# Codenames Game Design Final Sprint

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Clean the clues for player mode

Tasks for the final sprint:



Turn off music button



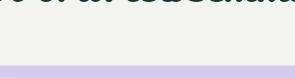
Clean up our code

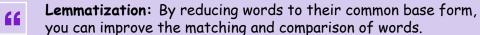


Algorithms explanation



### WordNetCemmatizer







**Word Similarity:** provides information about words and their relationships.



**Word Clustering or Categorization:** The lemmatized forms of words can be used to group or categorize words based on their semantic similarity.

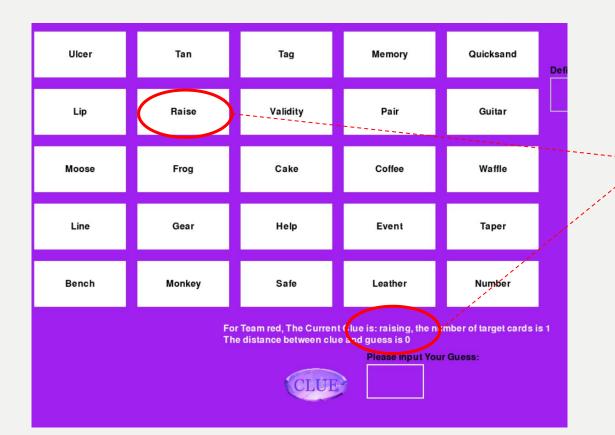


It is valuable tool for improving word processing, normalization, and semantic analysis within the game's context.





### WordNetCemmatizer



We updated the algorithm to lemmetize the -ing ending words to an original word for clues.

## Music Toggle Function

- Purpose of the code snippet: It demonstrates a function to toggle music playing using 'pygame.mixer.music'.
- Code Explanation:
- Music\_Playing Variable is used to track the current state of the music (playing or paused). Set to True as the default value.
- Toggle\_music() is responsible for toggling the state of the music playback.
- Music\_playing variable is False -> pygame.mixer.music.pause().
- Music\_playing variable is True-> pygame.mixer.music.unpause().



## Clean up our code

```
1057

1058 # ------

1059 # the whole game s

1060 homepage()

1061

1062 # Be IDLE friendly

1063 pygame.quit()
```

Originally we got over 1000 lines of code

Lower than 1000 lines after cleaning

# Algorithm of Giving Clues

#### Team Cards

#### Positive and Negative Effects

#### Text Preprocessing:

- •Convert words to lowercase.
- Filter out incorrect words.
- •Keep only noun words.
- •Remove the 25 game cards from the list.
- •Lemmatize the remaining words.
- •Randomly select a card from the current team's cards as the target card.

#### Distance Calculation

#### Clue Selection:

- •Sort the list based on distance in ascending order.
- •Select the word with the smallest distance as the clue.

#### Distance Calculation (Team Cards)

#### Threshold and Turn

# Algorithm of Guessing the Target





User Input:

Store the user's input text.



**Text Preprocessing:** 

Lowercase the user's input. Capitalize the user's input.



Finding Similar Words:

Use the model.similar\_by\_word function to obtain a list of similar words based on the lowercase or capitalized input.



Preprocessing Similar Words:

Lowercase all words in the similar list.



Matching Game Cards:

Iterate through the list to find the first match with the 25 game cards.

Remove the matching word if it corresponds to a guessed card.



**Multiple Guesses:** 

Repeat the loop based on the user's specified number of times to get additional guess cards.



# Thank you for your attention!

