

Question1. Lithionpower is the largest provider of electric vehicle (e-vehicle) batteries. It provides battery on a rental model to e-vehicle drivers. Drivers rent battery typically for a day and then replace it with a charged battery from the company. Lithionpower has a variable pricing model based on driver's driving history. As the life of a battery depends on factors such as over speeding, distance driven per day etc. You as a ML expert have to create a cluster model based upon KNN, where drivers can be grouped together based on the driving data.

Drivers will be incentivized based on the cluster, so grouping has to be accurate.

- id: Unique Id of the driver
- mean_dist_day: Mean distance driven by driver per day
- mean_over_speed_perc: Mean percentage of time a driver was > 5 mph over the speed limit
- Increase in profits, up to 15-20% as drivers with poor history will be charged more.

Question2. Design a knowledge-base expert system using prolog that aims to provide the patients with medical advice and basic knowledge on various diseases. It should consider various symptoms and signs like chest pain, cough, fainting, fatigue, headache, back pain, sunken eyes, low body temperature, restlessness, sore throat, fever etc. along with its severity status and provide the patients with medical advice. Design your own facts and rules.