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### MSCI 641: ASSIGNMENT 3

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#### QUESTION 2:

Are the words most similar to “good” positive, and words most similar to “bad” negative? Why this is or isn’t the case? Explain your intuition:

WORDS SIMILAR TO GOOD/BAD	WORDS	SENTIMENT ASSOCIATED	REASON
Similar to Good	Great, decent, nice, bad, fantastic, reasonable, ok, okay, wonderful, cool, terrific, perfect, fine, cheap, impressive, superb, generous, poor, fair, well	Positive: 16 (Great, decent, nice, bad, fantastic, reasonable, wonderful, cool, terrific, perfect, fine, impressive, superb, generous, fair, well) Negative: 2 (bad, poor) Neutral: 2 (ok, okay)	Majority of the words similar to good are positive words. The model is trained based on CBOW (syntactic link) and predicts the current word from a window of surrounding context words. In sentimental analysis, where people express their positive and negative comments, “good” is commonly used to express positivity. Likewise, other adverbs that express positivity tend to occur in the same context as good. Due to this we see majority of positive words similar to “good”.
Similar to bad	Good, terrible, funny, horrible, emulsifiers, awful, late, poor, stupid, weird, decent, weak, flense, upset, sad, scary, harsh, big, thorny, pathetic	<b>Negative:</b> 15 (terrible, funny, horrible, awful, late, poor, stupid, weird, weak, upset, sad, scary, harsh, thorny, pathetic) <b>Positive:</b> 2 (good, decent) <b>Neutral:</b> 3 (emulsifiers, flense, big)	Majority of the words similar to bad are negative words. The model is trained based on CBOW (syntactic link) and predicts the current word from a window of surrounding context words. In sentimental analysis, where people express their positive and negative comments, “bad” is commonly used to express negativity. Likewise, other adverbs that express negativity tend to occur in the same context as bad. Due to this we see majority of negative words similar to “bad”.

#### Reasons for neutral and other class words:

The reason why a few negative words are similar to good and a few positive words are similar to bad is that the word2vec returns the words that are likely to co-occur in similar context. It is not uncommon to see people write reviews by comparing the good with the bad which may sometimes lead to positive and negative words co-occurring in similar context.

*Eg: The product I bought was so “good” as compared to the “poor” quality product I purchased last time.*