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# Report Team 12

In this report, we will detail how we approached the task to make a grid based game in C# for the first assignment in this course. We will also mention the problems that we faced with the group project and what solutions we found to solve those issues or to work around them in some cases.

We decided to implement the game Battleships, as it was one of our favourite games and would be an interesting challenge to implement. The game also offers many options to extend it, for example to have a ‘smarter’ computer player to compete against or to change certain properties of the game, for example the grid size or the amount of ships on the board.

At the start of working on the game, we already faced a great challenge when trying to work with Visual Studio, as we had very little experience with the program and had to learn about many functions ourselves.

Many issues we encountered had to do with Visual Studio itself, for example renaming objects and classes and switching between the visual form and our written code. Because of this we decided to mostly create elements on our forms ourselves without the form designer.

While working on the game we had to solve multiple issues that had to do with the game recognizing when a ship had been hit and especially when it was sunk. Often the program would not recognize one of the ships had been sunk and consequently the game would not end when a user had won.

It also proved to be quite difficult to implement the functionality to rotate the ships while placing them in the beginning of the game. We were hoping we could do this with a double click on the ship, but in the end, we had to include an extra button that rotates the ships when clicked.

Other issues, we had to find solutions to, were related to GitHub, which we used to share the code between all team members. We would have issues merging our branches together with the binary files that were automatically created be Visual Studio for our project, so we had to include a .gitignore file and a .gitattributes file to work around this.

Additionally, we encountered another problem towards the end of our project, when we wanted to improve the design of the game. Whenever we wanted to add a picture to the background for example, we received a message from the program, telling us that our access to the resources of the project was denied and the pictures would not display. To solve this issue, we had to add panels to the game, and then add the pictures to those panels.

For future upgrades to the project we would implement an option for 2 players to play against each other on separate devices. Battleships requires two players competing against each other and not being able to see the opponents board. This wasn’t possible as we didn’t know how to get the program to function over a network on multiple devices. We would also include background music and more graphics to improve the game experience.

In conclusion, as a team we worked together well and managed to organise and implement the work in advance. We also met multiple times as a team to solve problems and finish the individual tasks on time. Although the assignment provided many challenges, we managed to implement a working Battleships game in Visual Studio, with many extensions.

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