**Question 7 answer** :

superlative

[42.857142857142854, 76.19047619047619, 80.95238095238095]

city-in-state

[33.33333333333333, 61.111111111111114, 83.33333333333334]

family

[70.51282051282051, 91.02564102564102, 96.7948717948718]

adjective-to-adverb

[1.1111111111111112, 12.222222222222221, 22.22222222222222]

currency

[10.0, 10.0, 10.0]

nationality-adjective

[45.348837209302324, 74.4186046511628, 87.20930232558139]

capital

[8.333333333333332, 58.333333333333336, 75.0]

comparative

[53.333333333333336, 76.19047619047619, 80.0]

**Final answer**

{'superlative': [42.857142857142854, 76.19047619047619, 80.95238095238095], 'city-in-state': [33.33333333333333, 61.111111111111114, 83.33333333333334], 'family': [70.51282051282051, 91.02564102564102, 96.7948717948718], 'adjective-to-adverb': [1.1111111111111112, 12.222222222222221, 22.22222222222222], 'currency': [10.0, 10.0, 10.0], 'nationality-adjective': [45.348837209302324, 74.4186046511628, 87.20930232558139], 'capital': [8.333333333333332, 58.333333333333336, 75.0], 'comparative': [53.333333333333336, 76.19047619047619, 80.0]}

Following is the table for all categories with different accuracy:

|  |  |  |  |
| --- | --- | --- | --- |
| Category | 1-best | 5-best | 10-best |
| adjective-to-adverb | 1.11% | 12.22% | 22.22% |
| currency | 10% | 10% | 10% |
| nationality-adjective | 45.35% | 74.42% | 87.21% |
| capital | 8.33% | 58.33% | 75% |
| comparative | 53.33% | 76.19% | 80% |
| city-in-state | 33.33% | 61.11% | 83.33% |
| family | 70.51% | 91.02% | 96.79% |
| superlative | 42.86% | 76.19% | 80.95% |

|  |  |  |
| --- | --- | --- |
| Category | Incorrectly predicted | Correct Answer |
| adjective-to-adverb | regular | most |
| currency | wins | korea |
| nationality-adjective | language | england |
| capital | queens | london |
| comparative | good | great |
| city-in-state | newark | seattle |
| family | sons | brothers |
| superlative | good | great |

Q: Are there certain kinds of relations that seem to be predicted more accurately or less accurately by this method? Discuss your opinions and give a rationale for them.

Ans:

It seems from the table that all the relations have overall good accuracy for data.

Relations, which have most accuracy predictions, are ‘family’, ‘comparative’, ‘superlative’ in which all have above 40% 1-best accuracy and above 70% 5-best accuracy.

Also relations ‘adjective-to-adverb’, ‘capital’ and ‘currency’ are producing lower prediction accuracies in which all have below 10% 1-best accuracy. In English documents we usually find words in the context of ‘family’ as many books have stories about family of students, scientists or real life heroes. I think this the main rationale behind getting so high prediction accuracy for ‘family’ relation. Similarly in literature, comparative adjectives are highly used like ‘bad’, ‘worse’ , ‘better’ and thus have high accuracy for ‘comparative’ relation. Similarly, not having enough reference for ‘capital’, ‘currency’ relations in literature is the main reason for their lower accuracy.