NLP Presentation

Common Tasks :

1. Creating the Database

Restaurants :

1. Id - Primary Column // No need
2. Name
3. Location
4. Rating - { 1 to 5 } - this is customer service rating, not the restaurant star rating
5. Cuisine - {Indian, Italian, Chinese, Mexican, Korean}
6. Price { Cheap, Average, Expensive }
7. Distance { Near, Far, Average}
8. Developing the training data for NLU classification approach
9. Creating Presentation
10. Finding synonyms
11. Front End

UI Tasks

1. User can set priorities and preferences. - This is how we get the user profile.
2. Two types of user inputs - > voice and text
3. Result display -> Text to audio and Tabular format

NLU 1 - Keyword based approach

1. Replaced synonyms with keywords

e.g {give me inexpensive restaurant} -> {give me cheap restaurant}

1. Keyword extraction using RAKE -> used custom stoplist
2. Searching for the keywords belonging to types -> Cuisine, distance and Price
3. Output in form of dictionary : Dialogue act

NLU 2 - Classification based

1. Evaluated with 2 classification algorithms a) Naive Bayes and Decision tree.
2. Used Decision tree algorithm
3. Trained the model with 200 training sentences
4. Classified the sentences into 3 categories -> {Cuisine,Price and Distance}
5. Used the synonyms to train the model
6. Output in form of dictionary : Dialogue act

Dialogue Management

1. Central Component of the system
2. Interacts with users, NLU and NLG
3. Create two types of Dialogue acts 1) Request and b) Confirm
4. Takes the user input
5. Confirm all the user parameters
6. Querying the database
7. Handling based on tradeoff based on preferences and priorities.

NLG

1. Template based approach
2. Request info
3. Confirm info
4. Generate Final result based on user request and tradeoff