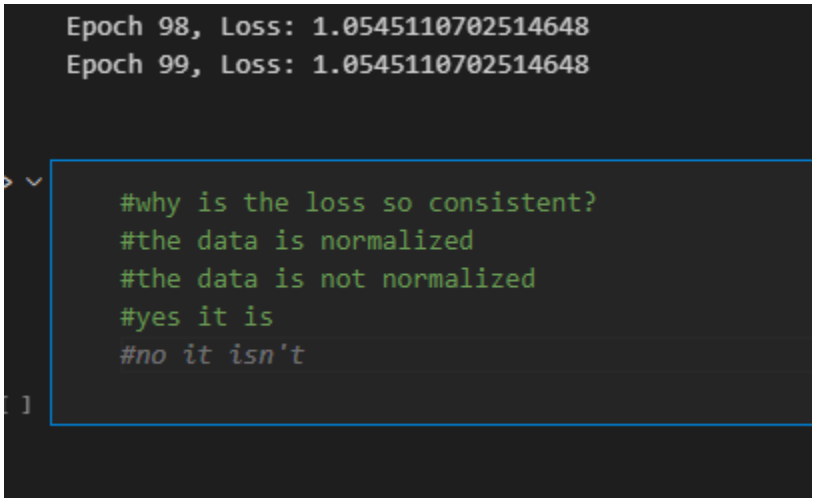
Part 1 – Professionalism

- What is Github CoPilot
    - Copilot is a code suggestion took developed by Github in collaboration with OpenAI. It is intended to be used as a tool to help developers write code quicker by providing suggestions for what it thinks you are going to do. They also now have this for most Microsoft apps in the form of Office Copilot
- What algorithms does it use
    - Copilot uses a combination of NLP and Deep Learning Algorithms, the most widely known being GPT3.
- Where did its training data come from
    - Copilot, like GPT3 was trained on a massive amount of code from public github repositories. It is also trained on code language documentation.
- How was it used in this project
    - In this project, I used github copilot to help me write functions, and I tried to use it to debug as well.
        - To get it to write functions, I would first write a comment in the line above where I wanted the code describing what I wanted (ex. #Help me write the structure of an NN), and on the next line, it will try to suggest the correct code to do what you asked. It is then as simple as pressing tab.
        - I tried to use it for debugging in a similar way, where I would write a question (Ex: #Why is the losson this so consistent"), and then it would do its best to try to answer it but I don't think it can really do that.
    - 

- Part 2 – Project Identification
    - I chose to use Acrobot, MountainCar, PoleCart, and Taxi to test the learners. I decided to take this route because AcroBot, MountainCar, and PoleCart are all games that rely on phusics in some way, and teaching the algorithms how to work around those physics. Taxi was chosen so they aren't all just physics based
- Part 3 – Algorithm Implementation

Algorithm	Where from	Game	Performance 512 Episodes	P(1024)	P(2048	P(4096)

DQN	Tensorflow/ Keras	CartPole	Avg: 21.5 Max: 93	Avg: 22.5 Max: 94	Avg: 22.5 Max: 121	Avg: 22.4 Max: 118
Approx Q	Handwritten	CartPole	Avg: 32.84 Max: 163	Avg: 30.18 Max: 120		
Q Learner	Handwritten	CartPole				