Experiment 6: Virtual lab on Word Generator.

A word can be simple or complex. For example, the word 'cat' is simple because one cannot further decompose the word into smaller part. On the other hand, the word 'cats' is complex, because the word is made up of two parts: root 'cat' and plural suffix '-s'

Analysis of a word into root and affix(es) is called as Morphological analysis of a word. It is mandatory to identify root of a word for any natural language processing task. A root word can have various forms. For example, the word 'play' in English has the following forms: 'play', 'plays', 'played' and 'playing'. Hindi shows more number of forms for the word 'खेल' (khela) which is equivalent to 'play'. The forms of 'खेल'(khela) are the following:

खेल(khela), खेला(khelaa), खेली(khelii), खेल ूंगा(kheluungaa), खेल ूंगी(kheluungii), खेलेगा(khelegaa), खेलेगी(khelegii), खेलते(khelate), खेलती(khelatii), खेलने(khelane), खेलकर(khelakar)

For Telugu root ఆడేడం (Adadam), the forms are the following::

Adutaanu, AdutunnAnu, Adenu, Ademu, AdevA, AdutAru, Adutunnaru, AdadAniki, Adesariki, AdanA, Adinxi, Adutunxi, AdinxA, AdeserA, Adestunnaru, ...

Thus, we understand that the morphological richness of one language might vary from one language to another. Indian languages are generally morphologically rich languages and therefore morphological analysis of words becomes a very significant task for Indian languages.

Types of Morphology:

Morphology is of two types,

1. Inflectional morphology

Deals with word forms of a root, where there is no change in lexical category. For example, 'played' is an inflection of the root word 'play'. Here, both 'played' and 'play' are verbs.

2. Derivational morphology

Deals with word forms of a root, where there is a change in the lexical category. For example, the word form 'happiness' is a derivation of the word 'happy'. Here, 'happiness' is a derived noun form of the adjective 'happy'.

Algorithm:

A) For word analysis:

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.

B) For word generation:

STEP 1: Select the language.

OUTPUT: Drop downs for selecting root and other features will appear.

STEP 2: Select the root and other features.

STEP 3: After selecting all the features, select the word corresponding above features selected.

STEP 4: Click the check button to see whether right word is selected or not

OUTPUT: Output tells whether the word selected is right or wrong