

- 1.) Make distinctions of the five primary questions that data mining asks in solving problems.

### →How much? Or How many?

- ◆ This question is answered by numerical values.
- ◆ An example is during this COVID-19 pandemic how many people are allowed to go outside? Suppose to be only healthcare works are permitted to travel.
- ◆ Another example is housing values in Antipolo. Basically the goal is to compute a model of the housing values, which can be used to predict the price in the house area.
- ◆ Method for prediction is regression
- ◆ **Model : Response = f(Variables)**

### →Is it type A or type B?

- ◆ This question is only be answered by 1 or 0.
- ◆ An example, are you happy or sad?
- ◆ **Model : P (Class) = f(Variables)**

### →How is this organized?

- ◆ This question is answered by grouping.
- ◆ An example is customer segmentation in business. Where dividing into groups that share common characteristics.
- ◆ K-means clustering
- ◆ Hierarchal clustering

### →Is it weird behavior?

- ◆ This question is answered by behavior.
- ◆ An example is you want to monitor the traffic on your website, base on your previous year of data, it will create a prediction if you're anticipating a number of sessions on a specific date range.
- ◆ Cluster Analysis-based Detection
- ◆ Nearest Neighbour Detection Model
- ◆ Support Vector Machine Detection

### →What should we done next?

- ◆ This question is answered by adaptation.

- ◆ An example is a web configuration system where the goal is to do auto-configuration in multi-tier systems.
- ◆ Monte Carlo
- ◆ State-Action-Reward
- ◆ Q-Learning
- ◆ Deep Reinforcement

2.) Craft a data mining question.

### →How much? Or How many?

- ◆ Given the types of lockdown (ECQ, MECQ, GCQ) in Metro Manila, how much is the revenue of the government?

### →Is it type A or type B?

- ◆ Given the details of images on web pages predict whether an image is an advertisement or not?

### →How is this organized?

- ◆ How can a telephone company establish a network by putting tower in a particular region it has acquired?

### →Is it weird behavior?

- ◆ For example in manufacturing how can you detect the behavior of an abnormal machine to prevent cost overruns?

### →What should we do next?

- ◆ How can reinforcement learning help traffic light to solve congestion problem?