In [1]:
```
#machine learning invloves making mathematical models which helps us understand data
```

In [2]:
```
#two broad classification of machine learning
#Supervised learing-modelling data with some labels for them and then assigning labels to new unknown data
#Unsupervised learning-modelling data without any labels
#there are also semi supervised models which fall between both of the categories
```

In [3]:
```
#supervised learning
#--->classification model
#--->regression model
```

In [4]:
```
#classification models are used for predicting discrete labels
#some examples of classification models are Gaussian naive Bayes,Support vector machines and random forest classification
```

In [5]:
```
#regression models are used for predicting continous labels
#some examples of regression models are linear models and random forest regression
```

In [6]:
```
#unsupervised learning
#--->clustering
#--->dimensionality reduction
```

In [7]:
```
#clustering model will group data assign labels to the categorised data
#some examples of clustering are k means clustering ,Guassian mixture models and spectral clustering
```

In [8]:
```
#dimensionality reduction,Labels and other information are extracted from structure of dataset itself
#some examples of dimensionality reduction algorithms are principal component analysis and manifold learning algorithms
```