I. Introduction

A. System Introduction and Background

The Compensation and Cost of Living Supporting System provides users an insight into the living quality in an area based on their income and personal household needs. In this system, users can select any metropolitan area from the list and their income with a selection of specific requirements such as the size of household, the score of a school district, and crime rate. The project can generate a tailored analytic report for users that illustrates whether it would be good to live in the area.

As this is a capstone project for the CS 5934 class, the main stakeholders for this system are our professor, Dr. Hooshangi, and the development team. The development team contains five roles: the project manager, front-end developer, back-end developer, data engineer, and UX designer. The end-user for this project is anyone looking for advice or information regarding living quality in a major metropolitan area in the U.S. based on their current household needs and income.

B. Project Charter

1. Project Name

Compensation and Cost of Living Decision Support System

2. Problem Statement

Important decisions in our life require a lot of information. Most of the time the information required could be hard to find. Even if the information was available, it would be spread across multiple websites and in the end, the user has to do the analysis and decide what they need. Our team looks to build a single tool that will provide users with all the information they may need to plan major decisions, one example is, If a person is planning to move from the city they are currently living in, some of the major factors the user would potentially consider while buying their new house would be commute time to work, pay vs expenses in the area, school zones, and nearby grocery stores. We aim to provide all this information as a one-stop shop to the users.

3. Project Description

The Compensation and Cost of Living Supporting System is a website platform that provides users an insight into the living quality in an area based on their income and personal household needs. In this project,

users can input any zip code and their income with a selection of specific requirements such as the size of household, the score of a school district, and crime rate. The project can generate a tailored analytic report for users that illustrates whether it would be good to live in the area.

4. Project Scope and Deliverables

The Compensation and Cost of Living Supporting System website aims to provide decision support services for zip codes in the National Capital region. The report supports searching multiple zip codes for users to make comparisons. The final deliverable of the project is a report that contains basic geographic information, a net paycheck calculator, tables, and graphs to show the numeric data for users.

II. The Case for the System

A. Need for the System

1. What communities is the system going to serve? What demographics? What locations?

This system is a website tool that aims to serve working professionals who are considering relocation for a job offer or moving to another city due to other factors. The targeting users are from 22 to 60 years old, employed or freelancer, any marital status, and any household size that is interested in moving to a metropolitan area in the U.S.

We aim to tailor the search to the numbers or constraints specified by the user. For project purposes, only a few major cities are considered and cities which consist of CS professionals. These cities include the National Capital Region, Philadelphia Metropolitan Area, Greater Boston Area, Silicon Valley and New River Valley.

2. If your system is an app, why does it have to be a mobile app (not a desktop or a web application)?

Not Applicable

B. Current Market and Justification for System

1. What are the other systems that have goals similar to your system (mention some examples)? What criticism do you have about them? How do you think your system will be different?

   Several websites provide part of functions that are similar to our system including online real estate marketplaces like Zillow and Apartment.com and also paycheck calculator websites like smartasset.com. However, these websites that provide similar features cannot be a substitute for our system as their users only can obtain one side of data. Our system integrated the income calculation and the living quality factor for a specific metropolitan area. By using our system, users can obtain all necessary information for their decisions in just one step. There is no other website currently in the U.S. market that provides the same function compared to ours.

C. Competitive Position & Benchmark and ROI

1. What is "new" about the system? Is it the idea of it, or is it the way it approaches a solution that already exists?

   It provides a tailored report based on the user's situation in terms of income and living demands. We believe there is no substitute or similar tool currently in the market. The competitive advantage of the system is providing a time and effort-efficient way for users to gather all information they need in a straightforward step.

2. How do you think your system has the potential to earn money? Is profitability even a concern for this project?

   I think this system has a moderate level of potential to generate profits. The profit would mainly be generated from hosting advertisements on the website as we plan to provide free open-source information for the website users. However, it depends on the number of locations we determine to provide information and the volume of visitors on our website.

III. System Description

A. Technical, Business, or Administrative Problem Addressed

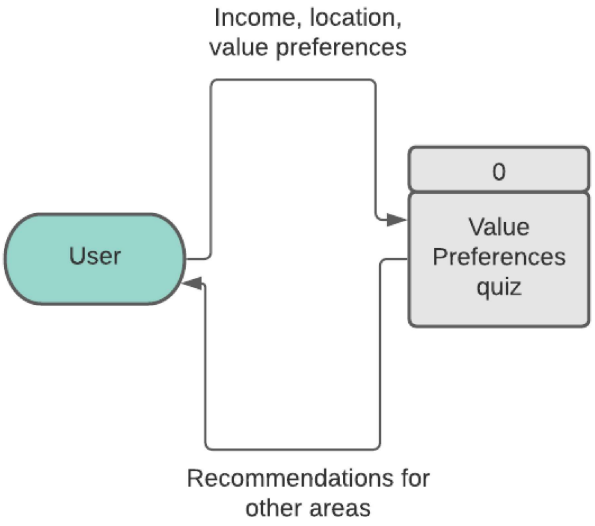
1. Identifying a reliable source of data

