Integral Solutions
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Project proposal
September 20, 2022

Intended use of the system:

In 2006, Judith Cunningham created The Montessori Model UN (MMUN) which focuses on organizing international model United Nations programs to help the younger generations become competent and educated leaders of tomorrow. Named after Maria Montessori, an Italian physician and educator whose teaching methods emphasize independence and choice of students. The Montessori Model UN adheres to the Montessori principles taught by Maria Montessori. MMNU mission is "to inspire and empower youth to create a better world through awareness, networking, empowerment, and impact projects" (LinkedIn). MMNU is determined to build a platform that gives young people the opportunity to work on solutions to issues that matter to them.

The usability of the first version of the Montessori Model UN (MMUN) policy voting website built by a previous school was primarily focused on teachers and their students. However, MMUN wants Integral Solutions to build off this already existing website to market to an older audience that would include people over 24 years old. The main version to access this would be the website, however MMUN also wants a smartphone application built that reflects the same features and requirements as the website.

"Hear Me Now!" is a website and mobile application that allows students to submit project proposals and track votes of people who support their project proposals. Teachers are also able to vote on such project proposals. MMUN would like to extend the functionality of the existing website to allow adults beyond 25 years old to vote on project proposals and submit their own proposals as well. Moreover, corporations will be able to view, vote on and sponsor project proposals. Students, teachers, and corporations will be able to donate to the cause that a particular project proposal tries to solve in the form of a credit card transaction. Students and adults can submit and edit their proposals and view and vote on other project proposals. Teachers can view and edit their students' proposals, and view and vote on any proposal. Corporations can view, vote on, and sponsor any project proposal. Administrators can delete, edit, and review accounts and proposals.

Its overall functionality:

The system will be a progressive web application and mobile application that will contain projects based on the United Nations 17 Sustainable Development Goals (SDGs). These projects will be hosted in a database and will be split up by the SDGs they are based on. The database will contain all relevant information including title, description, author/s, # of votes. Everything from the database will have a visual component in the application that will display the aforementioned information in a structured and pleasing way. Each project will have their own page within the application that will allow the users to vote

Students will be tied to a teacher account that they used to sign up for the application, each teacher will have a group of students linked to their account. This will help to show who is responsible for a group of students and will allow a teacher to approve proposals that the students posted. The teacher will also have control over the proposals posted by the students allowing

them to edit and delete the content. By having all students linked to a specific teacher account the application can prevent spam accounts and projects from being posted.

The system will also contain a donation system where any of the user groups will be able to donate to a proposal of their choosing. A user will want to be able to support projects they care about and have a secure donation link. This extends to corporations and other organizations that may want to sponsor a proposal. Sponsorship will be listed in a different area opposed to donations to show the type of support a proposal may be getting.

Main components of the system:

Since we want to make this website scalable to be able to host tens of thousands of users and their policy ideas, Integral Solutions wants to use a reliable database management system such as MongoDB Atlas. With this system we can use our database in the cloud and allow the user to use a local installation so there will be no need for a paid subscription. Furthermore, MongoDB uses non-relational databases which can make horizontal scaling easier to span across multiple machines. MongoDB Atlas uses key-value pairs to store and connect data in a simpler fashion.

The main component of this project is the website that will influence the functionality and design of the mobile application. To use the website, a user will have to create an account to access the rest of the site. This way we can track which policies they are following. After the user has logged in, they will land on the homepage where the layout will be like that of a social media site. Each user will have their own profile page displaying all the project proposals they have created. Also, like any profile page there is space to put information about the actual user. Each user will have a favorite page to click on, this will allow users to track each project proposal they are following. Since each project proposal will have the option to have money donated to the cause, the favorite page will display the amount of money raised and total number of followers for each individual project proposal. Finally, there is the discover page. There is a variety of project proposals that can be displayed on this page including trending project proposals by day, week, month among other things. The discover page can also include project proposals the individual user would be interested in based off previous followed project proposals. These three different web pages sum up the general basis for the website which will influence the design of the mobile app.

The entire project will be coded in the Ionic Framework where Integral Solutions will use TypeScript for the front end and Ionic for the back end of the project. The main reason for this is not only is this industry standard, but the previous team working on this project wrote the code in these two languages. So, to build off what they have started we will also continue to use these languages. However, Typescript can be beneficial to our project as it is easily scalable due to its fast refactoring, optional static typing, and ease of spotting bugs. Ionic on the other hand will also make this project easier to build. Ionic’s SDK allows for websites, like the one we will build, to be easily converted into mobile apps. This will help us easily transfer the different components of the website such as database, design, functionality into an app accessible through smartphones that can be downloaded on an App Store.