**Heuristics Analysis**

For the Isolation Game Agent Project I used more than three different heuristics. I mark with an asterisk (\*) the one I decided to choose:

**H1:** X2 Weighted Score: own\_moves – (2 \* opponent\_moves)

**H2\*:** X4 Weighted Score: own\_moves – (4 \* opponent\_moves)

**H3:** Center Score: Distance to the center of the board using the formula sqrt(x^2 + y^2) found at <http://math.stackexchange.com/questions/619694/find-the-distance-to-the-centre-of-the-grid>

**H4:** Proportion Score.

All heuristics were tested using two different computers:

**PC1:** Linux Ubuntu 64-Bit. 16 GB RAM. Core i7 Processor.

**PC2:** Linux Ubuntu 64-Bit. 16 GB RAM. Core i5 Processor.

**Chosen Heuristic**

For my implementation I used H2. The results with this heuristic were better than the ones with H1. Other heuristics worked and gave better results than the ID\_Improved agent, however they were not as good as H2.

**Heuristic Testing**

**H1: X2 Weighted Score**

For this heuristic I used the following formula:

**own\_moves – (2 \* opponent\_moves)**

The overall performance was good, but I stated to notice some cases where my agent did not performed well and even loose against the ID\_Improved agent. This looses were very rare though.

**Results:**

**PC 1:**

**PC2:**

**H2\*: X4 Weighted Score**

For this heuristic I used the following formula:

**own\_moves – (4 \* opponent\_moves)**

After using the H1 heuristic I decided to start increasing the weight constant. I tweaked the values until I found a point where the weight was giving me sufficiently good results. Too high values performed badly. Anything below 2 was not good enough. The final desition was to set te weight with a value of 4.

In comparison with H1, H2 offered much better performance. I also thought this could be a good way to approach the Horizon Effect problem in a more aggressive fashion.

**Results:**

**PC 1:**

**PC2:**