Group 2 RoboPaw - AEMS Coding Project Summary

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The Art Exhibition Management System (AEMS) is a system that manages art exhibitions. The main purpose of AEMS is to advertise art exhibitions and allow potential visitors to reserve tickets to attend an art exhibition. The users include the managers and the visitors. The managers create art exhibitions in the system by adding artwork to the exhibition, choosing the exhibition's timing, and editing and deleting exhibitions they have created. The visitors can look through exhibitions that have been added into the system by the managers, view the artwork in the exhibition, view the artwork through AR, view the artwork in a 3-D gallery, reserve/unreserve a ticket to attend the exhibition and look through the exhibitions signed up for in their calendar.

The domain for AEMS contains the artwork and the exhibitions. The artwork has the artist, type of art, medium used, and other related details. The exhibition has managers, visitors, ticket sales, events, and other related details.

The deliverables for AEMS contained two main components, which were the manager and the visitor. The first deliverable was on February 28th, 2025. The sole focus was on the manager's side of the application. Since it was important for art exhibitions to be on the system in the first place, the managers needed to have the ability to add exhibitions. We had an authentication system working and had two options on the main page to either create or view the exhibitions. When creating an exhibition, the manager can enter the exhibition's name, location, start/end date, and time. The manager then can add a photo of the artwork and add relevant details about the artwork. The managers can also edit/delete the exhibition they made.

The second deliverable was on April 4th, 2024. The sole focus was on the visitor's side of the application. As the exhibitions are now able to be inputted from the managers successfully, the visitors can now view the art exhibitions in the system. The same authentication system was used from the first release. We worked on the view the exhibitions page, where the visitors can browse through the different art exhibitions available either through the home page or through the search engine. The visitors can select an art exhibition and look through the artwork that will be in the exhibition by clicking on each artwork, going through a 3-D gallery that has the paintings up with some information about it, and an AR segment that can allow the visitor to see the artwork live, and reserve a ticket if interested. We added a calendar feature for the visitors to view the exhibitions they reserved for and upcoming ones.

Comparing the prototype we made and the original project design document of AEMS, the main functionality is covered by focusing on the manager and visitor components. Most of the parts are similar apart from certain features. The ticket system for us involved only reservations instead of purchasing tickets, we don't have an order management system, we added an AR segment and a 3-D walkthrough that was briefly mentioned, and we added a calendar feature that wasn't mentioned.

Our testing process included different guidelines to ensure that we covered the most important features of AEMS. The guidelines included the UI Functionality, login and signup functionality backend, exhibition creation backend, artwork upload backend, fetching an exhibition backend, editing uploaded art backend, 3D tour functionality and performance, AR functionality and performance, ease of use, and the look and style. Based on these guidelines, our tests were successful and ensured that AEMS was working fine with its various features.

Certain parts needed inspection to ensure the functionality of AEMS. These parts included user authentication, the exhibition management module, the 3D tour and AR functionality, and the user reservation system and attendance planning. The inspection procedures included functionality, correctness, performance, and maintainability. The user authentication system went well, but there could be more effort put into it. The exhibition management module went well except when editing the artworks, the user had to refresh the page to see the artworks, however, this issue was fixed later on. The artwork management module went well except for some attribute issues on having the edited information on the front page, which was resolved. The user reservation system and attendance planning went well except refunding a ticket for an exhibition led to all the tickets disappearing on the client's end.

We had some issues that weren't resolved that could be resolved in the future. Those issues included not getting the proper surface detection in AR to work on the web due to not having the necessary Android compatibility, not getting the Rich Text Editor API to work on description boxes which led to not having access to many text features, and having a robust authentication system instead of a more secure system. These issues had temporary solutions to keep the development process going, though, more ideas would work as solutions.

Some ideas that can be implemented in the future that didn't get a chance to be implemented include having reviews for art exhibitions, a payment system instead of a ticket system, a stats page that provides information to the manager about their art exhibition, a Google Maps API integration, and proper formatting on the mobile version of AEMS.

Overall, we made sure to communicate with each other frequently to ensure that the best version of AEMS can be delivered given the guidelines and time frame. We made sure to help each other out when needed with certain parts that we took upon and worked well together.