CS320-103: Software Engineering, Spring Semester 2022

Team Project Proposal

YCP Personalized Commencement Project

Team Members:

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Summary:

For our project, we will be taking on the task of designing and implementing a personalized webpage for each student during graduation. On the surface, this project would consist of a webpage and a database for storing all of the student's content. The content could be accessed by scanning a QR code or the student's ID. The webpage would be a template for the student's information and have to format itself based on the content given. The webpage would be broadcast live with the commencement over Zoom and shown in-person on several televisions or monitors. When the student scans a form of identification, the student's name would be said aloud by a recording the student would upload, or a generic voice recording could be played as a default. Depending on the size of the graduating class, each student would get between 10-15 seconds to show off their content.

The content a student could upload would consist of an audio clip of their name, information about their major(s), minors(s), if they achieved honors, overall GPA, sports, clubs, and organizations. They could also include any pictures that they wanted as well as a short video showing a memorable moment from their college experience. The student would fill out an online form with the necessary information and they would be able to attach the pictures and videos they would like to show, at the end of the form. There would be a webpage preview area so the student could see how everything would

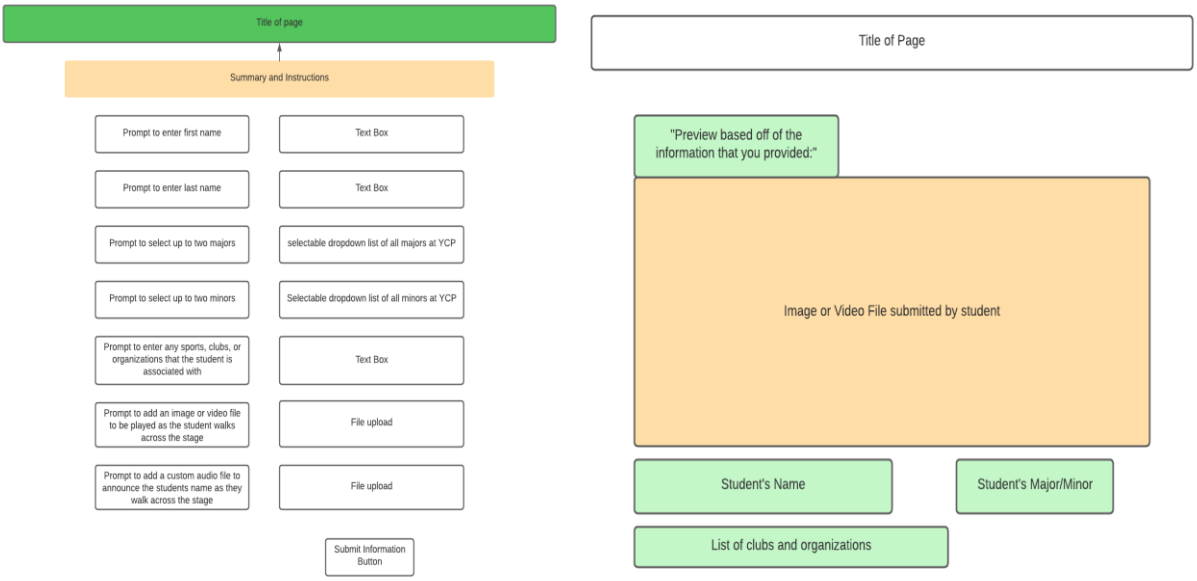
look for their commencement. The content would be approved by each student's advisor prior to the ceremony and the information could be edited as needed within a certain timeframe.

Features:

- *Login:*
    - The login is necessary as it will allow the user to link their submitted data to the correct database file. This can either be done by logging in through MyYCP or creating a separate login for the user to use.
- *SQL Database:*
    - Having the database is pivotal to this entire project. It will be our main source of storing user data. The user will be able to directly upload files and information to the database through the form submission jsp. This will allow the data requested to be pulled for presentation during the commencement.
- *JSP Form Submission and Content Preview Websites:*
    - The JSP's are going to be extremely important to our project, as they are what most, if not all, of the front end development will consist of. The first jsp will allow the user to interact with the database directly by submitting information and media to be stored in their profile. The second jsp will show the user their submitted data as a preview of what will be shown during the commencement. If the preview is satisfactory to the student, they can confirm their decision in order to generate the QR code which they will scan as they walk towards the stage.
- *Java Backend Programs*
    - The backend java programs will also be a necessary part of the project, as we intend for the programs to consist of multiple model and controller classes. These classes will contain methods that will pull data from the SQL database depending on which user the data applies to. After pulling the data, the ultimate goal is to store the data related to the specific student inside of the model classes in order for controllers to provide specific methods to extract the data to the content preview page and the QR code generated after confirming the student's decision.

Sketches:

Main form submission (left) and preview of the submitted content (right)



Responsibilities:

Though the project contains many drastically different tasks, a majority of the tasks need to be completed prior to one another. With that being said, the assignment of responsibilities will be a difficult task as we have come to the conclusion that the best approach in our scenario is to have each of us working on the same features at the same time. In order to protect ourselves from conflicts in the project, every feature that we begin to implement will be split into a few tasks, for example the java backend can be split into each of us working on a different controller and a different model. As we progress through the development process, however, the tasks will become fewer but more in depth. To prevent any issues in these situations, we will have two members at a time working on parts of the development together and leaving annotations of what has been changed, fixed, or finished inside of the files.

Challenges:

When discussing the project, we came to the conclusion that the most difficult part of this project will likely be simply wrapping our heads around what we need to get done in order for our project to work as intended. Planning and developing a smoothly running operation will likely require the most effort out of all of us. This is not to say that the actual program development portion of the project will be a cakewalk, because it likely will not be. Ultimately, our goal is to make this program run swiftly, efficiently, and with absolutely no error. Bringing any large-scale project to such a level of fine-tuning requires a solid amount of work from everyone involved.

In terms of specific issues we will find while in development of the actual code, it is hard to say what will end up giving us the most difficulty as we are still in early stages of development. However, there are a few aspects of the project that we already see as quite trivial, such as the implementation of a QR code generator that is linked directly to the SQL database which can pull specific data for presentation over multiple devices.

Development Environment:

Regarding the development environment that we will be working in, the project will be created and most commonly developed using the Eclipse IDE. The languages that we will be using will consist of Java and SQL for the development of the backend, while the front end will be developed using Java and several JSP's. Furthermore, we will be developing the JSP's with some assistance from resources such as the lecture topics and labs that are shown on the CS320 home page.