

NLP LAB-1

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Roll no : 62

AIM :

1. [Word Analysis](#)
2. [Word Generation](#)
3. [Morphology](#)

OBJECTIVE :

The objective of the experiment is to learn about morphological features of a word by analysing it.

SOFTWARE USED :

IIIT HYDERABAD VIRTUAL LAB NLP

PROCEDURE :

STEP 1: Select the language.

OUTPUT: Drop down for selecting words will appear.

STEP 2: Select the word.

OUTPUT: Drop down for selecting features will appear.

STEP 3: Select the features.

STEP 4: Click "Check" button to check your answer.

OUTPUT: Right features are marked by tick and wrong features are marked by cross.

SIMULATION :

Word Analysis - studying

Select a Language which you know better

English

Select a word from the below dropbox and do a morphological analysis on that word

studying

Select the Correct morphological analysis for the above word using dropboxes (NOTE : na = not applicable)

WORD	studying	
ROOT	study	✓
CATEGORY	verb	✓
GENDER	male	✓
NUMBER	plural	✓
PERSON	first	✓
CASE	na	✓
TENSE	present-continuous	✓
<input type="button" value="Check"/>	Right answer!!!	

Word Analysis - watching

Select a Language which you know better

English

Select a word from the below dropbox and do a morphological analysis on that word

watching

Select the Correct morphological analysis for the above word using dropboxes (NOTE : na = not applicable)

WORD	watching	
ROOT	watch	✓
CATEGORY	verb	✓
GENDER	male	✓
NUMBER	singular	✓
PERSON	second	✓
CASE	na	✓
TENSE	present-continuous	✓
<input type="button" value="Check"/>	Right answer!!!	

Word Analysis - played

Select a Language which you know better

English ▼

Select a word from the below dropdown and do a morphological analysis on that word

played ▼

Select the Correct morphological analysis for the above word using dropdowns (NOTE : na = not applicable)

WORD	played	
ROOT	play ▼	✓
CATEGORY	verb ▼	✓
GENDER	male ▼	✓
NUMBER	plural ▼	✓
PERSON	third ▼	✓
CASE	na ▼	✓
TENSE	simple-past ▼	✓
Check	Right answer!!!	

Word Analysis – khelega

Select a Language which you know better

Hindi ▼

Select a word from the below dropdown and do a morphological analysis on that word

खेलेगा ▼

Select the Correct morphological analysis for the above word using dropdowns (NOTE : na = not applicable)

WORD	खेलेगा	
ROOT	खेल ▼	✓
CATEGORY	verb ▼	✓
GENDER	male ▼	✓
NUMBER	singular ▼	✓
PERSON	third ▼	✓
CASE	na ▼	✓
TENSE	simple-future ▼	✓
Check	Right answer!!!	

ASSIGNMENT :

1. Choose a typical masculine noun, ending in 'A', from your language. Write down its various forms along with various features and their values associated with them.

Solution :

A typical masculine noun in English that ends in "A" is "**papa**" (a casual or affectionate term for "father"). This noun exhibits a few distinct forms and features, which are commonly used in different contexts.

Here are the various forms of the word "**papa**" and its associated features:

1. Singular and Plural Forms:

- **Singular:** Papa
- **Plural:** Papas

2. Case Forms:

- **Nominative Case (Subject):** Papa
 - Example: "Papa is reading the newspaper."
- **Accusative Case (Object):** Papa
 - Example: "I saw Papa at the store."
- **Genitive Case (Possessive):** Papa's
 - Example: "That is Papa's car."

In English, the genitive case is typically formed by adding an apostrophe and "s" to the singular form, so "**Papa's**" is used to indicate possession.

3. Gender:

- **Masculine**
 - **Papa** is a masculine noun, referring to a father or a male parent.

4. Number:

- **Singular:** Refers to one father (or a male figure of similar authority).
- **Plural:** **Papas** refers to more than one father or similar figures.

