

5)

Revanth Chaklam

16241583

CS5560 Knowledge Discovery and Management

In-Class-Exercise (ICE-1A)

June 5, 2017

Student Names: Revanth Chaklam
class.id: 02

We are supposed to build a knowledge graph for the following input (text data).

1. Describe your knowledge about knowledge graph.
2. Why do we want to build such a knowledge graph?
3. What steps are required? Show your own workflow for this task.
4. What are the challenges?
5. Draw a knowledge graph for the given data.

CHICAGO (AP) — Citing high fuel prices, United Airlines said Friday it has increased fares by \$6 per round trip on flights to some cities also served by lower-cost carriers. American Airlines, a unit AMR, immediately matched the move, spokesman Tim Wagner said. United, a unit of UAL, said the increase took effect Thursday night and applies to most routes where it competes against discount carriers, such as Chicago to Dallas and Atlanta and Denver to San Francisco, Los Angeles and New York.

1 Solution:- The Knowledge Graph is a knowledge base used by Google to enhance its main Search Engine's search results with a semantic search information gathered from a number of resources. It basically provides structured & detailed information about the topic in addition to a list of links to other sites. To be precise a knowledge graph is a data structure that allows to contextualize entities and organize correlations between entities of multiple type of entities. Knowledge graph is just a set of entities (sachin Tendulkar, Indian Cricket Team etc), and the relationships b/w those entities (<plays for>, <scorecard>). The facts are the combination of the previous two.

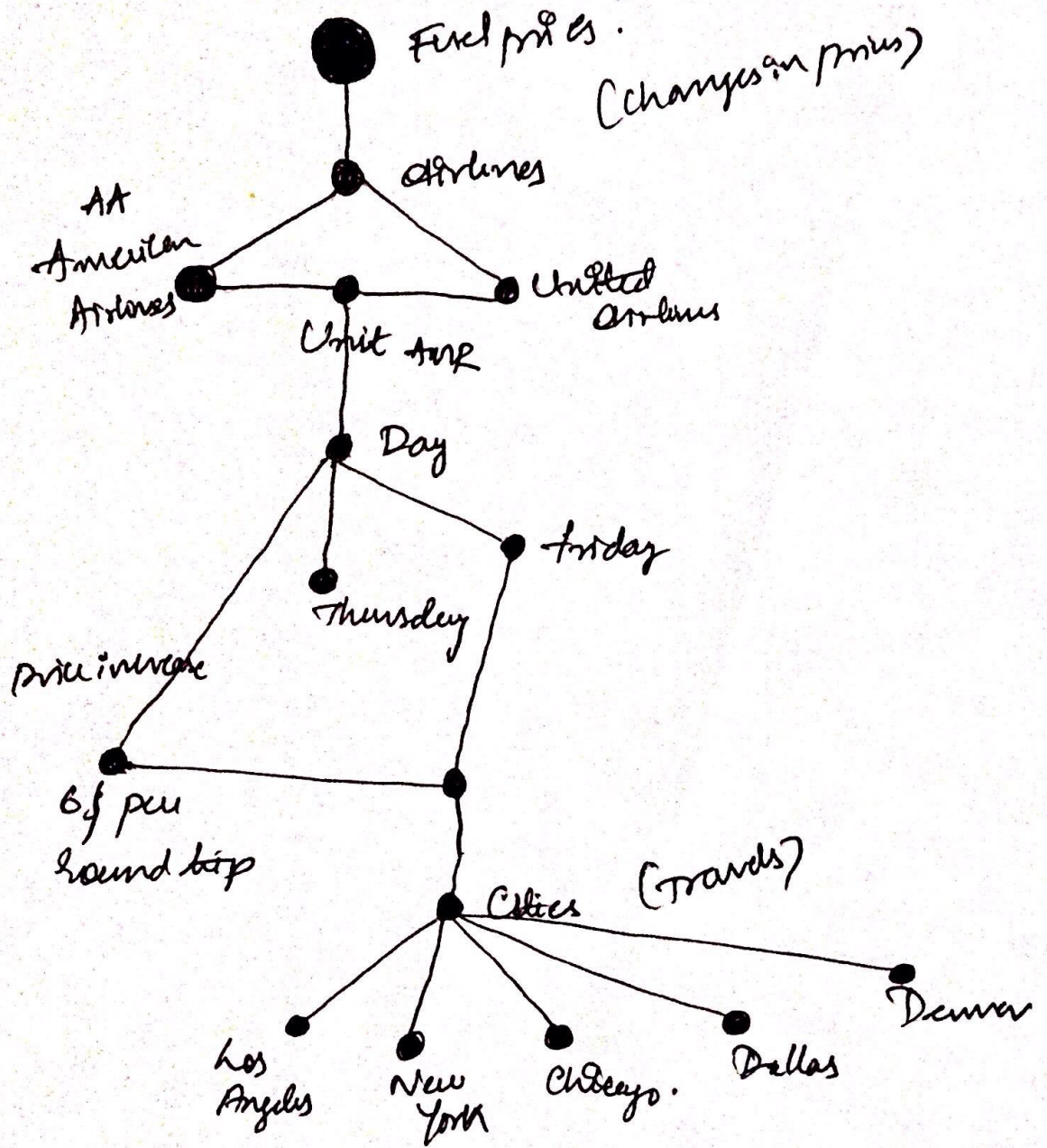
2) The knowledge contained in a knowledge graph is represented by the set of facts it contains. Basically knowledge graphs are the knowledge available to the machine in addition to some reasoning capabilities can be used by some intelligent applications. A knowledge graph can be depicted as an oracle to whom a computer can question anything. For example what is the temperature in Kansas city right now, who is the president of United States etc. The range of questions that can be asked is broad.

- 3) When the knowledge graph is relatively completed, it is guaranteed to provide high quality answers in very less amount of time. In order to build a knowledge graph we need
- A data acquisition strategy: need to leverage unfathomable amounts of information openly available.
 - Nodes: related to the semantic concepts like persons, entities, places, events etc.
 - Edges: It is the relationship between nodes based on semantic

4) What are the challenges?

- Finding the differences and recognizing entities in the text
- Data expansion to enrich semantic search
- Connecting the entities to content and data sources
- Errors associated with the graph
- Information extraction methods
- Noise present in the source information.

5)



(Fig) knowledge graph for the example given