CS5560 Knowledge Discovery and Management

In-Class-Exercise (ICE-1A)

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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.

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Number - 12

1. Describe your knowledge about knowledge graph.

A. The knowledge Graph is a knowledge base used by Google to enhance its search results with semantic search information gathered from a wide variety of sources. knowledge graph display was added to Google's search engine in 2012, starting in the united states, having been announced on May 16, 2012. It provides structured and detailed information about the topic in addition to a list of linke to other sites. The goal is that users would be able to p use this information to resolve their query without having to navigate to other sites and assemble the information themselves.

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

A. There are several reasons to build a knowledge graph. Mainlly

→ To minimize searching time, fast retreavals.

→ Easy understanding of the context in data.

→ Training AI's, Machine learning procedures.

→ Helping reasercher's and scholars on their researches through having fast reliable searche

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

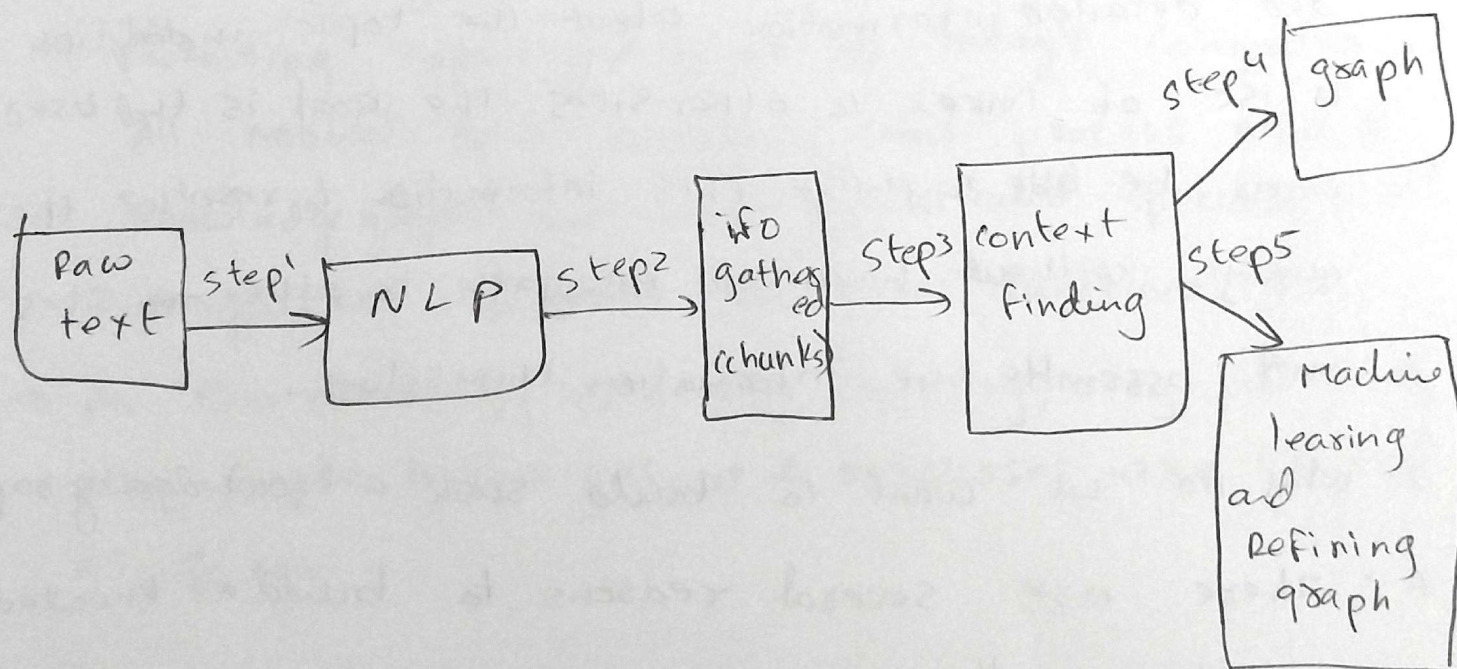A. There are 5 steps in processing a raw text data into knowledge graph.

step1: Natural Language processing (NLP)

step2: Information Retrieval / Information Extraction

step3: Topic Discovery (categorizing)

step4: knowledge graph construction

step5: knowledge graph construction with Machine learning.

Raw text →step1→ NLP →step2→ info gathered (chunks) →step3→ context finding →step4→ graph / →step5→ Machine learing and Refining graph

4. What are the challenges?

A. There are numerous challenges in the process of converting a Raw text into knowledge graph.

→ All texts won't follow good grammatical, which is a problem while dealing with NLP.

→ we have 1000's of languages and literatures are written in all these languages.

→ The meaning of same word varies from sentence to sentence Based on context of the sentence, So it is very difficult to find the context of a data

→ Processing capacity → speed of today's computers. All Normal pc's certainly can't process NLP & knowledge graph. we need Sophisticated specially built computer's to ~~build~~ do these functionality.

→ As this thecnology is newlly emerging, very little of the people knows about & resourses are limited as of now.

5. Draw a knowledge graph for the given data.

A.

Tim wagner

Fuel

— spokes man → Tim wagner

increased by → United Airlines

personal trip → United Airlines

United Airlines ← Matched

United Airlines ← Matched

American Airlines

AMR unit → (Matched to United Airlines)

fuel rate increased → Chicago

Chicago — to → Dallas

Chicago — to → Atlanta

fuel rate increased → Denver

Denver — to → San Francisco

Denver — to → Los Angles

Denver — to → New York