Team Name : CS-Secure

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### Project Description :

Our project attempts to serve the CWU Computer Science community by offering a possibly more steamlined and understandable way to plan for the degree. Coming into the major and attempting to decode the online resources can be stressful and turn people away. With our tool however we are seeking to allow users to see the chain of classes they will need and use a simple drag and drop interface to determine their next steps.

The application can be used mainly on the web, but mobile development is pending and not far out. Further degrees beyond CS is also a possible future addition to consider later.

### User Guide :

Our application is hosted on the web and accesses a database using Node.js. Users can visit <https://cssecure.dev/> to see the homepage of our project, which displays an overview of the classes and sections within the CS major here at CWU. From there the user needs to click the button to Sign Up, in which case they will be taken to the welcome page. If the user has never used the application before they must enter an email and matching passwords, click sign up, then click on one of the two buttons to go to the sign in state of the welcome page. If users have created an account they can click “Sign In Instead” to enter their information if not automatically filled, then click “Sign In” to enter the full functionality of our application. Once in the Course Manager page, users can drag and drop elements into their seasonal planned slots or into the completed section, can click the button to add all planned in a season into completed, or drag items back into the previous sections. Buttons are also included to return to the homepage or the welcome page if needed.

### UML Diagrams :

A diagram of a software flow

Description automatically generated

A diagram of a person with text

Description automatically generated

A computer screen shot of a course

Description automatically generated

### Use Case Diagrams :

A diagram of a person with text

Description automatically generated

### Testing Overview :

During the creation of each part of our application, in group testing was done to ensure functionality worked properly and to stress test certain implementations. Limited user testing was performed to ensure that the site worked, gave correct output, remained in a visibly appealing state, was resistant to SQL injection, and could handle DDOS attacks. Through testing different strategies were found, such as using a different form of SQL statements within Node.js to prevent against SQL injection, or use Cloudflare to host the application as they offer reasonable DDOS protective measures. Also through testing it was found that some elements on the Course Manager page were 1 pixel shorter than others, so on certain browsers or OSs those elements could cause formatting to mess up and make the page unappealing or broken. One last thing found through testing was a need for the back buttons, as test users noticed they were locked into the most forward page once proceeding.

### Known Bugs :

As of writing this documentation, most known bugs have been fixed or are planned to be fixed, such as the pixel issue described in the section above. We are however open to suggestions and reports, sendable to [cssecure.380@gmail.com](mailto:cssecure.380@gmail.com) which is a public email for the group to use. It is also known, and under development, that when using IOs or specifically Safari the application can appear incorrectly or lack drag and drop functionality. This is being looked into and we are attempting to fix this issue.

### Possible Feature Additions :

As a group we have brainstormed a multitude of possible features to add going forward if we continue support for the application, or leave in documentation for future development. Given more time we could possible add support for any major, all classes, CS electives, advisor use to give the student online ideas, and more. A major piece of functionality that is possible, but would require a deal more time, would be to make the homepage non-static. Currently the homepage can be dragged around and played with, but isn’t used beyond that. We talked about making the course manager page have a dynamically created diagram which would show order past just dependcy checks. On that note, dependency checks for prerequisites is foremost on features that would need to be added given more development time. Course Manager is supposed to check the prerequisites for each class dragged into the planned slots or completed, and the database is built to support this, but currently the code is limited in this sense. Going forward this application could become the core of something bigger, or be used as just the proof of concept to outline a need for something that could be useful to all of CWU, students or faculty.