**Reinforcement Learning**

* Reinforcement learning is a powerful branch of machine learning based on rewarding desired behaviors and/or punishing undesired ones.
* In general, a reinforcement learning agent can perceive and interpret its environment, take actions, and learn through trial and error.
* This method assigns positive values to the desired outcomes to encourage the agent and negative values to undesired actions.
* This programs to agent to seek long-term and maximum overall reward to achieve an optimal solution.
* These long-term goals prevent the agent from stalling on lesser goals.
* With time, the agent learns to avoid negative and seek the positive.
* This learning method has been adopted in AI as a way of directing unsupervised machine learning through rewards and penalties.
* It is used to solve interacting problems where the data observed up to time t is considered to decide which action to take for time t+1.
* It is also used for AI when training machines to perform tasks such as walking.
* We will be looking at two Reinforcement Learning Models:

1. Upper Confidence Bound (UCB)
2. Thompson Sampling