CS5560 Knowledge Discovery and Management

Problem Set (PS-1A) - June 5, 2017 Name: P.Shankar

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1. Describe your knowledge about knowledge graph?

A) The knowledge graph is about collecting information about objects in the real world. The object could be a person, could be a movie, and many other types of things. For example, for a famous person, we collect relevant data about them, such as their date of birth, or how tall they are. We can also connect that person to closely related objects in the knowledge graph. The knowledge graph contains information about entities and their relationships.

Knowledge graph - structured representation of entities, their labels and relationships between them.

2. Why do we want to build such a knowledge graph?

A) Knowledge graph is the technology that helps search to understand the world as I and we do through the people, places and things that make it up.

It helps to improve search by putting quick information right at your fingertips and helping you to explore a topic.

3. What steps are required? Show your own workflow for this task.

A) Three steps are mainly required

1) Identifying the entities (persons, events, etc.).These entities are the nodes of the knowledge graph.

2) Relationship between the entities. The relationships become the edges of the graph.

3) Organizing the data & building the graph.

This will help us to discover and use the intelligence embedded in our knowledge graph.

Work flow:

a) Firstly, Identified the entities:

* Organizations: UAL, AMR, United Airlines, American Airlines.
* Locations: Chicago, Dallas, Atlanta, Denver, San Francisco, Los Angeles, New York.
* Day: Friday, Thursday night.
* Person: Tim Wagner
* Amount: $ 6

B) Next, identified the relationship between the organizations, locations, Day, person and amount

Ex:

* united airlines is a unit of UAL
* American airlines is a unit of AMR
* Roundtrip: Chicago to Dallas, Atlanta.
* Denver to sanfransico, LosAngeles, New York.
* Day: Announcement on Friday, Effective from Thursday night

c) Connected the relationship within the same and the other entities in an organized manner.

* United Airlines, American Airlines increased the price by 6$.
* Spokesman Tim Wagner of AMR group also announced.
* Inflated price on discount carrier routes also.

4. What are the challenges?

A) The challenges faced as a part of this knowledge graph are

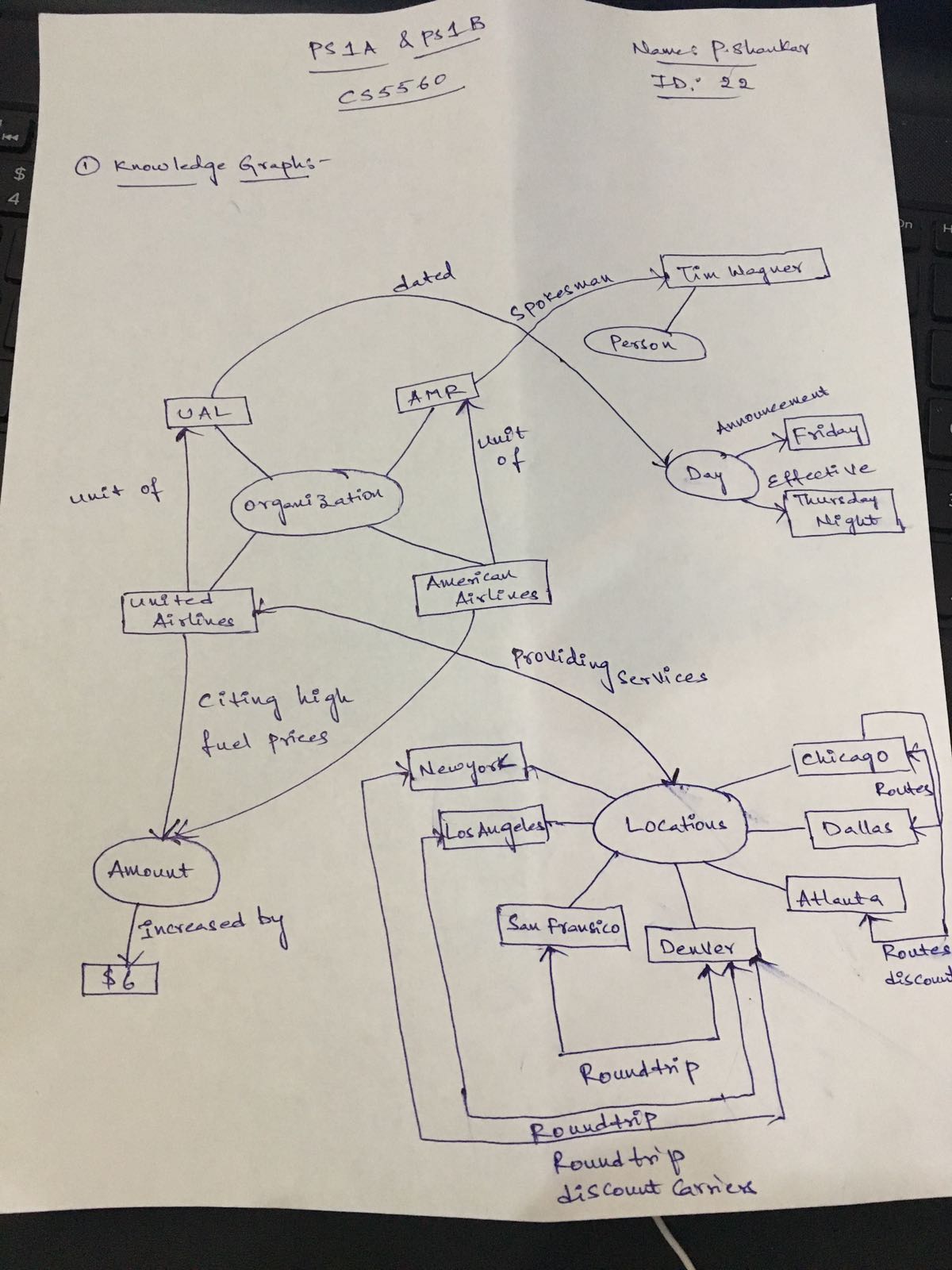
* Identifying the entities
* The connection of edges to the entity nodes.
* Coreference relationship for the UAL and AMR.
* Whether it would be price increase or decrease.
* Effective from Thursday night so exclude till Thursday midnight. So, deeper search.

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.

A)



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