

# ClassOpen Upgrade

Dart/Flutter Web Application  
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## ABSTRACT

ClassOpen is a web application that faculty (advisors), students, and the records department use to find current classes, create schedules, and see what classes are in both the past and upcoming.

My part in this project was to make the user interface, that being how the website looks. This includes things like colors, placement of boxes, buttons, and more. Alongside this was making tests that ensure that the functionality we're wanting remains the same when making changes.

## INTRODUCTION

This project was worked on by Ethan Stong and I, with me being the front-end developer and Ethan being the back-end developer. The idea for this project began during the Software Engineering class in our fall quarter, in which we recreated ClassOpen's interface. While working on this, two of us decided to create an upgraded version.

During the project, we made a better interface that didn't look as cluttered, and to make it more friendly for mobile users. Alongside this, there were other features we wanted to add which is expanded further upon in detail in the next section.

## Building the Application

For our web application, we started by using Dart and Flutter to both host and build the program, which came with its own challenges. The first of those challenges was to do with something called a "Semantics Widget", which allows someone who is blind to know what a button or box is through a text-to-speech program. This widget often had an issue that makes other things not work, so it was disabled.

Smaller challenges we had were learning how to use Dart and Flutter, and how to build code that accomplished things that weren't already a built-in aspect of that programming language, one being a multi-select dropdown menu. Another small problem was deciding how to format data for different views (mobile, desktop, etc.).



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<input type="checkbox"/> 1123	ACCT 201	B	Aut 2023	Principles of Financial Acct	4	
<input type="checkbox"/> 1100	ACCT 202	A	Wtr 2024	Principles of Financial Acct	3	
<input type="checkbox"/> 1099	ACCT 202	B	Wtr 2024	Principles of Financial Acct	3	
<input type="checkbox"/> 1089	ACCT 203	A	Spr 2024	Principles of Managerial Acct	3	

*A cropped image of the "medium" view*

For additions that surpassed the original ClassOpen design, we started by adding the ability to save a class for later use, and remaking the search bar, which had some parts not working. Another (and the largest) addition was implementing a quarterly schedule that tells you if any selected classes have a schedule conflict.

## Final Thoughts

In the end, I feel like I learned quite a bit when it comes to programming for a product, and here are a few reflections on that:

- Things that are added should be modular if possible to keep code readable.
- Unit tests should be made as soon as you understand the structure of what you're creating.
- Always plan some extra time in case things go wrong, so you have time to fix those issues.

## Conclusion

Finally, while we learned a lot in this project, I believe that in the future this can be used by both students and advisors to make academic schedules more easily, and on a variety of devices.

Additionally, while not everything was added completely that we thought up in our fall quarter class, we made a plan of what we could add and went through with it, leaving enough room for future classes to improve upon it should they decide to choose this as their project.

## REFERENCES

- <https://classopen.wallawalla.edu>
- <https://dart.dev>
- <https://flutter.dev>
- <https://gitlab.cs.wallawalla.edu/wwu/schedule>
- <https://schedule.cs.wallawalla.edu>