

R(ea)L Trader SoC 2021

Checkpoint 1 Report

It has been almost 2 weeks since the start of SoC 2021 and our group has made some progress in this time. A WhatsApp group was created by our mentors for inter team communications. They gave us a couple of jobs to do in this time period.

First we were asked to learn Python language and a few modules in it like Numpy and Matplotlib. A couple of tutorial site links were sent on the group for us to learn the basic syntax in Python (we learnt the basic concepts of coding in CS101 itself so..). I learnt python watching a couple of video tutorials on YouTube from freecodecamp.org and practiced some code on PyCharm just to get a hang of the syntax. Then I went through the Numpy tutorial links sent on the group to gain understanding over the basic use cases and syntax while using the Numpy.

Tutorials I referred to:

- <https://www.geeksforgeeks.org/python-programming-language/?ref=ghm>
- <https://www.youtube.com/watch?v=GB9ByFAIAH4>
- <https://www.youtube.com/watch?v=rfscVS0vtbw>
- <https://www.udemy.com/course/ardit-sulce-python-for-beginners/learn/lecture/15857454#notes>

Then, we were sent a link to read and learn about the Markov Decision Process or the MDP, the mathematical formulation in which the agent/machine we train is trained to make decisions based on the Environment and the state of the system. The article covered a quite in-depth description of the Markov-Decision Process, The Bellman Equations (Optimality and Expectation equations) and about implementation of MDP using Dynamic Programming. A lot of mathematical equations and technicalities were present in the article which was interesting and quite exhausting to learn about.

Article Link:

- <https://towardsdatascience.com/introduction-to-reinforcement-learning-markov-decision-process-44c533ebf8da>

We were also encouraged to study about finance and the share market in order to understand various trading strategies which we would implement while deploying our agent in for market trails. I studied about technical analysis and fundamental analysis in Varsity by Zerodha which has wonderful resources for studying about the financial markets. I also opened my Demat trading account in Zerodha and invested about 25K into the Indian share markets. I learned quite a lot about how trading takes place and how to find multibaggers and companies with strong fundamentals based on the yearly reports of various companies as well as several other financial indicators such as PEG, PE, EPS etc; I also attended a trading workshop conducted by Mr. Ravi Padmanabhan to gain a much in depth understanding about wealth creation through stock markets.

Links:

- <https://zerodha.com/varsity/>

I also learnt quite some bit about machine learning and other basic ML algorithms through the ML course offered by Stanford University in Coursera with the famous Prof. Andrew N.G as the instructor. I completed nearly 3 weeks in the course still have a long way to go. I also enrolled in a course to learn writing documents in LaTeX offered by our Institute in edx. So hopefully, next time I am submitting my checkpoint report it will be an awesomely formatted and neat document unlike this one. 😊

Courses Links:

- <https://www.coursera.org/learn/machine-learning/home/welcome>
- <https://learning.edx.org/course/course-v1:ITBombayX+LaTeX101x+1T2021/home>