**Problem set 1B**

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1. Given the text example below, show the following NLP operations.
2. Sentence detection/Tokenization
3. Lemmatization
4. POS tagging/Chunking
5. Parsing
6. Name Entity Recognition
7. Co-reference Resolution

Ans.

* said/VBD (root)
* United/NNP (nsubj)
* ,/, (punct)
* unit/NN (appos)
* a/DT (det)
* UAL/NNP (nmod:of)
* of/IN (case)
* ,/, (punct)
* took/VBD (ccomp)
* increase/NN (nsubj)
* the/DT (det)
* effect/NN (dobj)
* night/NN (nmod:tmod)
* Thursday/NNP (compound)
* and/CC (cc)
* applies/VBZ (conj:and)
* increase/NN (nsubj)
* routes/NNS (nmod:to)
* to/TO (case)
* most/JJS (amod)
* competes/VBZ (advcl)
* where/WRB (advmod)
* it/PRP (nsubj)
* carriers/NNS (nmod:against)
* against/IN (case)
* discount/NN (compound)
* ,/, (punct)
* Chicago/NNP (nmod:such\_as)
* such/JJ (case)
* as/IN (mwe)
* Dallas/NNP (nmod:to)
* to/TO (case)
* and/CC (cc)
* Atlanta/NNP (conj:and)
* Atlanta/NNP (nmod:to)
* and/CC (cc)
* Denver/NNP (conj:and)
* Francisco/NNP(nmod:to)
* to/TO (case)
* San/NNP (compound)
* ,/, (punct)
* Angeles/NNP (conj:and)
* Los/NNP (compound)
* and/CC (cc)
* York/NNP (conj:and)
* New/NNP (compound)
* Angeles/NNP (nmod:to)
* York/NNP (nmod:to)
* Denver/NNP (nmod:such\_as)
* applies/VBZ (ccomp)
* ./. (punct)

1. Summarize and draw a knowledge graph.

Ans.

