What is NLP?

The *GOAL* here is to process or understand Natural Language in order to perform useful tasks like

- Making Appointments

- Buying Things

- Spell Checking

- Generating Response

- Social Media Monitoring ....

Applications of NLP

Spell Checking

Information Extraction

Keyword Search

Advertisement Matching

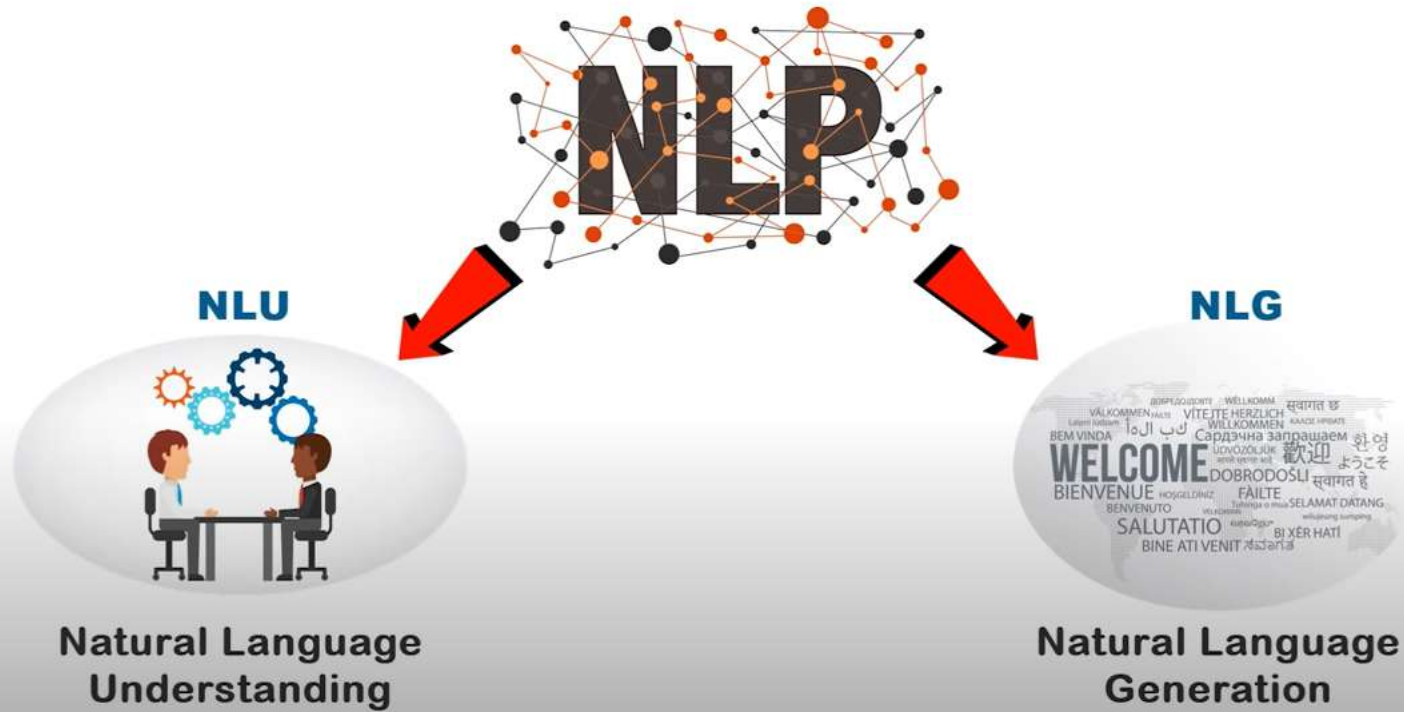# Applications of NLP

Sentimental
Analysis

Chatbot

hello

Speech
Recognition

Machine
Translation

A↔家

NLP : Components

NLU

NLG

Natural Language Understanding

Natural Language Generation

NLTK

Natural Language Analysis
with Python NLTK

Tokenization

Today we will understand Tokenization

01 Break a complex sentence into words

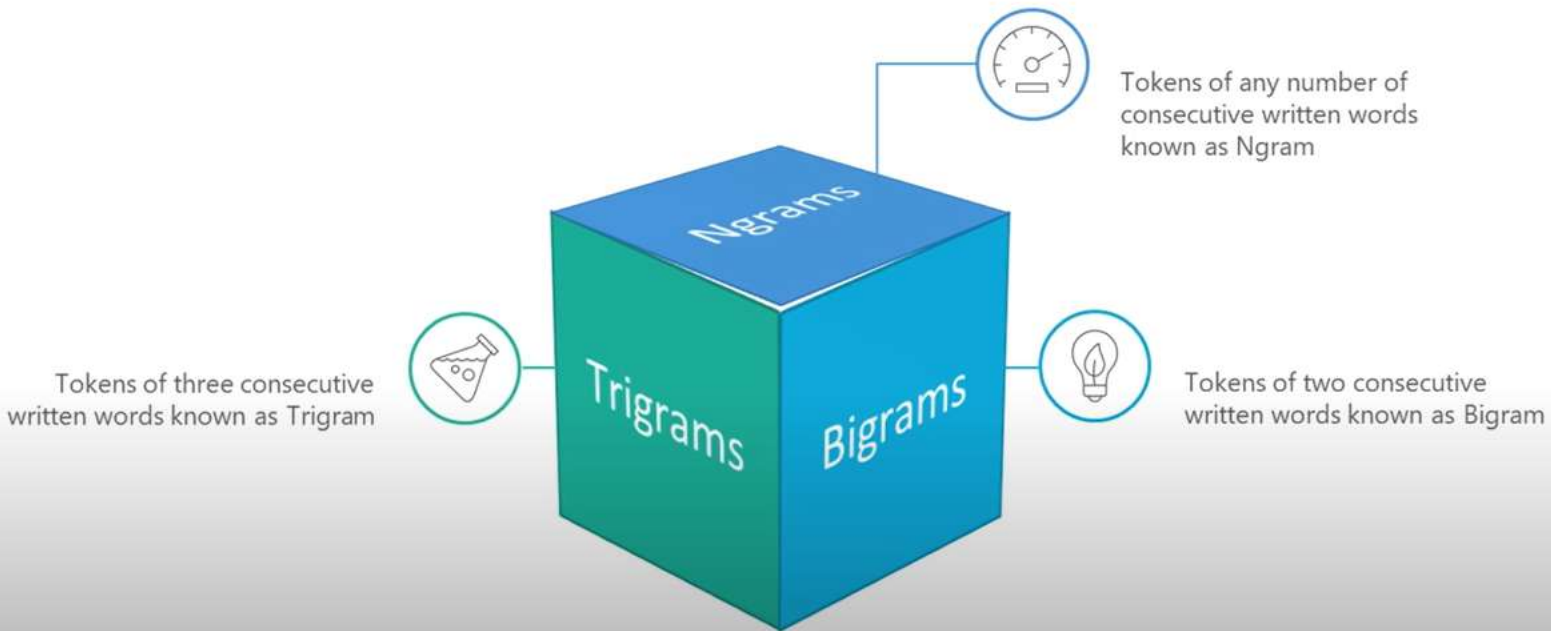**02** Understand the importance of each of the words with respect to the sentence

03 Produce a structural description on an input sentence

Tokenization

Today	we	will	understand	Tokenization

01 Break a complex sentence into words ◀

02 Understand the importance of each of the words with respect to the sentence ◀

03 Produce a structural description on an input sentence ◀

Tokenization

Tokens of any number of consecutive written words known as Ngram

Tokens of three consecutive written words known as Trigram

Tokens of two consecutive written words known as Bigram

Stemming

Normalize words into its base form or root form

| Affectation | Affects | Affections | Affected | Affection | Affecting |

Stemming

Normalize words into its base form or root form

Affect

Lemmatization

L

Lemmatization

Groups together different inflected forms of a word, called Lemma

Somehow similar to Stemming, as it maps several words into one common root

Output of Lemmatisation is a proper word

For example, a Lemmatiser should map *gone*, *going* and went into *go*

Stop Words

Are they Helpful or Not ?