5. Usage Context:

- **Informal/Affectionate Use:** The word "**papa**" is often used affectionately or informally to refer to one's father. It carries a sense of intimacy or closeness.
 - Example: "I love you, Papa."
- **Formal Use:** In some languages or cultures, "**papa**" can also be used in a more formal or respectful context, such as addressing the Pope or a priest, but in English, this is not as common outside certain cultural contexts.

6. Diminutive/Variations:

- **Papa's diminutive forms: Pop, Daddy, Dad**
 - These are all variants used to show closeness or affection, depending on the age or emotional tone.

7. Pronunciation:

- **IPA (International Phonetic Alphabet):** /'pɑ:pɑ/ or /'pæpə/
- This pronunciation can vary slightly depending on the accent or region.

2. English has a suffix -en whose use is illustrated in the following lists:

List A	List B
Red	Redden
Mad	Madden
Soft	Soften
Wide	Widen
Sharp	Sharpen

In regard to these data, answer the following questions:

A. What part of speech does the suffix -en attach to? That is, what is the part of speech of the words in list A?

B. When the suffix -en is attached to a word, what part of speech is the resulting word? Give some specific morphological properties of one of the words in list B, in order to justify your answer.

Solution:

A. What part of speech does the suffix -en attach to?

The suffix **-en** in English attaches to **adjectives** to form **verbs**. This is a common process in English where adjectives are converted into verbs by adding **-en**.

In **List A**:

- **Red**
- **Mad**

- **Soft**
- **Wide**
- **Sharp**

These words are all **adjectives**. When the suffix **-en** is added to these adjectives, they become **verbs** (as shown in **List B**).

B. When the suffix -en is attached to a word, what part of speech is the resulting word?

When the suffix **-en** is attached to an adjective, the resulting word is a **verb**. The verb usually means "to make or become" the quality described by the adjective.

Let's go through the morphological transformation of one example from **List B**: "**sharp**" → "**sharpen**".

1. Sharp (Adjective):

- **Meaning:** Describes something having a fine point or edge, or something intense.
- **Morphological features:**
 - It is an adjective that describes a quality or characteristic of a noun (e.g., "sharp knife," "sharp mind").

2. Sharpen (Verb):

- **Meaning:** To make something sharp or more sharp.
- **Morphological features:**
 - **Part of Speech:** The word becomes a verb after the addition of **-en**.
 - **Transitivity:** It is a **transitive verb**, meaning it usually requires an object (e.g., "sharpen a pencil").
 - **Action:** It indicates the action of making something sharper, emphasizing the process of increasing the sharpness of an object.

Detailed Explanation of the Transformation:

- The **adjective "sharp"** describes the quality of an object (like the sharpness of a knife).
- When **-en** is added, it turns **sharp** into the **verb "sharpen"**, meaning to make something sharp or to improve its sharpness.
- This transformation is a common morphological process in English where adjectives are turned into verbs that express the act of **becoming** or **causing something to become** the quality described by the adjective.

3. Take one verb from your mother tongue, gloss it (i.e., give the English meaning) and conjugate it in all tenses and aspects and persons.

Solution:

Let's take the Marathi verb "खाणे" (to eat) and conjugate it across tenses, aspects, and persons.

Gloss (English meaning):

- खाणे (khāṇē) = "to eat"

Conjugation of "खाणे" (to eat)

Present Tense:

- I eat: मी खातो/खाते (mī khātō/khātē)
- You eat: तू खातोस/खातीस (tū khātōs/khātīs)
- He/She eats: तो खातो/ती खाते (tō khātō/tī khātē)
- We eat: आम्ही खातो/खातोय (āmhī khātō/khātōy)
- You all eat: तुम्ही खातात (tumhī khātāt)
- They eat: ते खातात (tē khātāt)

Past Tense:

