Explore an OpenAI Gym Environment

Hi AIML2023, here is a task to work upon In the coming RL Lab class. I have recorded the following **video** explaining the OpenAI gym framework:<https://youtu.be/XcNNQFhEcjk?si=rOlUmB4m8ec2BIdI>

**code**:<https://colab.research.google.com/drive/1wDqfyrSfUzhfrMnGCGqMZl4KKoUydQ8m?usp=sharing>

You can work on this task in groups of 2 or 3.

After watching the video, **select a** [**gym environment**](https://colab.research.google.com/corgiredirector?site=https%3A%2F%2Fwww.gymlibrary.dev%2Findex.html) and understand the environment's states, actions and rewards by going through the Openai Gym's [documentation](https://colab.research.google.com/corgiredirector?site=https%3A%2F%2Fwww.gymlibrary.dev%2Fcontent%2Fbasic_usage%2F%23) and [github codes](https://github.com/openai/gym/tree/master/gym/envs).

* Explain in your own words what the env is about and what needs to be achieved. Give a one liner explaining what the observation space and action space is for the selected environment.
* Import the environment and make the agent take "random actions". Print the total reward the agent received at the end of an episode.
* Calculate the average total reward by simulating multiple episodes. (1000 or more episodes)
* Try modifying the actions to maximise the total reward. If the chosen environment is complex to hardcode the actions, you can just explain in your own words.

You need to submit the colab notebooks individually.

Due date: 10th Feb, 2024

Submission link: <https://learnermanipal-my.sharepoint.com/:f:/g/personal/sudarsan_acharya_manipal_edu/Eg9jqZzCjzpIhScHfW1BJXMBtxFF-G6bbqdQ_vP2mYFv7g>