Understanding PEAS For Racing Car

Agent: An agent is anything that can be viewed as:perceiving its environment through sensors and acting upon that environment through actuators.

PEAS stands for a Performance measure, Environment, Actuator, Sensor

Performance Measure: Performance measure is the unit to define the success of an agent. Performance varies with agents based on their different precepts.

- **Environment**: Environment is the surrounding of an agent at every instant. It keeps changing with time if the agent is set in motion. There are 5 major types of environments:

  - Fully Observable & Partially Observable
  - Episodic & Sequential
  - Static & Dynamic
  - Discrete & Continuous
  - Deterministic & Stochastic

- **Actuator**: An actuator is a part of the agent that delivers the output of action to the environment.

- **Sensor**: Sensors are the receptive parts of an agent that takes in the input for the agent.

PEAS OF Racing Car

- **Performance:** Safety, time, legal drive, comfort.
- **Environment:** Roads, other cars, pedestrians, road signs.
- **Actuators:** Steering, accelerator, brake, signal, horn
- **Sensors :** Camera, sonar, GPS, Speedometer, odometer, ac□celerometer, engine sensors

  Partially ovserbale, Multi Agents, Stochastic, Dynamic, Continuous

Rules For Racing Car

Due to the nonlinear relationship between the input and output vectors, the steering and braking output levels of the car could not be determined solely from the calculated output vector in the waypoints system. It was necessary for the system to also employ a conditional monitoring system that can further refine the steering and braking output levels applied to the car. In other words, depending on the values of the initial calculated output vector produced from the waypoint system's vector calculations, the steering and braking output levels applied to the car are adjusted by the conditional monitoring system. When the foundational waypoint system was enhanced with the conditional monitoring system, the car was able to traverse the track with satisfactory results.Instead of adding the conditional monitoring system, the alternative design of deriving and incorporating a nonlinear mathematical function into the system was also considered. Since this may require complex mathematical manipulations or modeling of the mathematical function using techniques like artificial neural networks, this alternative was abandoned.