AIM Portal Overhaul

Team Good AIM
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CSCE 482 Senior Capstone Design, SPRING 2025
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Abstract

This project aims to overhaul the Texas A&M University (TAMU) Accessible Information Management (AIM) Portal, transforming it from a paradoxically inaccessible tool into a representative of digital inclusivity. By implementing advanced accessibility features, automating key processes, and introducing customizable interfaces, the enhanced AIM Portal will significantly improve the academic experience for students with disabilities. The project addresses critical issues in digital accessibility, potentially serving as a model for higher education institutions worldwide.

1 Introduction

In an era where digital accessibility is crucial, the current AIM Portal presents a glaring contradiction. Despite its vital role in supporting students with disabilities, the portal itself lacks essential accessibility features, creating unnecessary barriers for the very students it aims to assist. This project seeks to resolve this paradox by overhauling the AIM Portal, ensuring it not only meets but exceeds modern accessibility standards.

Approximately 5% of TAMU's student body is registered with Disability Resources, representing a significant population whose academic success hinges on efficient access to accommodations. By enhancing the AIM Portal's accessibility, we're not just improving the website, we're leveling the playing field for thousands of students.

Our solution goes beyond compliance with accessibility guidelines. We're reimagining the AIM Portal as a user-centric platform that adapts to individual needs. From automated accommodation requests to customizable interfaces, every feature is designed with the diverse needs of students in mind. This project isn't just about fixing what's broken, but also about setting a new standard for digital accessibility in higher education.

1.1 Case Scenarios

Case Scenario 1:

Alex is a junior majoring in Computer Science who has ADHD. He often struggles with organization and remembering important deadlines. Alex frequently forgets to request accommodations at the beginning of each semester. When he does remember, he finds the process time-consuming and confusing because of the cluttered layout and functionality of the portal. He often misses deadlines for scheduling exams with accommodations because of this.

With the improved AIM Portal, Alex could set up automated recurring accommodation requests at the start of each semester. He could also use the customizable interface to set high-contrast colors, larger text, and large text spacing, reducing distractions and improving his focus when using the portal. The intuitive and streamlined design would help Alex complete necessary tasks more quickly and with fewer errors.

Case Scenario 2:

Sarah is a senior majoring in Biology who uses a screen reader due to her visual impairment. Sarah finds the current AIM Portal frustrating to navigate with her screen reader. Important information is often missed, and she frequently needs assistance from her Disability Resources coordinator to complete basic tasks like requesting accommodations or scheduling exams.

With the improved AIM Portal, Sarah could navigate the portal independently with a restructured page fully-compatible with her screen reader. Automated accommodation requests and reminders to professors could ensure that Sarah's accommodations are taken care of without the need to follow up repeatedly or ask for help from her coordinator.

1.2 Goals and Constraints

The primary goals of this project are to fully redesign the look of the AIM portal, make it much easier to use with the help of accessibility options (text size options, zoom options, text to speech options, etc), enhance the user experience for students with disabilities through customizable interfaces, and automate accommodation request processes to increase efficiency and reduce errors. Additionally, the project aims to improve portal performance, ensuring seamless access across various devices and browsers. However, the project faces several constraints. One of them is that we are still trying to get access to the universities code base that they use for the current AIM portal so that we can use it to make modifying the website much easier. Once we have access to the code and information we need, it should be doable to recreate and rehaul the entire system to make it much more accessible.

1.3 Solution Summary

Many enhancements and adjustments will be made to the website by the time it is completed. Key enhancements include customizable interface options that allow users to adjust color schemes and font sizes, ensuring compatibility with screen readers, and implementing robust keyboard navigation for users with motor impairments. Additionally, the portal will incorporate automated processes for accommodation requests and reminders, streamlining administrative tasks and minimizing errors. The redesign will adopt a responsive, mobile-friendly framework to guarantee optimal performance across all devices. Utilizing an Agile development methodology, the project will proceed through iterative cycles of design, development, and user feedback to ensure the portal meets the specific needs of TAMU's diverse student population.

1.4 Evaluation Summary

The evaluation of the enhanced AIM Portal will include both functional and usability assessments to ensure it meets all defined objectives and accessibility standards. Functional evaluation will include automated accessibility audits using tools such as Axe and manual testing with assistive technologies to verify compliance with WCAG 2.1 and ADA requirements. Usability evaluation will involve testing

sessions with students with disabilities to gather qualitative feedback and surveys to quantify user satisfaction. Key metrics for evaluation will include task completion times, error rates, and overall user satisfaction scores. Additionally, usage analytics will monitor engagement levels, and academic performance data will be analyzed to assess the portal's impact on students' academic success. This comprehensive evaluation approach will ensure that the redesigned AIM Portal effectively supports its users and fulfills the project's goals.

2 Related Work

Discussion of the related work goes here.

3 Requirements

An overview of the requirements goes here.

3.1 User Stories and Usage Scenarios

Describe your user stories and usage scenarios here.

3.2 Definition of Success

Define your measure of success here.

4 Engineering Standards, Regulations, and Considerations

4.1 Engineering Standards

Discussion of engineering standards go here.

4.2 Applicable Regulations

Discussion of applicable regulations go here.

4.3 Environmental and Health/Safety Considerations

Discussion of environmental and health/safety considerations go here.

