Project Assignment Report

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The approach for this assignment was rather simple. First we discussed the matter thoroughly and we decided on a particular design we then planned to implement. During the design phase we had several meetings until we came up with the final design we would want to implement. After the design was finalized we discussed on how we want to divide up the workload so it would be fair for everyone involved. The simplest solution for us, since we were only 2 participants, was to divide up the work so that one person would work on even dates and the other on uneven dates. We also set a certain style of coding, a mixture of our own styles with certain syntax guidelines.

During the implementation phase we firstly followed our design, which was very linear since we opted into following the steps on the assignment document and we wanted to implement a stack based FSM for the units and give each unit their own AI. Later it became clear that this was not a good approach for our goal. So we ditched the individual stack based FSM implementation and opted for a simpler manager AI. The manager AI controls a group of units. We also changed our strategy for the Game AI that controls the flow of the game, it is still fairly linear but we optimized it so that if possible multiple build events can be executed. This results in a faster game flow and it feels more dynamic. The Game AI basically controls how the resources should be spent at a certain point of the game and spending resources on something usually triggers a state change.

The Game AI can still get stuck under certain circumstances, when for example it is waiting for a build event to be executed but the the build event was ditched by the Worker Manager AI. This is a very annoying bug which we had a hard time resolving. We did the best we could and it works most of the times now.

The testing phase was probably the most annoying phase because of the sometimes very aggressive behaviour of our enemy, especially the Zerg race. To even be able to execute a whole test run we had to make use of Starcraft cheats. The cheat code

‘power overwhelming’ makes our units invincible and ‘black sheep wall’ reveals the whole map so we can from the start get the location of the enemy base. We don’t like having to use these cheats but to be honest we simply didn’t had enough time to work on a more advanced AI. For example we wouldn’t had to use ‘black sheep wall’ if we implemented a scout AI that is searching for the enemy base, and we wouldn’t had to use ‘power overwhelming’ if we had a faster building approach that focuses more on the defence rather than technological advancements.

If you would like a more in-depth view on what we had done each working day just visit our projects github. We logged every work day so we would know who did what.
https://github.com/maxtla/AIProject