KidsVoice

Executive Summary

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Background

KidsVoice is a nonprofit legal agency that represents abused, neglected, and at-risk children, up to the age of 25. Founded in 1908 as the Legal Aid Society, KidsVoice has been providing legal advocacy services exclusively for dependent children since 1983. Since 2001, KidsVoice has increased its staff from 12 to 75 and its budget from $500,000 to $4 million. It is evident that KidsVoice is committed to giving each one of its clients the best service possible.

KidsVoice provides the necessary health, educational, and social services that their clients need in order to grow up in a safe, healthy environment. KidsVoice's main goal is to provide long-term support for abused and neglected children, which is exemplified in its Three Pillars of Support: Securing, Advocating, and Growing.

Project Description

Project Opportunity
One of KidsVoice's main tasks is to generate reports on the different categories of clients and their relevant cases. However, the data that is involved in generating these reports come from several different data sources with varying data formats. KidsVoice's current process of generating these reports requires staff members to download excel files containing large amounts of data from each of the 3 sources and manually cross reference each file to generate the reports. This process is labor intensive and highly susceptible to user errors, causing data integrity issues.

Project Vision
Our goal was to deliver a system that would help streamline and automate KidsVoice's data entry and querying workflow. Specifically, the goals (and outcomes) of this project consisted of a database, created via a data migration pipeline (complete with data cleaning and normalization) that took parsed excel files as input, the ability to make queries in the database and to export their results, and a user-friendly way to interact with the database for all of these functionalities.

Project Outcomes

As a result of this project, we developed two important technological assets for our community partners. The first is the Microsoft Access Database which stores important information on KidsVoice clients and cases. The second is the migration pipeline that pre-processes internal and external data from several data sources and automatically populates the Access database.

This project changes KidsVoice's workflow by automating the existing manual process and by providing a centralized data store that aggregates data from several sources. Automation significantly reduces labor hours and increases data integrity by cleaning and standardizing the data format. The Access database also serves as the foundation for KidsVoice to move away from their legacy database systems into a centralized one.

KidsVoice's staff members will save approximately 5 to 7 hours a week by using this new system and its functionality can be built upon in the future to automate more tasks.

Project Deliverables

Project deliverables:

- Entity-Relationship Diagram with normalized data schema
- Microsoft Access Database
- Migration Pipeline
- Thorough documentation of all deliverables

Recommendations

We recommend that KidsVoice takes steps toward sustaining their technological solutions. In particular, to train or hire a new staff member for a tech support / developer role. In terms of next steps for the database project, we recommend looking into ways to host the database on the cloud or to migrate to another platform like AWS to support concurrent users across multiple machines. In the long run, look to consolidate the multiple internal databases into the new database for data integrity and consistency.

Student Consulting Team

Roshan Ram served as the team lead. He is a third-year student majoring in Information Systems. He will be interning at Apple this summer as a Machine Learning Engineer Intern, and is looking forward to a career in the fields of Data Science and Machine Learning.

Brian Chou served as the technical lead. He is a third-year student majoring in Information Systems with minors in CS and HCI. He will be interning at Meta this summer as a software engineer intern and is looking towards a career in software development.

Thomas Choi served as the documentation and quality lead. He is a fourth-year student majoring in Information Systems and Statistics. He will be interning at Credit Suisse this summer as a Technology Analyst and will come back to CMU in the fall to complete his Master's in Information Systems Management.