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## Report

### Q1)

For returning the score, I have used foodDistance as the most important score. I have subtracted the value since it is bad to get a bigger food distance. Then I have added ghostDistance and food\_eaten scores which are good since getting away from the ghost is positive as well as eating the food.

I have listed capsules with foods together. I didn't see any importance to separate them. If pacman eats a capsule than it chases the ghost at most importance. My implementation checks if the ghost is worthy of chasing if not it continues to eat foods or capsules. If the pacman is not in scaredTimes, then it runs away from the ghosts if the ghost is next to it.

The code returns inf if the all the foods are eaten.

Yes, it is good idea since not all the values effect the score positively such as the food distance.

### Q2)

Alpha-Beta run faster compared to Minimax. The reason is that, in minimax more calculations are done since alpha-beta checks more nodes every turn.

### Q3)

Yes, they did. The reason is that they do very similar calculations where alpha-beta does less since it checks best cases.

### Q4)

It did the same movements, but the runtime was worse than alpha-beta and similar to minimax. The reason it basically did very similar calculations to minimax.

### Q5)

In my implementation I used the same elements that I used in the first implementation with slight difference and weight calculations. For ghost tracking I was not able to use successor status, so I needed to use the current status. This affected me as I couldn't compare the current and next distance of the ghost to pacman so I needed to change the ghost weight as it goes into scareTime mode.

For food and capsules, I have separated them and gave different weights as the food is more important than the capsules in most cases. I have added some condition checkers to change the weights of the food, capsule, and ghost. As the ghost goes into scareTime mode, the weight for ghost changes to -10 and capsule weight decreases to 0 and the food decreases a little to 7.

### Q6)

For choosing the weights, I have thought that prioritizing the food is more important than eating the capsule or escaping from the ghost if it is not in the at most close case. The second important thing was to eat ghost in scareTime mode since it gives points and getting high points is the most important think in pacman games. The third and last importance was the eating capsule and it only made sense if the capsule and the ghost was near to the pacman.