience with economics and national tax law. This project is a natural convergence of his experience, skills, and interests.

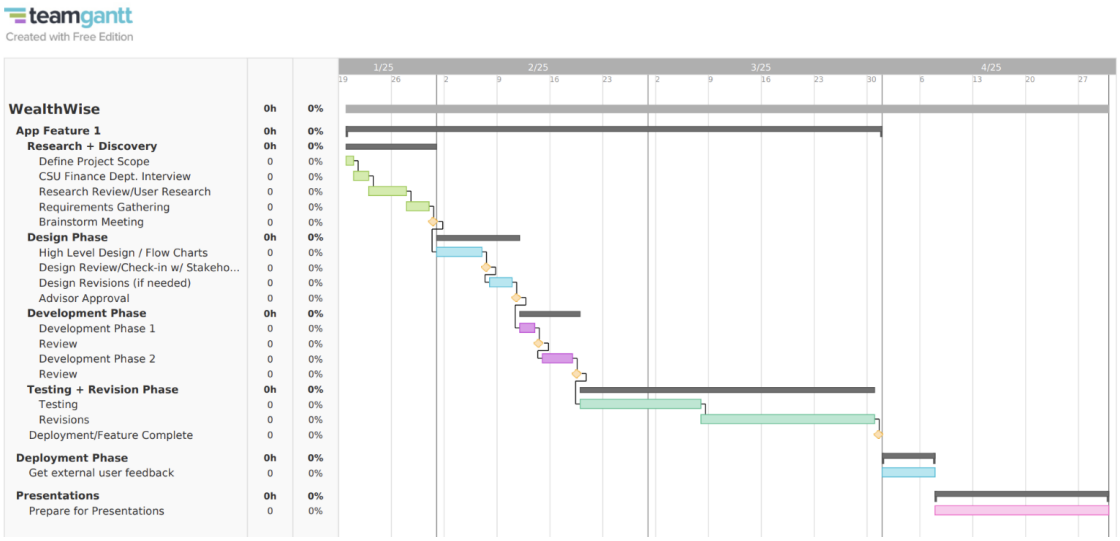
Elizabeth Caona is a senior at Cleveland State University pursuing a Bachelors of Science in Computer science from the Washkewicz College of Engineering. Elizabeth enjoys the ins and outs of financial engineering and focus in her internship is UX/UI (User Experience and User Interface) design. She is excited to combine these interests and skills throughout the senior project.

6.2. Task Assignment

The web design aspect will be split between Elizabeth Caona and Kennedy Saxton evenly. Their primary objectives will be to create a user friendly platform that

provides users with an easy way to find tax information for themselves and their businesses. The Machine Learning aspect will be split evenly by Hardik Polamarasetti and Micheal Hilton to give users a tax strategy that optimizes their savings. The Web scraping aspect will be split evenly among the whole team because that is a new concept that the team will need to learn.

6.3. Timeline



Utilizing the Gannt chart platform, we as a team have come up with a timeline for the Spring 2025 semester that will allow us to tackle all the aspects of our project in a timely manner, while allowing time for feedback, error correction, and preparing for the Senior Design end of semester presentations.

6.4. Deliverables

The end product will be a website or an application where users can receive information about their tax situation such as new laws, local regulations and applicable deductions. Additionally, users will be able to input data for their business and themselves and receive precise recommendations for a tax strategy to optimize their savings. This recommendation will be based on a machine learning model that is trained on data from many other businesses and individuals. The end product will also use web scraping to ensure the user is always given the latest tax information if there are any regulatory changes.

6.5. Budget

Several team members have a preexisting subscription to ChatGPT 4.0, which will help with creating mock data sets to work with. Because these are already paid for, these fees will not be included in the budget for the project. Outside of that, this project will be using free, readily available resources, making the budget for the project $0.

6.6. Communication and Coordination with Sponsor

The team regularly meets with their designated faculty advisor, Dr. Zicheng Chi, and updates him on regular developments on the project. Ideas for the project and implementation strategies are discussed.

7. Professional Awareness

This project demonstrates a thorough understanding of professional and ethical responsibility by adhering to the standards of the IRS and laws regarding tax related advice in the U.S. It also prioritizes privacy and security for users data by implementing security features and a design that does not reveal users sensitive tax data.

As tax laws are constantly changing and every state has its own variations of the law, there is a constant need to learn and improve the platform to keep up with the latest in taxes. The design utilizes constant updates to ensure it always has the most up to date tax information in order to provide the user accurate and reliable information.