a) Finding an appropriate API
b) Open-Source

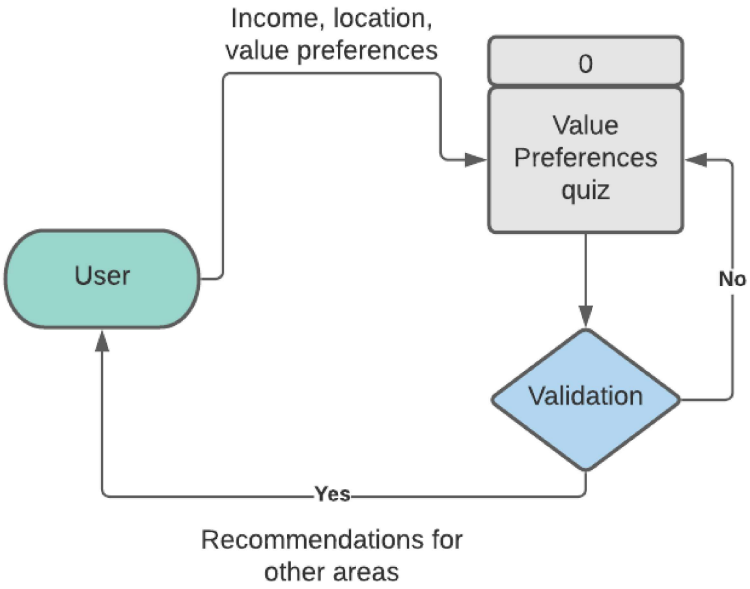
2. Maintaining licensing for access to different software tools

B. Data Flow Diagrams (DFD) – Context, Level-0, Level -1

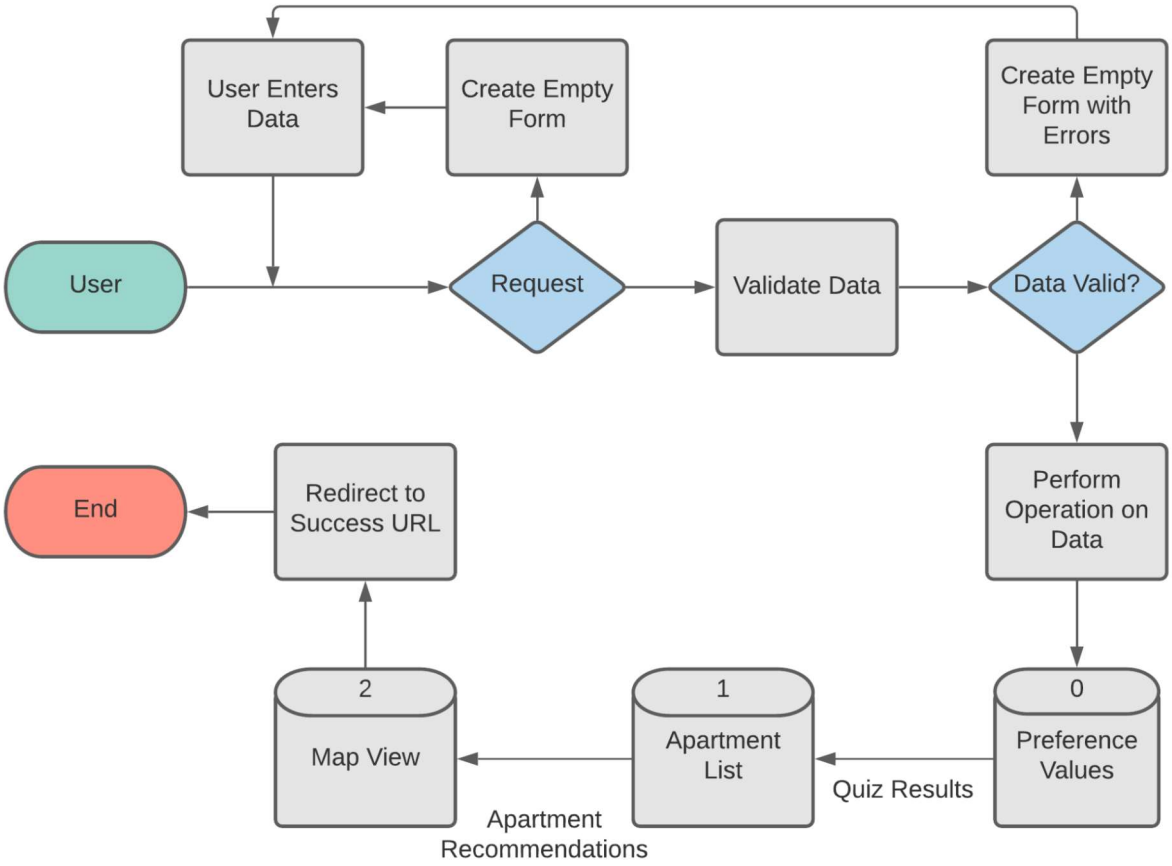
Context



Level-0



Level-1



C. Assumptions and Risks

The primary risk our team is worried about is the accuracy and thoroughness of our data. Identifying a reliable source of data will be instrumental to the success of our project. This project assumes the ability to either connect with an API that matches up with our data requirements or discover freely accessible data online either from a Federal census, local government, etc.

IV. Team Dynamic

A. What skills do your team members have to work on this system?

- Mark - GitLab, Django, Python/Javascript, SQL, Ajax, Data Analytics, Agile Project Management
- Chris - Django, JQuery, Ajax, SQL, Data Analytics, Cloud Architecture

- Srija - Django, SQL, Data Analytics
- Steven - SQL, HTML, CSS, Data Analytics
- Xu - Balsamiq, Lucidchart, Design analysis, Market research

B. What skills are missing and you'll need to learn to deliver the system? How are you planning to obtain such missing skills?

1. Limited experience in developing a web app
2. Limited experience with vue.js
3. Limited of free reliable data source