CSE537 Artificial Intelligence	October 15, 2014

Project 2 report

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1   Statistics and Implementation

Q 1 :

Q2:

MAX player is Pacman and MIN player is all the ghosts. The standard Minimax algorithm has been used to implement the Minimax agent. In the min player turn by the ghosts, possible actions of all ghosts at the same depth were considered before moving on to next level.

Depth	Search nodes expanded
1	33
2	211
3	1160
4	5916
5	24890

Q3: Minimax algorithm has been modified to include alpha and beta values and hence the search tree was pruned.

Depth	Search nodes expanded
1	19
2	179
3	886
4	4463
5	18625

2   Critical Analysis

The following observations and inferences can be made from the statistics.
1.We can observe from the statistics that Alpha beta pruning has drastically reduced the number of search nodes as compared to Minimax algorithm at various depths. The reduction varies almost exponentially with respect to depth.