NewERA412 / Operation Better Block

Executive Summary

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Background

NewERA412 is an Allegany County-based violence prevention initiative created by Operation Better Block (OBB). As an application, NewERA412's purpose is to reintegrate citizens returning from the criminal justice system back into the present day society. NewERA412 is led and managed solely by Taili Thopmson. The initiative is funded by the City of Pittsburgh and the main goals of NewERA412 are to help street outreach workers (SOW) to: document the process of their daily tasks in local communities, provide appropriate resources to SOWs to refer to individuals in need, and to manage the SOWs from an administrative perspective.

Project Description

Project Opportunity

Our project opportunity was to fix the scalability issues with NewEra412, and this was divided into three main problems. Firstly, the geographical reach of the application was stunted by the limited region options in the database. Secondly, the inability to add and manage organizations in the application prevented new organizations from joining NewEra412's efforts. Thirdly, the application lacked data analysis capabilities for specific time periods in large sets of form data, and this was necessary for periodic reporting to sustain the organization's efforts and funding.

Project Vision

Our project vision was to modify the existing application and address the three aforementioned problems with multiple independent solutions. First, our team planned on expanding the region options in the database to cover all of Allegheny county. Next, we planned on implementing the ability to add, edit, and delete organizations, and we also planned on creating a supervisor user group and view for organization leaders to view and manage organization data. Finally, we planned on creating a feature that would allow administrators to download form data from a selected timeframe for reporting.

Project Outcomes

Since our team was working with an existing codebase that had all the technology we needed, we did not add any new tools. But our team did add a new organization entity to the database,

and we also reconfigured the user entity in the database to account for the supervisor user type and its permissions. Regarding new content, we implemented a region list to cover all of Allegheny county, the ability to add and modify teams, a supervisor view, and a feature to download form data from a specific time period with aggregated statistics. Our community partner was very satisfied with our features, specifically since the ability to add organization, create supervisors, and analyze data without having to directly read or modify the database would allow for capacity building in the future. Overall, our team's solution was able to increase the scalability of the NewEra412 application, processing a 30% increase in partner organization and a 20% increase in street outreach workers.

Project Deliverables

Our team's primary deliverable was the updated web application with the new features, which is now deployed at newera412.com. Regarding the delivered features, we added missing regions in Allegheny county to the application's database. We also implemented the ability for administrators to add and modify teams, and we created a supervisor view to view team data. Additionally, we implemented a feature that allows administrators to download form data from a specific time period. Finally, we addressed a critical security concern on the website and implemented a proper permissions system for viewing pages on the final deployment.

Recommendations

One of our team's recommendations for future developers is to expand the testing framework to cover end-to-end testing instead of just database entity testing. Another recommendation we have is for future developers to implement a catch-all error page to avoid having the default error page overwhelm users or possibly create security hazards. Finally, our biggest recommendation is to involve a professional web developer in development for the future, primarily to avoid having security concerns and implementation errors that might arise from student developers.

Student Consulting Team

Karen Wu served as design lead and responsible for client transition. She is a third-year student majoring in Information Systems with minors Business Administration and Human Computer Interaction. She will be interning in New York this summer and is looking toward a career in UX/UI design.

Ruitao Li served as project manager and managed client relationships. He is a third-year student majoring in Information Systems with a minor in Computer Science. He will be interning at BNY Mellon this summer and is looking forward to a career in software engineering.

Vishnu Pathmanaban was responsible for quality assurance. He is a third-year student majoring in Information Systems with an additional major in Computer Science. He will be interning at Tanium this summer and is looking forward to a career in software engineering.