Team Jeneception Strategy Report

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The core of our strategy is a “rage” based approach that attempted to build up a large clump of tanks and have swarm and exterminate any enemy in sight with extreme prejudice. The largely underutilized global behavior for all units was done using a distributed grid of 5x5 map cells so that the 25 corresponding map locations could be represented as bits of a single integer value. Pathfinding was done by identifying the distinct connected components of each 5x5 square and placing them in a linked list; these components would then flood-fill their values outwards. If a target was in a particular component, its value would be eg. 1000; accessible components in adjacent squares would then have 999, then 998, and so on. In this way, global pathfinding could occur by attempting to ascend the global grid towards the maximum value. Every unit would use its spare bytecodes to calculate the next set of updated grid cells in a distributed fashion, since the calculation of each new grid value can be done globally.

There were different grids for the following targets: good ore locations, offensive (enemy towers and HQ), defensive (our HQ), and the “leader”. The leader was appointed by offensive units and distant units would move towards the leader; the leader would set a target and units close to the target would move in that direction and shoot. Any units that saw a target of higher priority would become the leader and set the global target, to call for reinforcements. The only unit strength-based decision was based on only stepping into attack range of any unit if two other units can also step into attack range, and a certain threshold of friend vs. enemy strengths for attempting to take down a tower. Units would move towards towers until there were fewer than two towers remaining, at which point they would target the HQ.

Miners had their own logic of chasing locally desirable ore; failing that, they would attempt to use grid pathfinding to find better ore locations. They also had their own list of targets which they would check to determine attack viability; if they decided that they had locally amassed enough forces to target an enemy, they would engage, otherwise, they would retreat. This provided an effective counter to enemy harass behavior.