# Games Dev Exam Q5 2015-2016

Q5. (a) (i) To control a non-player character.

(ii) Sensing Stage: Is when the AI is when its roaming, patrolling or inactive and waiting for a player character.

Monster\_Transitions sense\_surroundings()

{

if (theManagerAsksToRoam()) return Monster\_Transitions.Go\_Roaming;

if (IcanSeePlayer()) return Monster\_Transitions.See\_Player;

if (IamnextToPlayer()) return Monster\_Transitions.Catch\_player;

return Monster\_Transitions.None;

}

private bool IamnextToPlayer()

{

throw new NotImplementedException();

}

private bool IcanSeePlayer()

{

throw new NotImplementedException();

}

private bool theManagerAsksToRoam()

{

throw new NotImplementedException();

}

Thinking Stage: Is when the AI is when the player character is within radius and is deciding if it wants to chase.

Monster\_State next\_State(Monster\_State current\_State, Monster\_Transitions transition )

{

switch(current\_State)

{

case Monster\_State.Inactive:

switch (transition)

{

case Monster\_Transitions.Catch\_player:

return Monster\_State.Attacking;

case Monster\_Transitions.See\_Player:

return Monster\_State.Chasing;

case Monster\_Transitions.Go\_Roaming:

return Monster\_State.Roaming;

}

return Monster\_State.Roaming;

break;

case Monster\_State.Roaming:

switch(transition)

{

case Monster\_Transitions.Catch\_player:

return Monster\_State.Attacking;

case Monster\_Transitions.See\_Player:

return Monster\_State.Chasing;

}

return Monster\_State.Roaming;

case Monster\_State.Chasing:

break;

case Monster\_State.Attacking

break;

}

}

Action Stage: Is when the AI is ready to attack.

void implement(Monster\_State current\_State)

{

switch (current\_State)

{

case Monster\_State.Inactive:

// Do nothing

break;

case Monster\_State.Roaming:

//Choose random direction

// Move character in that direction

break;

case Monster\_State.Chasing:

// Move monster towards Character

break;

case Monster\_State.Attacking:

// Hit Character

break;

}

}

}

(iii) It Is easy to implement but the AI is quite stupid.

(b) (i) The behaviour/actions of the AI are unpredictable. It will always pick the best option.

(ii) A utility function assigns value so it will give you a good and a bad outcome.

(iii) An evaluation is function is to estimate if the moves it makes is good or bad.

(iv) There are far too many possibilities in chess and draughts compared to tic tac toe. Perfomance can be improved cutting branches.

(v) -1, 3/5, 4/8, 2/2, 8/-5, -2/6, 2/9, -8

3, 5/8, 8, -2/6, 9

3, -2, 6

6.