Defining Reinforcement learning

But first what is machine learning?
Machine => Non living entity {***An Agent***}
Learning => Getting better at a well defined task through a process

There are three major aspects/process for ML:

1. Supervised
2. Unsupervised
3. Reinforcement

Rationale of the course:

1. Introduction to reinforcement learning.
2. Closely similar to how humans and animals learn

We will be using PYTHON language.....Yayyyyy.

Framework => Open AI gymnasium

Dynamic Programming: Method for optimization, need to check it out

Actual Lecture:

ML: Learning data to improve the performance of an agent.

Data can be any information received from environment. This could be text, numbers, or environment

RL: An agent performs a certain task repeatedly. And, there is a reward system in place.

Good behavior => is reinforced Bad Behavior => Rejected

Remember Pavlov's experiment on classical conditioning

Exploration and exploitation dilemma

1. Exploration: Doing the same thing that works
2. Checking out the unknown

State:

Representation of the environment

Agent performs an action -> the state changes - > the environment detects the change and then produces a reward signal