Named Entity Recognition (NER) is a subtask of information extraction in the field of Natural Language Processing (NLP) that seeks to locate and classify named entities mentioned in unstructured text into predefined categories such as the names of persons, organizations, locations, expressions of times, quantities, monetary values, percentages, etc. Essentially, NER is about identifying key elements in text and classifying them into a limited set of categories.

For example, in the sentence "Apple Inc. was founded by Steve Jobs, Steve Wozniak, and Ronald Wayne in April 1976," a NER system would ideally identify "Apple Inc." as an organization, "Steve Jobs," "Steve Wozniak," and "Ronald Wayne" as persons, and "April 1976" as a date.

NER plays a crucial role in various NLP applications including question answering, text summarization, machine translation, content classification, knowledge graph construction, and in domains like healthcare for identifying drugs and diseases, in finance for recognizing monetary expressions, and in security for identifying sensitive information.

The techniques for implementing NER systems have evolved over time, from rule-based approaches to machine learning-based methods, and more recently, to deep learning models which utilize large pre-trained models like BERT (Bidirectional Encoder Representations from Transformers) and its variants. These advancements have significantly improved the accuracy and efficiency of NER systems.