# Contribution

The project could be divided into three main phases. The first phase was the orientation in the literature concerning deep reinforcement learning and applying it to a game environment. Everyone had to read several literature articles and needed to have a basic understanding of the different methods, such that everyone could implement the different methods into neural networks or reinforcement learning methods. The second phase was exploring the possibilities of deep reinforcement methods in specific environments. Jeffrey and Jordi focused on experimenting with the simple environments of OpenAI gym such as the Pendulum and CartPole. Roel focused on trying to create an Atari environment that could be used for the final experiments of the project. Sadly, due to memory leaks during the execution of the script it was impossible to run an Atari environment. This meant that the simple environments, that Jeffrey and Jordi experimented with, needed to be used. The last phase was creating a project around these simple environments.

The contributions for the last phase were as followed. Roel focused on the theoretical and methodical aspect of the report. Jordi looked at a possible experiment that could be performed on the CartPole and Pendulum environment. Afterwards the different architectures and parameter tuning was also performed by Jordi. Jeffrey focused on the creating and maintaining a repo for all the progress and Jeffrey worked on the approach of the project. Because of the first meeting with Elena, a status report needed to be hand in each week. Jordi did the communication and creation of the status report.

## Self-evaluation

In the last section of this report, each of the project members will do a self-evaluation of their own performance in this project. Afterwards points of improvement will be mentioned from the members themselves for the next project.

* + 1. Self-evaluation Jeffrey
    2. Self-evaluation Roel
    3. Self-evaluation Jordi

Overall, I am not satisfied with how this project went with both my own input as the others. Because of my own indecisiveness, we suffered from time constraints at the last minute. Which resulted in my opinion in an incomplete project. Personally, I should have cut the knot earlier with the project so that the entire experiment process could have started earlier and not two days before the deadline. The biggest problem during this entire process was my own procrastination concerning the direction of the project. The original objective was to get a Doom environment working and try to create a neural network that was able to mimic human input. After three weeks of testing to get the environment to work, to no avail, we shifted to Atari. However, after another two weeks this also did not reach anything. Therefore, in a span of a couple of days the entire project needed to be built from the ground-up. This conflicted with people having other appointments and not having the time to clarify the tasks of each person. As a result, this led to people following their own vision of the project. This resulted in a lot of loss of time at the end of the project, which could have been better spend on fine-tuning the report.

An example of this was the literature review and experiment section. These were not finished in sequential order. This meant that the experiment section was finished before the literature review. As a result, the experiment section, a segment that costed me an entire three days to finish, was considered majorly flawed. As a result, this had a negative effect on the motivation on the entire team and led to fixing the experiment section at the last minute. In short, I was indecisive and did not show the initiative to lead the team into finishing this project on time and prevent spending a lot of time on environments that did not show any chance of working after one week. If I could redo this project, I would have focused on something simple and worked this out completely and in the finest details from day one with the team. Afterwards everyone would have the same vision of the project and it would be finished on time. This could have resulted in a more finished project.

My points to work on is showing initiative in the first week, steering the project in the right direction from day one, and not focusing completely on orientation. The second point to work on is showing interest in what people are doing as to get a better idea of what people are specifically doing and why they are doing it. This could result in a better understanding of the project and could help in improving the report.