

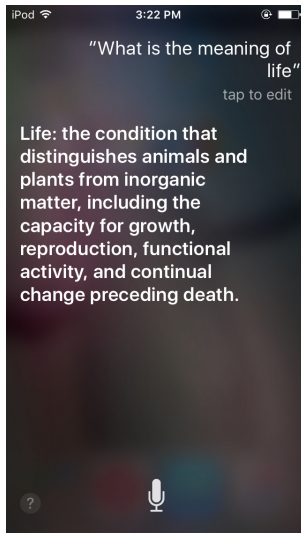
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# A solution for QA using dependency parsing

Tp. Hồ Chí Minh, Tháng 03/2018

# Question Answering



# Type of Questions

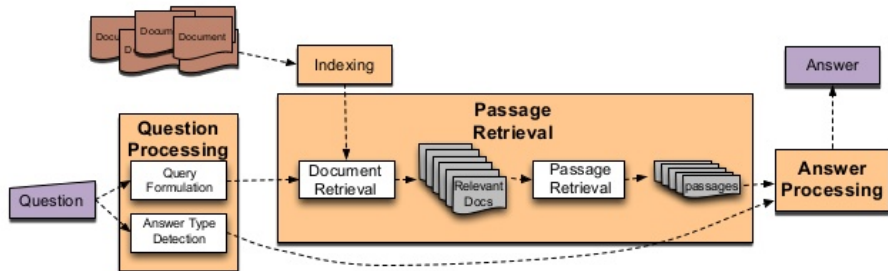
- Factoid questions
  - Who is Putin?
  - How much water should a person drink a day?
  - Who wrote the book forrest gump was based on?
  - Does C++11, 14, 17 or 20 introduce a standard constant for pi?
- Non-factoid questions
  - What is the meaning of life?
  - Does writing matter a lot in research?
  - How can I give out my telephone number to my neighbors without implying anything?

# Approaches for QA

- Information Retrieval approaches
  - Answer the question based on textual data.
  - Given a question, IR systems find out the paragraph that answer for it.
- Knowledge-based and Hybrid approaches
  - We convert the question into a semantic representation (kind of SQL queries).
  - Ex: *"What countries has population over 100 millions?"*  $\Rightarrow$  *SELECT country.name FROM country WHERE country.population > 10<sup>9</sup>*

# Information Retrieval approaches

## IR-based Factoid QA



# Information Retrieval approaches

Q: *Which US state capital has the largest population?*

- **Answer Type:** city
- **Query:** US state capital, largest, population
- **state capital**

# Approaches for QA

- Information Retrieval approaches
  - Based on retrieving and reranking documents.
  - Easier to implement.
  - Not precise comparing to KB
  - We don't understand the meaning of the questions.
- Knowledge-based and Hybrid approaches
  - Base on exact queries over a structured database.
  - Hard to implement (of course).
  - Precise
  - Help us understand the **semantic meaning** of the questions.

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# Tham khảo