**Game.py:**

**Class SnakeGameAI:**

Function reset ():

* Reset the game.

Function place\_food ():

* Place food in a random place, and if this place is in the range of the snake then it will choose another random numbers.

Function play\_step ():

* Check if the user quit the game
* Make the move that the agent did
* If this move didn’t lead to a collision, then it continues to place a new food.

Function is\_collision ():

* Check if there is collision, if the snake exceeds the limits of width or height then there is a collision.
* If the snake reached a point, and this point is in its range, then there is a collision.

Function update\_ui ():

* It updates the shape of the snake.

Function move ():

* It takes the action and it move the snake accordingly

**Agent.py:**

**Class Agent:**

Function get\_state (Self, game):

* Stores 11 values [danger straight, danger right, danger left,

Direction left, direction right,

Direction up, direction down,

Food left, food right,

Food up, food down]

* Returns array

Function remember (Self, state, action, reward, next\_state, done):

* Save all the data (1 tuple)

Function train\_long\_memory (self):

* If there is samples in the memory more than the batch size then it will get a random list of tuples (1 tuple) from the memory.
* Else we take all the samples in then memory
* Then train 1 or more state.

Function train\_short\_memory (self, state, action, reward, next\_state, done):

* It takes 1 states and train it.

Function def get\_action (self, state):

* There is a variable called epsilon, and variable called final\_move that will be filled later on
* If a random number is less than the variable epsilon then a random index will be chosen (0, 1, 2) and the final\_move(index) will be equal to 1.
* Else we use torch to get random float numbers, and the index of the maximum number will be filled in a variable called move, then final\_move(index) will be equal to 1.

Function train ():

* List to keep track for the score (plot\_scores)
* List to keep the value of the mean of the scores
* Total score variable will be equal to 0 at beginning
* Variable for the best score called record
* Set up an agent
* Set up the snake game

