(1) Naive Bayes is a probabilistic classifier based on Bayes' Theorem, which calculates the probability of a class given a set of features such as words in text classification. The naive assumption is that features are conditionally independent given the class label. In text classification, P(x|y) is calculated as the product of probabilities of each word in the text given the class.

(3/6) Generative models learn the joint probability P(x,y) and can generate new data. Discriminative models learn the conditional probability P(y|x) and focus on classifying data.

(7) Logistic Regression is a dricriminative model that learn the conditional probability P(y|x) using a sigmoid function. It is suitable for multiclass classification because it can be extended using One-vs-Rest or Softmax Regression.

(10) Naive Bayes is faster and works well with small datasets but assumes feature independence. Logistic Regression is more accurate with larger datasets and can handle correlated features

(11) Lexical semantics studies the meaning of words and their relationships. It is important in NLP for tasks like word sense disambiguation, synonym detection, and semantic similarity. Wordnet path length problem measures semantic similarity by the shortest path between two words in the wordnet hierarchy. For example, the path length between "dog" and "animal" is shorter than between "dog" and "airplane"