ML project 3

TASK

The goal of the assignment is to learn the trends in stock price and perform a series of trades over a period of time and end with a profit. In each trade you can either buy/sell/hold. You will start with an investment capital of $100,000 and your performance is measured as a percentage of the return on investment.

Python editor

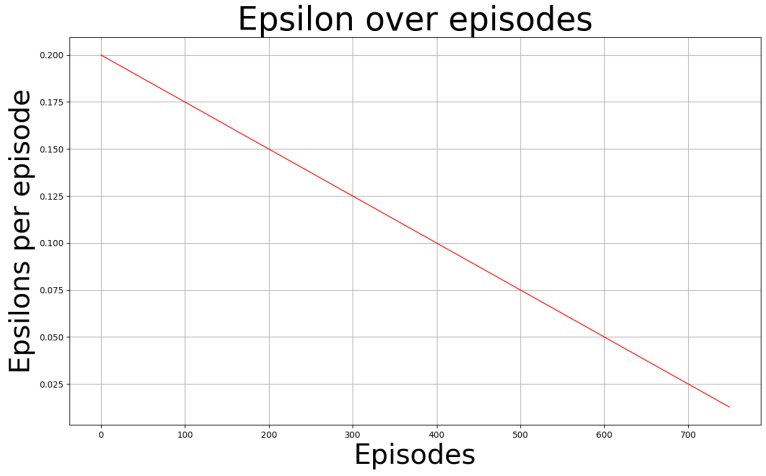
I have used VS code IDE for implementation

Q learning algorithm

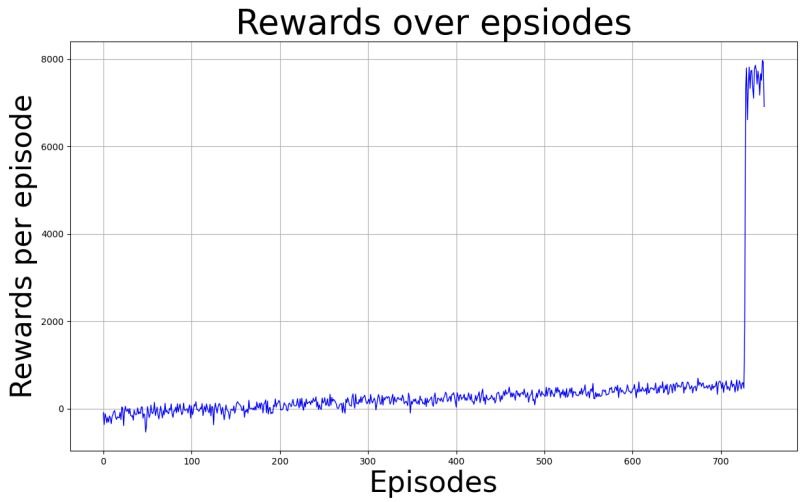
Initial a Q table of dimensions (state,actions)
Initiate an epsilon value of 0.2
Start an episode with the state initialization from environment reset
In each episode update the q table and new value
old_value + learning_rate*(reward + (discount*next_max) - old_value)
Store reward in a variable

Results

From the graph below you can see that the epsilon value across episodes is decreasing at a constant rate



The rewards across episodes is gradually increasing i.e inversely proportional to the epsilon val



The total rewards are averagely increasing and in the ending crossing 140k