

## **AppFolio Vision Statement**

**Project Title:** Sibyl

**Team Name:** Excelsior

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### **What is the problem?**

Property Managers collect loads of accounting data across their portfolio of properties. Currently, there are no insights or gains being made with this data besides backlogging. We aim to create an ML model to forecast property management expenditures and income. This will give them insight into which areas of their business to focus on. We plan to create a dashboard to present our predictions in a clear and concise manner using dynamic graphs and charts.

### **How is the problem being solved?**

Currently, the industry standard for visualizing data is modularization by black-boxing ML features and interfacing with the frontend components through API calls. We aim to adopt this design by creating a full-stack web application tasked to visualize the dashboard and python web application to generate ML insights. These two independent applications will interface with each other via API calls. This allows us to build a robust, future-proof solution, where future ML models that AppFolio might take on can easily visualize their insights on our dashboard.

### **How will we solve this problem?**

We aim to solve this problem by creating a UX-focused dashboard that draws insights from Appfolio's rental manager's accounting data. With this data, we will be able to produce dynamic graphs and charts of manager's past data, as well as use machine learning to create

projections of their accounting data in the near future. Machine learning is the core of our dashboard as we aim to give predictive analysis to allow rental managers to better understand and control their income and expenditures for properties.

### **Implementation Choices:**

In our implementation, we plan on developing in Ruby on Rails for full-stack development. The majority of our team is proficient in Python, so Ruby on Rails is an alternative that would allow us to work alongside AppFolio's codebase in a language that is similar to Python. For the machine learning side, we plan on using Python because of Python's proficient deep learning and machine learning libraries. We intend on black boxing the ML side to create a modular design that would allow any web application to call an API to access the algorithm.

### **Milestones:**

- Get access to accounting data through the data-sharing agreement. See what the process is about how we can parse through this data and what specifics do we have access to.
- Start figuring out ML algorithms that can create the best projections.
- Create MVP