

## CS5560 Knowledge Discovery and Management

## Problem Set (PS-2A)

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1. Draw knowledge graphs (both Schema and Data graphs)

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.

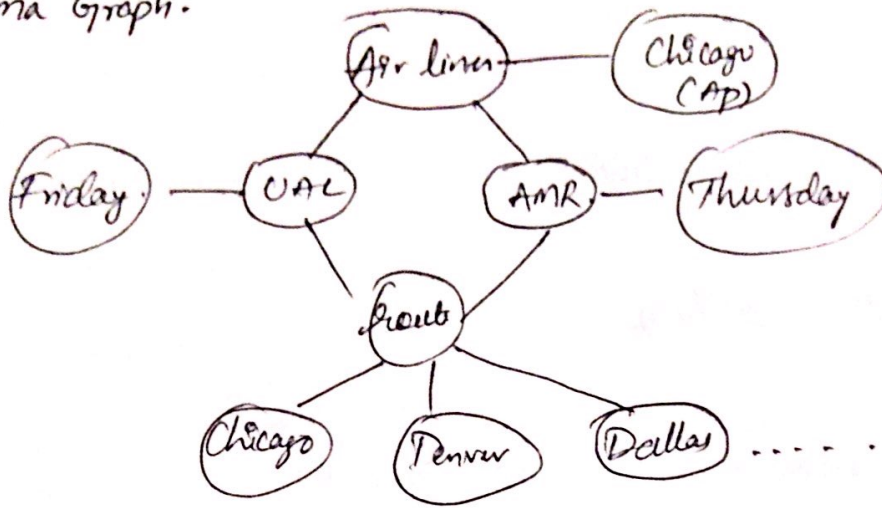
2. Design question answering for the given input text. Try to include at least one questions for the following question types.

- What
- Where
- When
- Who
- How
- How much
- Yes/No

① Knowledge Graph:- Basically a knowledge graph is a knowledge base used by Google to enhance its search engines search results with semantic search information gathered from a wide variety of sources.

→ Schema Knowledge Graph: In a Schema Knowledge Graph the leaf node contains the data which can be further classified. It represents the schema of the data without representing the inner details of the text.

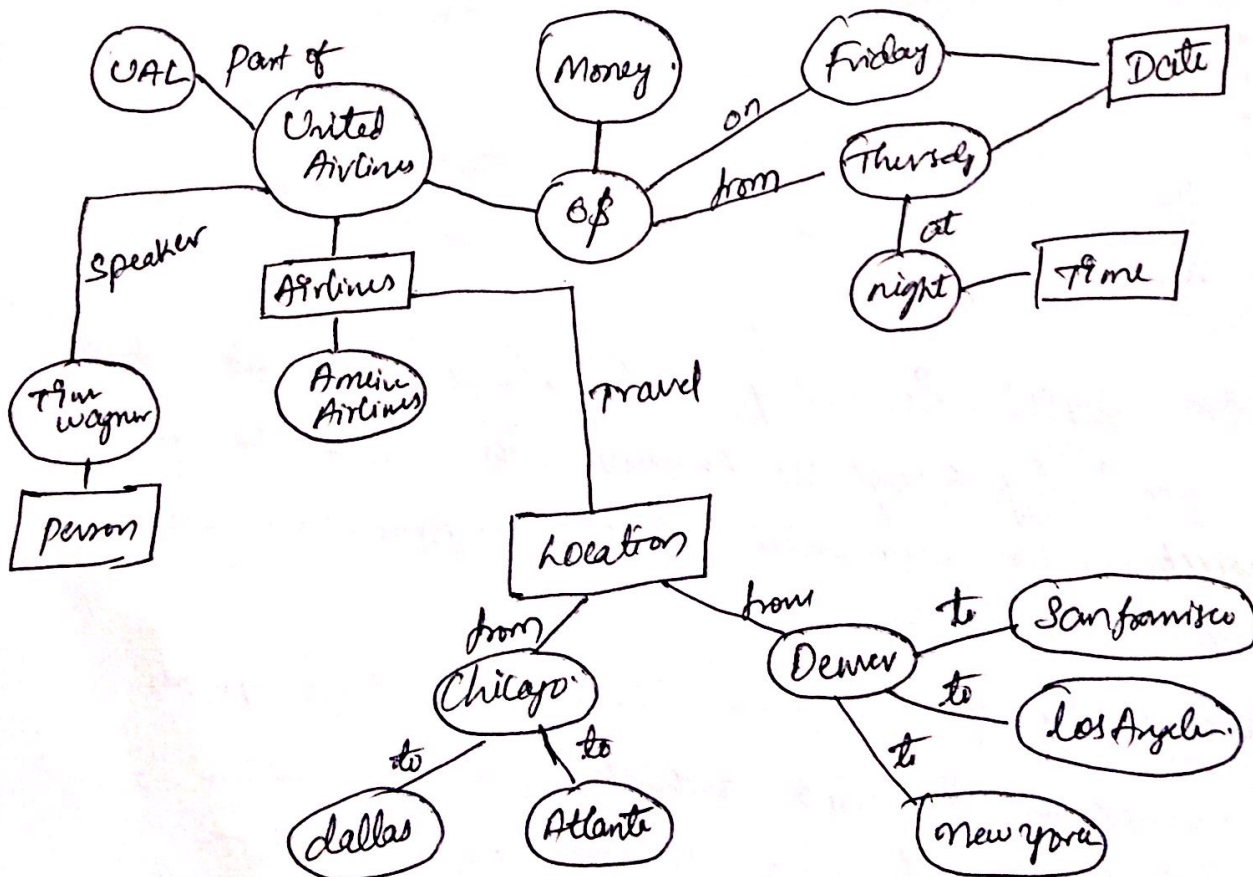
(Fig) Schema Graph:



→ Data Knowledge Graph:

In this model of graph, the data context is represented by its inner most details. The whole complete demonstration of data is shown in the leaf node.

(Fig) Data Knowledge Graph:



2. Selection:

(i) What

→ what is the main reason for increasing fare rate

(Sol:) High fuel costs.

→ (ii) Where were the plans for increased fare rate affected

(Sol:) Chicago - Dallas, Atlanta

Denver - San Francisco, Los Angeles, New York

→ (iii) When

When is the fuel price increased

(Sol:) Thursday Night

→ (iv) Who is the

Who is the spokesperson for the United American Airlines

(Sol:) Tim Wagner

→ (v) How

How the fuel rates increment affected the airlines fare rate

(Sol:) It affected by increasing airline prices.

→ (vi) How much fare was increased

(Sol:) 6¢ only

→ (vii) Yes/No

Is the fuel price changes affected fare?

(Sol:) Yes

Does Tim belong to UAL?

(Sol:) No. He belongs to AA.