- I ate: मी खाल्ले/खाल्ली (mī khāllē/khāllī)
- You ate: तू खाल्लास/खाल्लीस (tū khāllās/khāllīs)
- He/She ate: तो खाल्ला/ती खाल्ली (tō khāllā/tī khāllī)
- We ate: आम्ही खाल्ले/खाल्लो (āmhī khāllē/khāllō)
- You all ate: तुम्ही खाल्लात (tumhī khāllāt)
- They ate: ते खाल्ले (tē khāllē)

Future Tense:

- I will eat: मी खाईन (mī khā'īn)
- You will eat: तू खाशील (tū khāśīl)
- He/She will eat: तो खाईल/ती खाईल (tō khā'īl/tī khā'īl)
- We will eat: आम्ही खाणार (āmhī khāṇār)
- You all will eat: तुम्ही खाल (tumhī khāl)

- **They will eat:** ते खातील (tē khātīl)

Imperative (Commands):

- **You, eat!** तू खा (tū khā)
- **You all, eat!** तुम्ही खा (tumhī khā)

Aspects:

- **Progressive (Ongoing action):** खात आहे (khāt āhē) – "is eating"
- **Perfect (Completed action):** खाल्ले आहे (khāllē āhē) – "has eaten"

4. Refer to the following data and answer the question below:

List 1: taller, shorter, higher, lower, smarter

List 2: mower, teacher, sailor, caller, operator

List 3: never, cover, finger, river

Are the words ending with 'er'/'or' have some common features?

Solution:

Yes, the words ending with 'er' or 'or' in **List 2** share some common features:

1. Part of Speech:

- The majority of words ending with 'er' or 'or' in **List 2** are **nouns**. Specifically, they are often **agent nouns**, which refer to a person or thing that performs an action.
 - **Mower** (a person who mows)
 - **Teacher** (a person who teaches)
 - **Sailor** (a person who sails)
 - **Caller** (a person who calls)
 - **Operator** (a person who operates something)

2. Function:

- These words typically refer to a **role** or **occupation**. The suffix 'er' or 'or' is used to indicate someone performing an action or holding a specific job.

3. Syllable Structure:

- These words generally have two syllables, although there can be exceptions. This is common in English, where 'er' and 'or' suffixes are often added to base verbs to create nouns.

On the other hand, in **List 1**, the words are adjectives, not following the same pattern as the agent nouns in List 2. So, while **List 2** focuses on **nouns** that represent agents or roles, **List 1** contains adjectives indicating comparisons or degrees (e.g., taller, shorter, etc.).

In **List 3**, the words are neither agent nouns nor adjectives, so they do not follow the same pattern. These words are just regular nouns (such as **never**, **cover**, **finger**, and **river**) and do not fit the 'er'/'or' suffix pattern as agent nouns do in **List 2**.

5. Identify root and suffix in the following words:

kissed

stronger

goodness

teacher

achievement

Solution :

Here's the breakdown of the **root** and **suffix** in the given words:

1. Kissed:

- **Root:** Kiss
- **Suffix:** -ed (indicates past tense)

2. Stronger:

- **Root:** Strong
- **Suffix:** -er (indicates the comparative form)

3. Goodness:

- **Root:** Good
- **Suffix:** -ness (indicates a noun forming abstract quality or state)

4. Teacher:

- **Root:** Teach
- **Suffix:** -er (indicates a person who performs the action)

5. Achievement:

- **Root: Achieve**
- **Suffix: -ment** (indicates the result or process of an action)

Select a Language which you know better

English

Select a word from the below dropbox and do a morphological analysis on that word

parked

Select the Correct morphological analysis for the above word using dropboxes (NOTE : na = not applicable)

WORD	parked	
ROOT	park	✓
CATEGORY	verb	✓
GENDER	male	✓
NUMBER	singular	✓
PERSON	first	✓
CASE	na	✓
TENSE	simple-past	✓
<div>Check</div>		Right answer!!!

