

Report based on findings on SnowballStemmer

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The following words were tested on the SnowballStemmer to find out the inconsistencies in the results of the stemming algorithm and to figure out some of its rules:

| Input | Output Stem | Comment |
|-------------|-------------|--|
| Kiting | Kite | Simple input, output ends with 'e' |
| Biting | Bite | Simple input, output ends with 'e' |
| Riding | Ride | Simple input, output ends with 'e' |
| Spiting | Spite | Simple input, output ends with 'e' |
| Giving | Give | Simple input, output ends with 'e' |
| Mining | Mine | Simple input, output ends with 'e' |
| Fighting | Fight | Two or more consonants just preceding the 'ing', output does not end with 'e' |
| Pitting | Pit | Two or more consonants just preceding the 'ing', output does not end with 'e' |
| Riddling | Riddl | Two or more consonants just preceding the 'ing', output does not end with 'e' |
| Spitting | Spit | Two or more consonants just preceding the 'ing', output does not end with 'e' |
| Manning | Man | Two or more consonants just preceding the 'ing', output does not end with 'e' |
| Igniting | Ignite | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Criticising | Criticis | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Exiting | Exit | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Accepting | Accept | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Seeking | Seek | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Eviting | Evit | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Imagining | Imagin | Two or more vowels in the part of the word before the 'ing', output does not end with an 'e' |
| Carrying | Carri | 'Y' preceding the 'ing' part of the word turns into 'i' |
| Marrying | Marri | 'Y' preceding the 'ing' part of the word turns into 'i' |

Based on the words tested above, the following 3 rules about the Snowball Stemmer can be established upon words with an 'ing' suffix:

- 1) When in a word with an 'ing' suffix has a maximum of only one vowel in the part of the word before the 'ing' and a maximum of one consonant immediately preceding the 'ing', the stem of the word ends with an 'e'.
- 2) When the word does not follow any 1 or both of the above mentioned conditions, the stem of the input word does not end with an 'e', often resulting in incorrect results.
- 3) When the word has the letter 'y' immediately preceding the 'ing', the stem of the word has the original word with the 'ying' replaced by an 'i'.