The societal implications of this solutions would be monumental to individuals and small business owners that do not have access to expensive CPAs and are not experts in complex tax regulations. This project leverages technology to solve these issues and help bridge the gap between those with access to professional tax services and regular people.

The project addresses high failure rates and barriers that small business face in an increasingly competitive landscape, demonstrating knowledge of the issue. It does this providing a solution to these issues in a cost effective and accessible package for users to overcome these challenges.

8. Conclusion

The WealthWise project aims to address a significant gap in the accessibility and effectiveness of tax strategy tools available to small businesses. Through the integration of machine learning, web scraping technologies, and a user-centered web interface, the team is developing a platform that empowers small business owners to make informed tax decisions without incurring the high costs associated with professional services.

Progress to date includes defining system architecture, selecting relevant technologies, and outlining a robust plan for testing and verification. Key features under development—such as a machine learning model trained on artificial business datasets and a responsive, accessible web interface—are designed to support the delivery of personalized, up-to-date tax recommendations. The team has also prioritized legal and ethical compliance, especially in relation to IRS regulations and data privacy laws.

As development continues, the team will refine both front-end and back-end systems, implement and validate the machine learning model, and conduct comprehensive testing to ensure usability, accuracy, and compliance. The final product will serve as a proof of concept that demonstrates the potential of applying advanced technologies to democratize access to high-quality tax optimization tools for small businesses.

WealthWise ultimately represents not only a technical solution, but a meaningful contribution to reducing barriers to financial success for entrepreneurs navigating a complex regulatory landscape.

References

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[5] IRS, “Business Structures | Internal Revenue Service,” *Irs.gov*, 2019. https://www.irs.gov/businesses/small-businesses-self-employed/business-structures

Appendix A: Résumés of Team Members

The following pages present one-page résumés of the team members for this project.

Hardik Polamarasetti
hardikpolamarasetti@gmail.com | (904) 852-4164 | U.S. Citizen

EDUCATION

Cleveland State University, Washkewicz College of Engineering **Cleveland, OH**
Bachelor of Science in Data Science *January 2023-May 2025*

- Minor: Computer Science
- Minor: Statistics

TOP SKILLS

- Python
- Tableau

- SQL
- R
- Java
- C
- MongoDB
- Machine Learning
- scikit-learn
- Data Visualization
- Data Mining

PROJECTS

Predicting Heart Disease
Machine Learning/Python
- Predicted heart disease in patients with 87% accuracy
- Used a variety of preprocessing techniques and scikit-learn models

Document Search Engine *Flask/HTML/CSS*
- Retrieved relevant documents based on user queries; BeautifulSoup, TF-IDF and cosine similarity used

PRIOR FIELDS OF EXPERIENCE
Medical
- University Hospitals (Volunteer)
- Stratford Care and Rehabilitation (Volunteer)

Warehouse
- Amazon warehouse associate

Food and Beverage / Hospitality
- 1899 Indoor Golf
- Pins Mechanical Co

Michael A Hylton
(216) 213-8056
2788154@vikes.csuohio.edu

SKILLS
- Customer Service
- MATLAB Programming
- C, Java, Python, HTML, and CSS
- Github Proficiency
- SQL and Pandas Proficiency
- Technical Writing
- Fundamental Calculus and Scientific Skills
- Development of Comprehension for Ethical Issues
- Effective Communication and Leadership
- Fundamentals of Mathematics and Writing

EXPERIENCE

Ridgid Tool - IT Shop Floor Operations Specialist.	01/2024-
400 Clark St, Elyria, OH 44035	Present
Home Depot - Flooring and Window Treatment Specialist.	07/2023 -
3330 Center Rd, Brunswick, OH 44212	01/2024
JCPenney - Window Treatment and Mattress Specialist	07/2021-
17177 Royalton Rd, Strongsville, OH 44136	07/2023
Marc's - Cashier	06/2019-
7393 Pearl Road, Middleburg Heights, OH 44130	06/2021

EDUCATION

Cleveland State University	01/2021-
Major: Bachelor of Science, Computer Science	05/2025
Minor: Mathematics	
GPA: 3.59	
Cuyahoga Community College	08/2019-
	12/2020

COMMUNITY

- 4-H - included various community service projects, team-building exercises, and public speaking opportunities
- Competitive Speech and Debate - Included public speaking, and mentored new students.