Select a Language which you know better

Hindi

Select a word from the below dropbox and do a morphological analysis on that word

बोतले

Select the Correct morphological analysis for the above word using dropboxes (NOTE : na = not applicable)

WORD	बोतले	
ROOT	बोतल	✓
CATEGORY	noun	✓
GENDER	female	✓
NUMBER	plural	✓
PERSON	na	✓
CASE	direct	✓
TENSE	na	✓
<div>Check</div>		Right answer!!!



Word Generation

English

Select root and features

ROOT	CATEGORY	GENDER	NUMBER	PERSON	CASE	TENSE
sleep	verb	male	singular	first	na	simple-present

sleep

Check

Right answer!!!



Word Generation

English

Select root and features

ROOT	CATEGORY	GENDER	NUMBER	PERSON	CASE	TENSE
earn	verb	male	singular	third	na	simple-present

earns

Check

Right answer!!!

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Word Generation

English

Select root and features

ROOT	CATEGORY	GENDER	NUMBER	PERSON	CASE	TENSE
enjoy	verb	male	singular	first	na	present-continuous

enjoying

Check

Right answer!!!

Virtual Labs

Word Generation

English

Select root and features

ROOT	CATEGORY	GENDER	NUMBER	PERSON	CASE	TENSE
sit	verb	male	singular	first	na	simple-past

sat

Check

Right answer!!!

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Word Generation

Hindi

Select root and features

ROOT	CATEGORY	GENDER	NUMBER	PERSON	CASE	TENSE
सिखा	verb	male	singular	first	na	simple-past

सिखाया

Check

Right answer!!!

Morphology

Select a Root Word

बच्चा

Fill the add delete table here:

Delete	Add	Number	Case	Correction
आ	आ	sing	dr	✓
आ	ए	plu	dr	✓
आ	ए	sing	ob	✓
आ	औ	plu	ob	✓

Submit

Correct Answer!

For Example for बड़का:

Delete	Add	Number	Case
आ	आ	sing	dr
आ	ए	plu	dr
आ	ए	sing	ob
आ	औ	plu	ob

Morphology

Select a Root Word

गाय

Fill the add delete table here:

Delete	Add	Number	Case	Correction
आ	आ	sing	dr	✓
आ	ए	plu	dr	✓
आ	ए	sing	ob	✓
आ	औ	plu	ob	✓

Submit

Correct Answer!

For Example for बड़का:

Delete	Add	Number	Case
आ	आ	sing	dr
आ	ए	plu	dr
आ	ए	sing	ob
आ	औ	plu	ob

Morphology

Select a Root Word

नदी

Fill the add delete table here:

Delete	Add	Number	Case	Correction
ई	ई	sing	dr	✓
ई	इयाँ	plu	dr	✓
ई	ई	sing	ob	✓
ई	इयाँ	plu	ob	✓

For Example for लड़का:

Delete	Add	Number	Case
आ	आ	sing	dr
आ	ए	plu	dr
आ	ए	sing	ob
आ	औ	plu	ob

Submit

Correct Answer!

Morphology

Select a Root Word

आदमी

Fill the add delete table here:

Delete	Add	Number	Case	Correction
ई	ई	sing	dr	✓
ई	ई	plu	dr	✓
ई	ई	sing	ob	✓
ई	इयाँ	plu	ob	✓

For Example for लड़का:

Delete	Add	Number	Case
आ	आ	sing	dr
आ	ए	plu	dr
आ	ए	sing	ob
आ	औ	plu	ob

Submit

Correct Answer!

Morphology

Select a Root Word

शाखा

Fill the add delete table here:

Delete	Add	Number	Case	Correction
आ	आ	sing	dr	✓
आ	अय्य	plu	dr	✓
आ	आ	sing	ob	✓
आ	आऔ	plu	ob	✓

For Example for लड़का:

Delete	Add	Number	Case
आ	आ	sing	dr
आ	ए	plu	dr
आ	ए	sing	ob
आ	औ	plu	ob

Submit

Correct Answer!