API Learning Project Proposal

Name: Anthony Konas
ID: Anko8403

Vision Statement

This project will expand my professional skills by providing me with hands-on experience in API development, data integration, and web technologies.

Motivation

This project is important to me because it will lay a foundation of knowledge that will help me troubleshoot client problems and potentially reduce the amount of time they are waiting for responses from our support teams. My goal is to better understand how APIs work with the current software I work on for my full-time job so I can be of better assistance to my clients.

My clients develop API scripts to pull data from KPA Flex and integrate it into their systems for data analysis using programs like BI and Tableau. The type of data they're pulling includes safety forms that have been filled out, asset management of equipment, OSHA cases and hours, and incident reporting. My clients also use APIs to push data into the system to develop safety training, update employee profiles, and maintain record keeping.

Currently, when clients encounter API-related issues, I have to escalate to our technical support teams, creating delays and potentially frustrating experiences. While my job doesn't directly require API knowledge, understanding the fundamentals of how APIs work will allow me to provide more immediate assistance, identify common issues, and potentially resolve simpler problems myself. This will help me develop more trust with my clients and position me as a more valuable team member.

I expect to gain practical knowledge in API authentication, data formatting (JSON/XML), HTTP methods, and error handling - skills that directly translate to better client support and potentially open doors for more technical roles within my organization.

Specific and Measurable Learning Objectives

Given the 45-hour time constraint over the semester, here is what I believe is achievable:

1. **API Fundamentals (~15 hours)**: Complete online tutorials and courses using resources like FreeCodeCamp, Postman Learning Center, and Power BI Playground to understand REST API principles, HTTP methods (GET, POST, PUT, DELETE), and JSON data

structures.

2. **Hands-on Practice (~20 hours)**: Create and test API calls using Postman or similar tools to interact with publicly available APIs. Document at least 10 different API interactions, including authentication, data retrieval, and error handling scenarios.

3. **Documentation and Portfolio Development (~10 hours)**: Maintain weekly blog posts on my GitHub Pages site documenting learning progress, challenges encountered, and solutions discovered. Create a comprehensive resource that could help other beginners in similar situations.

I don't fully expect myself to become an API expert by the end of this project, but I aim to have a solid foundation that allows me to better support my clients and understand the technical conversations happening around API implementations.

Risks to Project Completion

1. **New Technical Language**: While I have some exposure to reading API scripts that we provide to clients, actually writing and implementing API calls represents a significant learning curve. The terminology and concepts may be more complex than anticipated.

2. **Limited Access to Company Systems**: I'd love to learn how to push and pull information from my company's software into my demo environment, but I'm still not fully sure if that's going to be possible due to security restrictions and access limitations.

3. **Scope Management**: With the wealth of API-related topics available, there's a risk of getting off-topic with subjects I don't need to know, potentially wasting valuable learning time on advanced concepts that aren't immediately relevant to my goals.

4. **Balancing Multiple Technologies**: Learning APIs while simultaneously picking up HTML/CSS for my GitHub portfolio could dilute my focus and slow progress on both fronts.

Risk Mitigation Strategies

1. **Structured Learning Path**: I'll follow a predetermined curriculum using the resources I've identified (FreeCodeCamp, Postman Learning Center, Power BI Playground) to ensure I'm learning foundational concepts before moving to advanced topics. I'll dedicate the first third of my time to theory and the remainder to practical application.

2. **Alternative Practice Environments**: If company system access proves impossible, I'll focus on publicly available APIs (like weather services, social media APIs, or sample data APIs) that provide similar functionality to what my clients use. This will still give me

relevant experience without security concerns.

3. **Weekly Check-ins and Documentation**: I'll maintain weekly blog posts that force me to reflect on what I've learned and whether I'm staying on track. This documentation will help me identify when I'm veering off course and need to refocus.

4. **Time Boxing**: I'll allocate specific hours each week to API learning versus web development, ensuring that neither area gets neglected. The GitHub documentation serves my API learning goals, so I'll focus on simple, functional web design rather than complex styling.

Project Assessment Criteria

I'm evaluating the success of this project using the following:

1. **Knowledge Demonstration**: Successfully complete 10 documented API interactions using different services, showing proficiency in GET, POST, PUT, and DELETE operations with proper authentication and error handling.

2. **Practical Application**: Create at least 3 API scripts that could theoretically be used in scenarios similar to those my clients encounter, demonstrating understanding of data extraction and integration principles.

3. **Documentation Quality**: Maintain weekly blog posts that clearly explain concepts learned, problems encountered, and solutions discovered.

4. **Problem-Solving Capability**: Successfully troubleshoot and resolve at least 5 API-related issues during the learning process, documenting both the problems and solutions in detail.

5. **Professional Application**: Identify and document at least 3 specific ways this knowledge can be immediately applied to improve client support in my current role.

The project will be considered complete when I can confidently explain API concepts to colleagues, demonstrate practical API usage, and have created a comprehensive learning resource that documents my journey from beginner to functional API user.

Project Portfolio Link

GitHub Pages Site: https://anthonyk47.github.io/AkonAPI/

This site will serve as the central hub for all project documentation and will eventually contain:

- Copy of this proposal

- Weekly learning updates and progress reports
- Code examples and API scripts created during the project
- Resource links and tutorials that proved most helpful
- Final project report summarizing key learnings and applications
- Troubleshooting guides for common issues encountered

The site will be updated weekly throughout the semester to track progress and provide a comprehensive record of the learning journey.