POS : Tags and Descriptions

Tag	Description
CC	Coordinating conjunction
CD	Cardinal number
DT	Determiner
EX	Existential there
FW	Foreign word
IN	Preposition or subordinating conjunction
JJ	Adjective
JJR	Adjective, comparative
JJS	Adjective, superlative
LS	List item marker
MD	Modal
NN	Noun, singular or mass
NNS	Noun, plural
NNP	Proper noun, singular
NNPS	Proper noun, plural
PDT	Predeterminer
POS	Possessive ending
PRP	Personal pronoun

Tag	Description
PRP$	Possessive pronoun
RB	Adverb
RBR	Adverb, comparative
RBR	Adverb, superlative
RP	Particle
SYM	Symbol
TO	to
UH	Interjection
VB	Verb, base form
VBD	Verb, past tense
VBG	Verb, gerund or present participle
VBN	Verb, past participle
VBP	Verb, non3rd person singular present
VBZ	Verb, 3rd person singular present
WDT	Whdeterminer
WP	Whpronoun
WP$	Possessive whpronoun
WRB	Whadverb

POS : Examples

WORDS

the
waiter
cleared
the
plates
from
the
table

DET

PREP

VERB

NOUN

Sentence →

DT	NN	VBD	DT	NN
the	dog	ate	the	cat
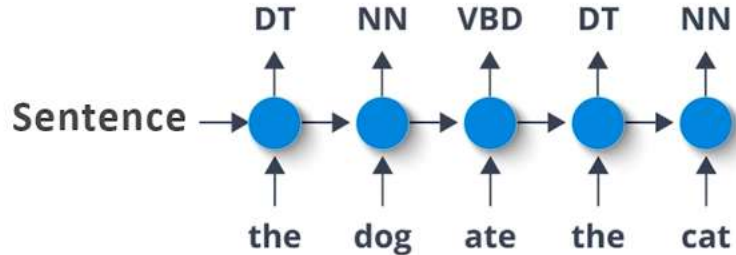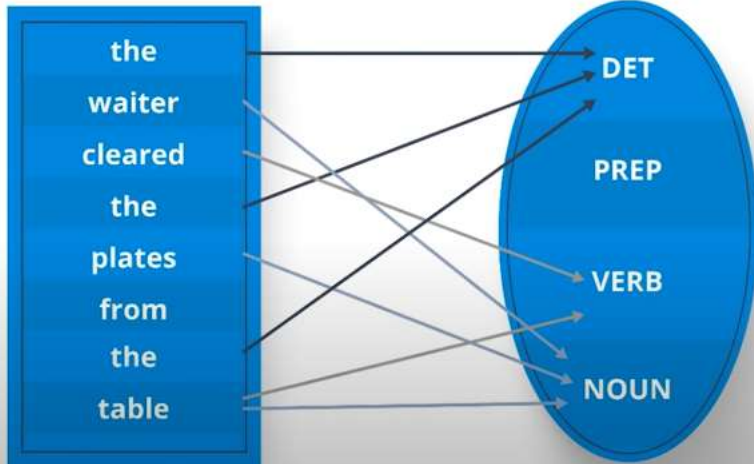
What are Named Entity Recognition ?

MOVIE

MONETARY VALUE

ORGANIZATION

LOCATION

QUANTITIES

PERSON

NER : Named Entity Recognition

Google's CEO Sundar Pichai introduced the new Pixel at Minnesota Roi Centre Event

Organization

Person

Location

Organization