

CSE221 Web programming

Final course project

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Group_2

-AI Usage-

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1. Introduction

Artificial Intelligence tools are really popular these days in education and software development especially when it comes to web development. When we were working on this project we used Artificial Intelligence tools to help us learn and understand things better. Artificial Intelligence tools assisted us with understanding concepts they helped us improve our problem-solving skills. They even helped us make our documentation better. We made sure to use Artificial Intelligence in a way that it helped us learn than doing all the work, for us because we wanted to make sure that Artificial Intelligence enhanced our learning rather than replacing the work we had to do on our own. This report tells us how the Artificial Intelligence tools were used in the project. It tells us when the Artificial Intelligence tools were used and why the Artificial Intelligence tools were used. The report also talks about the boundaries that the team had to follow so that the project was done in a way. The team had to make sure that everyone understood what was going on with the project. The main goal of this report is to be open and honest, about how the Artificial Intelligence tools were used. The team wants to show that they used the Artificial Intelligence tools in a fair way.

2. Purpose of Using AI Tools

The main reason we used Artificial Intelligence during this project was, for support. The team used Artificial Intelligence tools to, Clarify difficult or unfamiliar web development concepts, Assist in debugging and understanding error messages, Improve code organization and readability, Help structure written documentation and reports, The Artificial Intelligence was not used to come up with solutions or final code by itself. It was like a teacher that we could look up to for help, The team was still, in charge of making decisions putting the plans into action testing everything and making sure all parts of the project were working correctly.

3. AI Usage During the Learning Phase

At the beginning of the project the team had to deal with a lot of ideas that not everyone was familiar with. The team used Artificial Intelligence tools to help explain things like:

- Semantic HTML5 elements and their purpose
- Differences between CSS Flexbox and CSS Grid
- Responsive design principles and media queries
- JavaScript event handling and DOM manipulation
- Basic PHP concepts related to form handling

The team did not copy things from places. Instead they asked the AI tools to explain things in a way that's easy to understand. They wanted the AI tools to give them examples or compare things so it is clear. This really helped the team because they did not know some things and it filled in the gaps. Now the team members can use these things in their code and they do it the right way.

This phase really helped the team feel more confident and understand things better before they actually started doing it. The teams confidence and understanding of the project got a lot better during this phase. The team felt more ready to start the implementation after going through this phase.

4. AI Usage in Code Development and Debugging

When we were making this thing we sometimes looked at what the AI tools had to say. This happened when we had problems that we could not figure out by trying different things. For example:

My JavaScript budget calculator was not working right. The values are supposed to update when I make changes. They are not updating correctly. I am having trouble with my JavaScript budget calculator because the values are not changing when they should. This is a problem, with the JavaScript budget calculator values not updating.

- Sliders exceeding total percentage limits
- CSS layout breaking on smaller screen sizes
- Unexpected behavior in form validation
- Confusion between client-side and server-side validation

In these cases the Artificial Intelligence was used to think about the problem in a way come up with possible reasons, for the problem and suggest ways to fix it. The Artificial Intelligence did not write the code that the team used in the project. Instead the team: Reviewed the suggestions, Implemented their own version of the solution, Tested the changes manually, Modified the code further when necessary

This process made sure that every single line of code that was included in the project was completely understood and written on purpose. The project had every line of code fully thought out and the people working on the project knew what every line of code was doing. The code was written with an intention and the project team made sure that every line of code was necessary.

5. AI Assistance in JavaScript Logic Understanding

The JavaScript concepts were really hard to understand at first. The AI tools were a big help. They explained things like event listeners and how functions run one after the other. The AI tools also showed us how to update the website in time. This made it easier for the team to write code that makes sense and fix mistakes. The team was able to write logic and reduce errors because of this. The JavaScript concepts, like event listeners and real-time DOM updates were easier to work with.

The team made sure they did not use Artificial Intelligence as a tool to generate code for them. They used Artificial Intelligence explanations to understand how things work. After that the team wrote their code and made adjustments so it would work well with the projects structure. They learned from Artificial Intelligence. They did the actual work themselves.

6. AI Usage in PHP and Backend Understanding

PHP was used in this project to handle the things that the server needs to do. This is because PHP is really good at dealing with what the user types in and managing the behind the scenes work. The team used PHP in this project to handle server-side functionality. Some people, on the team did not know PHP well so they used computer programs to help them learn more about how PHP works when you are making a website with PHP. The AI assistant helped us understand how PHP works with form data that users send in. When you fill out a form and click the submit button the information you entered goes to the server. Then PHP can look at this information. Do something with it. The team found out that PHP uses things called superglobal variables, like `$_POST` and `$_GET` to get the form data.

The team got help from AI to understand some things about the backend. This includes making sure the information that people enter is correct and safe which is really important for security. The team learned that they should never just take what people enter at face value and that they need to make sure the information is clean and correct before they use it.

The AI also helped the team understand the difference between the frontend and the backend. This means that the team knows to handle how things look and how people interact with the website on the client side. On the hand the backend is where the team does the hard work of processing and checking the information to make sure it is correct and this is done on the server side. The AI guidance was really helpful, in explaining these backend concepts like input validation and data sanitization which're essential for security.

The team wrote all the PHP scripts that were used in the project. They tested these PHP scripts. Made changes to them by hand. The team looked at suggestions, from intelligence very carefully and used them only to help guide them not as the final answer. This way the PHP scripts that controlled the backend of the project stayed easy to understand, safe. The team knew exactly how the PHP scripts worked.

As a result, the backend implementation is easy to maintain and ready for future enhancements, such as database integration or additional server-side features. The use of AI helped improve understanding and best practices while keeping full control of the development process within the team.

7. Maintaining Academic Integrity

Throughout the project they made sure to follow the rules so that the Artificial Intelligence was used in a way ,we did not use Artificial Intelligence to generate the project code. The project code was written from scratch. Artificial Intelligence was not used to create the project code,The people in charge did not use intelligence when they were checking or testing things. They did all the assessments and evaluations on their own without any help, from intelligence.

I went through all the suggestions that the artificial intelligence system came up with. I looked at each one carefully to see if it was any good. The artificial intelligence suggestions were checked to make sure they made sense.

The team made sure they could explain all the solutions they put in place. They wanted to be able to tell people about all the implemented solutions. This way the team could explain the implemented solutions to anyone who asked.

The project was worked on by the team together. Every member of the team helped with the code. The team used Artificial Intelligence tools to help them of, like websites that have information or tutorials that teach you things. The Artificial Intelligence tools were really there to assist the team like when you look at a website to learn something new or watch a tutorial to figure out how to do something.

This way of doing things is in line with the rules that schools have about being honest in your work. These rules say it is okay to use intelligence to help you learn but you cannot rely on it too much or copy someone elses work. The rules are there to make sure

people do their work and give credit to the artificial intelligence tools like artificial intelligence, for helping them learn.

9. Benefits of Responsible AI Use

Using AI responsibly provided several benefits:

- Faster understanding of complex concepts
- Improved debugging efficiency
- Better structured and clearer documentation
- Increased confidence in technical decision-making

The artificial intelligence really helped the team, with the development process. It made the team learn things effectively. The artificial intelligence also helped the team avoid mistakes that people usually make. This made the development process a lot smoother. The team still had to think and work together though. The artificial intelligence did not replace the need for the team to think critically and work as a team. The development process was smoother because the artificial intelligence helped the team learn and avoid mistakes.