Kennedy Saxton
(440) 241-9817
k.m.saxton52@vikes.csuohio.edu
Cleveland, OH

EDUCATION

Cleveland State University
Bachelor of Science, Computer Science August 2020 – December 2025

SKILLS

- Business Requirements
- QA Testing
- Project Management
- User Experience

- Power BI
- Java (Programming Language)
- Microsoft Azure
- SQL Server Management Studio

EXPERIENCE

Business Systems Analyst Intern at Union Home Mortgage, Strongsville
May 2023 — Present

- Collaborate with cross-functional teams to translate business needs into technical specifications and assist in the development of solutions
- Support project managers in project planning and execution
- Maintain accurate documentation for reference and compliance purposes
- Conduct quality assurance testing to identify system issues and improve performance

Lead Sales Associate at DSW Shoe Warehouse, North Olmsted
December 2020 — May 2023

- Delivered exceptional customer service by listening to customers' needs and providing recommendations
- Consistently exceeded sales targets, resulting in recognition from upper management and contributing to the store's overall success
- Assisted in inventory management and maintaining accurate product displays to maximize sales
- Conducted training sessions for new associates, focusing on product knowledge, sales techniques, and customer service standards to ensure a knowledgeable and skilled sales team

ELIZABETH CAONA
Software Engineering Co-Op- Fluent in Spanish

773.699.3297 linkedin/in/ecaona elizabeth.caona@outlook.com Cleveland, OH

EDUCATION

Bachelors: Computer Science at Cleveland State University — Cleveland, OH — May 2023 – May 2025
Associates: Engineering Science at Wilbur Wright College — Chicago, IL — Jan 2021 – May 2023

TECHNICAL SKILLS

Programming Languages: Python, Java, C, HTML, CSS
UX Tools: Figma, Adobe Creative Suite, Canva
Project Management Tools: JIRA, Git
Productivity Tools: Microsoft Excel, Word, Teams, PowerPoint
Operating Systems: Windows, MacOS, iOS, Linux
Database Management: SQL, Oracle, NoSQL

PROFESSIONAL EXPERIENCE

Software Engineering Intern/Co-Op
Sherwin-Williams HQ – Cleveland, OH — May 2024-Present
- Collaborated using python to automate a 7-hour process to 30minutes, improving efficiency and accuracy.
- Expanded the software automation project to cover all company SCADA systems across 63 manufacturing plants nationwide.
- Hands on experience in application/software development, Linux, Oracle, cybersecurity, and DevOps.

Scholarship Awards Program Assistant
College of Engineering, CSU – Cleveland, OH — May 2023-Present
- Prepare and distribute $868,592+ worth of 72 scholarships to 274 engineering students, keeping meticulous records of all accounts throughout the award year.

Analyst Engineering Intern
Cleveland State University – Cleveland, OH — Aug 2023-Dec 2023
- Improve data efficiency by analyzing, compiling, and organizing 15 years of College of Engineering scholarship data utilizing excel, financial aid software, and data management software.
- Design and create comprehensive deliverables for 54 endowment donors.

Engineering Co-Op
Gewalt Hamilton Associates – Vernon Hills, IL — Nov 2021-July 2022
- Conduct 200+ site assessments in 13 townships utilizing innovative technologies such as structural scanners and digital mapping tools to create visual representations of sites and identify potential infrastructure issues.
- Updated project databases with accurate and current inspection data and created deliverable reports for serviced townships.

PROJECTS

Capstone Project
- Proposed and led the WealthWise project, a full-stack tax optimization platform for individuals and small business. Focused on user experience and front-end development designing intuitive user experiences and intuitive interfaces. Collaborated on back-end and database components to deliver personalized tax strategies integrating financial data analysis, regulatory considerations, and Python-based algorithms.

Quantum Approximate Optimization Algorithm
- Evaluated the QAOA algorithm on a Quantum Simulator, leveraging hybrid classical-quantum techniques to optimize solutions. Developed visualizations to demonstrate algorithm performance and identified potential improvements for optimization.

Computer Networks Project
- Integrated quantum-inspired techniques like stimulated entanglement, QAOA, and quantum annealing to improve Wi-Fi signal coverage and router placement in LOS and NLOS scenarios.

Leadership, Certificates and Recognitions

Leadership: President of the Society of Hispanic Professional Engineers, Capstone proposer and leader, Quantum Computing Club
Recognitions: Nominated for the 2024 100+ Latinos Cleveland Must Know Cohort
Certificates: IBM Skills User Experience Design Fundamentals, Microsoft UX Design Professional Certificate

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