Project Proposal

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1. *The Big Idea: What is the main idea of your project? What topics will you explore and what will you generate? What is your minimum viable product? What is a stretch goal?*

The main purpose of the project is a musical trading platform in which regular, everyday users can invest in a share of a band’s net worth. Not net worth, but band popularity, which can be calculated by pulling information off of famous music-streaming platforms such as Spotify. Band popularity can be calculated using an index I can create, whether it be top 10 songs popularity. If too hard to put together, the product would be more similar to a gambling platform that would bet on new and emerging artists, depending on the amount of work required to do either. The topics I will explore will be the music industry (Spotify API), financial trading platforms (or one’s similar to kickstarter or Bloomberg), and will need to pull API and live data in order to generate estimated payouts based on initial investments.

The practical application of this program would be to help bands receive funding for their musical abilities, even when they aren’t signed or necessarily famous. Obviously, with this project all money spent would be kept internally, but in a real-world scenario this would be used as a fun “Kickstarter”-like way of putting money into bands, where, considering they gain popularity and traction, the band and the investors receive compensation.

My minimum product would be a program that you can enter in a sum of money which will be the initial investment, and then over X amount of days when you ask for a check or withdrawal it will give you the payouts of your investment in the bands, whether that be positive or negative. The payouts would be in theoretical dollars, since the minimum product would not be hooked up to a financial API. It should also give you real-time updates on most popular bands and fastest growing bands.

A stretch goal for me would be to create a fully functional software (basic front end design too) that would incorporate multiple APIs, possibly a Venmo for financial investing and maybe even another popular streaming service such as Apple Music to get a more accurate reading on band popularity.

1. *Learning Goals: Since this is a team project, you may want to articulate both shared and individual learning goals.*

My learning goal is to work with API’s (although I am currently interning for a company where my primary project consists of working with an API, so I can use this to also augment my learning. Also, I want to be able to make an entire platform by myself, to learn what true coding implementation is really like. I would also like to learn how financial trading platforms work, and this would be another way to gain industry-like experience in financial services softwares.

1. *Implementation Plan: this will probably be pretty vague initially. Perhaps at this early juncture you will have identified a library or a framework that you think will be useful for your project. If you don't have any idea how you will implement your project, provide a rough plan for how you will determine this information.*

To implement, a lot of the focus would be on gaining access to the Spotify API and securing it in my software. I would utilize CodeAcademy, for they have a course on API pulling with Python, which would help me greatly. I may also need assistance with a software such as Postman, which helps achieve access to API’s in a more simplistic manner. One other tool I can use is my part-time internship that I currently have doing a project that pulls from an API with Python. Also, to actually gain knowledge in how financial software works, I may have to dig deeper into closer research. However, this software is not necessarily a trading tool as it is a gambling tool at the minimum-product level, so help from companies like DraftKings or online poker sites may help too. Since the algorithms necessary to calculate band popularity and valuation won’t be too difficult and intuitive, it should not be too much of an issue.

1. *Project schedule: You have 8 weeks (roughly - I know thanksgiving week is off) to finish the project. Sketch out a rough schedule for completing the project. Depending on your project, you may be able to do this in great specificity or you may only be able to give a broad outline. Additionally, longer projects come with increased uncertainty, and this schedule will likely need*

*to be refined along the way.*

Week 1-3: Spotify API Configuration: Learn to configure Spotify’s API and pull the necessary information for this project. Once there, put it into an easily accessible formatting so that the band valuations will be easy to use.

Week 4-5: Band Valuation: In week 4, come up with a methodology based on the information the API pulls to formulate sound investments for end users. Create the algorithms, and then in Week 5, implement them effectively.

Week 6: User interface: Configure user input methodology. Find out how a user would go about using the software, enable entry points where users can enter in relevant information, and display information the user intends to see when using the software.

Week 7: Front-End Development (Organization): This may come down to just organizing the software layout, but I will attempt some forms of basic front-end configurations.

Week 8: Final Touches/Presentation Preparation: Everything necessary is done by this point. We have the finished product, and the only thing left besides some code edits is the presentation, which will be elaborate enough in order to explain fully why this software can add so much value to an undervalued industry.

1. *Collaboration plan: How do you plan to collaborate with your teammates on this project? Will you split tasks up, complete them independently, and then integrate? Will you pair program the entire thing? Make sure to articulate your plan for successfully working together as a team. This might also include information about any software development methodologies you plan to use (e.g. agile development). Make sure to make clear why you are choosing this particular organizational structure.*

Due to my lack of a team, I do not have a collaboration plan, aside from gaining help from outside sources such as my Professor or other experts in Python. My main methodology to test out the codes I implement is by redundant testing, and debugging to make sure everything is perfect by the time I finally finish it off. Due to the fact that this project is only in my interest, it will be my responsibility to make sure everything is working and is able to be presented and explained thoroughly by the final presentation.

1. *Risks: What do you view as the biggest risks to the success of this project?*

The biggest risk is to make sure that the trading/gambling platform is actually feasible. The API portion is easy and I have already had experience in this. However, it is just the logic of allowing users to enter in data that gets pulled in real-time to calculate valuations of certain accounts and artists.

1. *Additional Course Content: What are some topics that we might cover in class that you think would be especially helpful for your project?*

The most important thing I would like to see is how to do front-end work with our python software, even if it is only minor. Aside from that, some other topics that may help are—how financial software works and the basics of pulling from an API with python and JSON.