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FURSCA End of Summer Report
Summer 2025

Tax Assistant Tool for Non-Resident Filers

Introduction

This summer, I developed a python based tax estimation assistant designed for international students in the U.S., particularly non-resident filers under F-1, J-1, and H-1B visa categories. The goal of the project was to bridge the information gap faced by international students when filing U.S. taxes, which often involves complex rules around residency, income types, and treaty benefits. I aimed to design an interactive tool that guides users through key tax-related decisions by asking user specific questions and calculating estimated liabilities at the federal, state, and local levels. The assistant was created using Python and the Tkinter GUI library, with backend logic incorporating current IRS tax rules, state-specific rates, and treaty data.

Results

The development of the Tax Assistant Tool for Non-Resident Filers, a fully functional Python-based desktop application, was successfully completed. The tool guides users through questions about visa type, country of origin, state and city of residence, and income level. Based on these inputs, it calculates estimated taxes using federal tax brackets, state income tax rates, and applicable treaty exclusions. For example, students from treaty countries such as India or Germany can see how much of their income may be exempt from taxation under Articles 21 or 20, respectively. I also included special logic for students living in Michigan cities like Albion and Detroit where local income taxes apply, along with notes about student-specific exemptions.

Some of the more complex parts of the project involved building layered databases including visa rules, treaty benefits, and local tax rates, as well as programming conversational logic that changes according to user responses. While I initially planned to add automatic PDF generation for tax summaries, I chose to focus on ensuring the accuracy of tax estimates and improving user navigation. The current version of the assistant performs accurate calculations and offers detailed breakdowns of tax liabilities, net income, and key filing tips. I'm especially proud that it includes Albion-specific guidance, such as local tax credits and links to campus financial aid resources.

I plan to present this project at the Elkin R. Isaac Research Symposium in Spring 2026. I also hope to expand the tool to web and mobile platforms to make it accessible to students beyond Albion. As an international student who once struggled with tax filing, this experience has been personally meaningful. Creating a solution that makes the process easier for others has been deeply fulfilling. I am very grateful to the donors whose generous support of the FURSCA program made this project possible not only for me but also for all students pursuing academic research through the program.