4.4 Ethical, Social, and Political Considerations

Discussion of ethical, social, and political considerations go here.

5 Design Exploration

An overview of your design goes here.

5.1 Comparison of Potential Solutions

A discussion of potential solutions and motivation of the choices made goes here.

5.2 Lo-fi Prototyping

Your sketches, wireframes, and mock-ups go here.

5.3 Pilot Studies

Any pilot studies are described here.

5.4 Inclusion, Diversity, Equity, and Accessibility Considerations

A discussion of inclusion, diversity, equity, and accessibility considerations in your design goes here.

6 System Design

6.1 Functional Design

A functional decomposition of your design goes here (e.g., level-0, level-1, etc) including specifications and API usage.

6.2 Data Design

A discussion of how you will store, organize, and access data goes here (e.g., ER diagrams) as well as how data will flow through your system.

7 Evaluation

An overview of your evaluation plan and how it supports your definition of success goes here.

7.1 Functionality Evaluation

An overview of your functionality evaluation goes here.

7.1.1 Evaluation Procedures

A description of your evaluation procedures and setup goes here (e.g., unit testing, integration testing, acceptance testing, performance testing, example test cases, etc.).

7.1.2 Evaluation Results and Discussion

Your evaluation results and a discussion of them goes here.

7.2 Usability Evaluation

An overview of your usability evaluation goes here.

7.2.1 Evaluation Procedures

A description of your evaluation procedures and setup goes here (e.g., user recruitment, user study protocol, survey/interview questions.

7.2.2 Evaluation Results and Discussion

Your evaluation results and a discussion of them goes here.

8 Discussion

Reflection on results and discussion of insights goes here.

9 Future Work

Discussion of future opportunities goes here.

10 Conclusion

Conclusion goes here.

References

List of references goes here.

Appendix A: Project Management

A.1 Team Agreement

Team Good AIM - Jan 29th 2024

Team Goals and Objectives

- Communicate with all other team members, make sure to contribute and communicate in scrum meetings about individual progress.
- Ask questions and hold each other accountable, be curious and want to work together.
- By the end of the semester make lifelong friends and irreplaceable experiences.
- Create an amazing overhaul for the AIM portal that is a complete product able to be used for Texas A&M.
- Be sure to announce conflicts and issues (such as being late or possibly missing a deadline) as soon as possible to give other members a heads up.

Roles and Responsibilities

The team will have 3 Leads: a CI/CD lead (Simone Kang), a back-end lead (Shreyas Kumar), and a front-end lead (Aviral Agarwal).

On top of these roles, all team members are expected to contribute to the project, with technical responsibilities listed as follows:

- Make sure to change code with pull requests and not force push to main
- Sign our own commits
- Write clean, readable code
- Write tests for all of our code (Unit, Integration, End2End)
- Be familiar with the tech stack we are using
- Only commit functional code

Communication Expectations

We will communicate through i-message, with file/document sharing through either google drive or github. Team members should check the i-message group chat at least twice a day, and respond to questions or assignments from all team members. Questions asked by team members should be answered through a text message, and verification or validation questions (Y/N) should be answered with a thumbs up or thumbs down reaction. Please respond to questions within 24 hours and ideally within 12 hours.

Meeting Structure and Availability Expectations

Meetings should not be more than an hour long, and will be structured by the following:

1. Minutes 0-10: Touching Base with the team, and sharing what we have accomplished or learned within the last week, review of the team agreement document.
2. Minutes 10-30: Discussion on future steps, potential problems with current solutions, with input from every team member
3. Minutes 30-40: Q/A with team members to make sure that everybody has no questions and is on the exact same page.
4. Minutes 40-60: Extra time, in case other portions run over time or there is work to be done.

Availability should be established at least 48 hours in advance, with emergencies being accepted as a reason to not attend meetings. If there are scheduling conflicts, a message should be sent within the chat to notify others at least 48 hours before (ideally 24 hours in before).

Change Requests

Change requests for the team agreement document should be submitted in the group chat, and voted upon unanimously by all team members in order to be added into the team agreement. Lack of unanimous agreement will result in the changes being dropped or withheld.

Team Agreement Maintenance

The team agreement will be reviewed individually at the beginning of each meeting, as stated in the meeting schedule. Any discrepancies or changes should be brought to the attention of the team and reviewed, requiring a unanimous vote to remove or change the document. Team members are encouraged to read the team agreement document frequently and familiarize themselves with the document as well.

Team Member Signatures

Paul Bae

Simone Kang

Diego Lanz

Shreyas Kumar

Aviral Agarwal

A.2 Software Development Methodology

For this project, we will be using Agile Methodology. This was chosen due to unknowns within the project such as communication with the disabilities resource department, access to existing codebases, and problem discovery with current users. Agile Methodology promotes reactivity, allowing the team to easily adapt to good or bad circumstance changes. Sprints will be done biweekly, aiming to cut down uncompleted user stories by half.

A.3 Implementation Schedule

Provide the implementation schedule here.

A.4 Software Development Artifacts

Software development artifacts go here. What they are will depend on what software methodology you follow.

A.5 Budget

A summary of your budget goes here.

Appendix B: Implementation Details

A detailed description of your implementation goes here (e.g., engineer's notes).

Appendix C: User's Manual

Installation and operation instructions go here.