

## 수행 과제

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RASA open source를 활용한 날씨 정보 챗봇 제작

사용 언어  Python

개발 환경  Visual Studio Code

챗봇 타입 Closed - Retrieval Chatbot (Rules-based)

사용 데이터 5 day / 3 hour forecast OPEN API ([openweathermap.org](https://openweathermap.org))

# 프로그램 구조

How is the weather in Delhi tomorrow?



## RASA NLU

Intent Classification  
- ask\_weather(1.0)

Entity Extraction  
- city (필수) : Delhi  
- date : tomorrow  
- time : None  
- day\_of\_the\_week : None  
- status : None  
- name : None



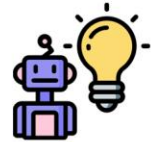
## RASA CORE

Next Action (Stories)  
## Weather Story  
\* ask\_weather  
- answer\_weather\_form

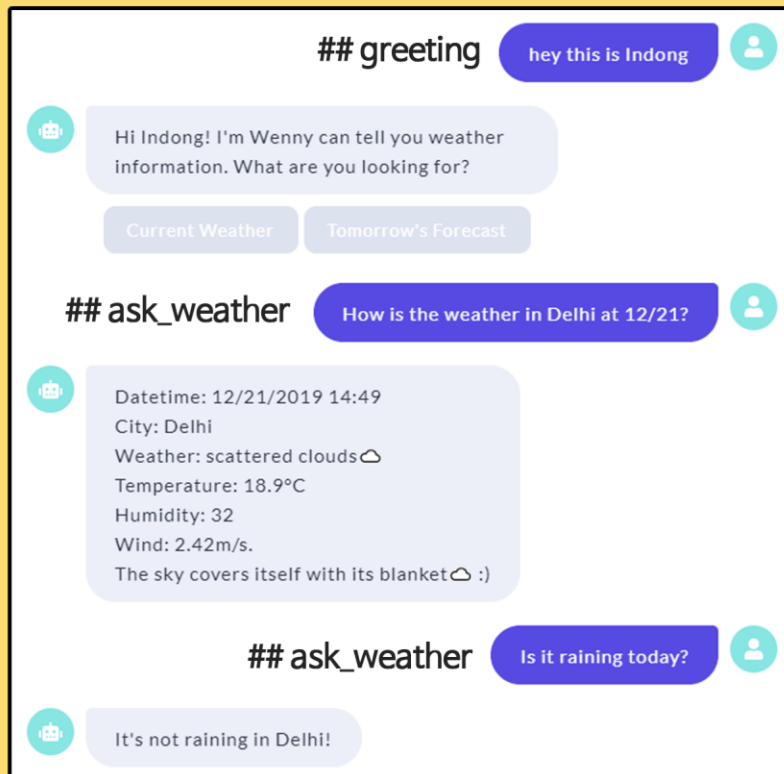
Domain  
forms:  
answer\_weather\_form

Actions  
class AnswerWeatherForm

Datetime:  
19/12/2019 11:05  
City: Delhi  
Weather: broken clouds  
Temperature: 17.9°C  
Humidity: 23  
Wind: 2.25m/s.



# 프로그램 구현



사용자 편의성 증대를 위한  
버튼 제시



다양한 날짜 / 시간 표현법을  
처리하기 위해 정규표현식을  
사용



사용자가 원하는 장소의 일기  
예보를 API에서 가져온 뒤,  
datetime 모듈을 이용해  
시간대를 계산해 제시



특정 날씨 / 상황에 대한  
정보만을 얻는 기능 구현

# 프로그램 실행 예시

hey this is Indong

Hi Indong! I'm Wenny can tell you weather information. What are you looking for?

Current Weather Tomorrow's Forecast

How is the weather in Delhi at 12/21?

Datetime: 12/21/2019 14:49  
City: Delhi  
Weather: scattered clouds ☁  
Temperature: 18.9°C  
Humidity: 32  
Wind: 2.42m/s.  
The sky covers itself with its blanket ☁ :)

Is it raining today?

It's not raining in Delhi!

\* Intent : greet  
- Action : select\_action  
\$ Entities  
name : Indong

\* Intent : ask\_weather  
- Action : answer\_weather\_form  
\$ Entities  
city : Delhi  
date : 12/21  
time : None (time이 None이라면 내부 함수에서 현재 시간으로 설정)

\* Intent : ask\_weather  
- Action : answer\_weather\_form  
\$ Entities  
city : Delhi (city 슬롯에 저장되어 있는 'Delhi'를 불러온다.)  
date : today  
status : rain

# 프로그램 실행 예시

How about 12/20/2019?

Where is your city?

Seoul

Datetime: 12/20/2019 14:47  
City: Seoul  
Weather: overcast clouds ☁  
Temperature: -1.1°C  
Humidity: 33  
Wind: 1.96m/s.  
The sky covers itself with its blanket ☁ :)

How about Noida?

Datetime: 12/20/2019 14:47  
City: Noida  
Weather: broken clouds ☁  
Temperature: 18.9°C  
Humidity: 24  
Wind: 0.14m/s.  
The sky covers itself with its blanket ☁ :)

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
date : 12/20/2019  
(dd/mm/yyyy 포맷)

\*Intent : ask\_weather  
-Action : utter\_ask\_city (필수 entity인 city가 존재하지 않는다면 RASA form이 이를 자동으로 요구하게 된다.)  
\$ Entities  
city : Seoul  
date : 12/20/2019

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
city : Noida

# 프로그램 실행 예시

I live in Mumbai

Datetime: 12/18/2019 14:49  
City: Mumbai  
Weather: broken clouds ☁  
Temperature: 28.9°C  
Humidity: 55  
Wind: 5m/s.  
The sky covers itself with its blanket ☁ :)

how about 9pm?

Datetime: 12/18/2019 21:00  
City: Mumbai  
Weather: clear sky ☀  
Temperature: 25.9°C  
Humidity: 63  
Wind: 2.47m/s.  
May the bright light ☀ be with you.

Is it clear at 15:00?

It seems cloudy.

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
city : Mumbai  
date: None (최초 질문에서 date를  
입력받지 못했다면 현재 날짜로 설정)

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
city : Mumbai  
time : 9pm

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
city : Mumbai  
time : 15:00  
status : clear

# 프로그램 실행 예시

How about Texas on Friday?

Datetime: 12/20/2019 14:51  
City: Texas  
Weather: broken clouds ☁  
Temperature: 27.9°C  
Humidity: 40  
Wind: 5.01m/s.  
The sky covers itself with its blanket ☁ :)

How is the weather at Dec 21st?

Datetime: 12/21/2019 14:51  
City: Texas  
Weather: clear sky ☀  
Temperature: 27.9°C  
Humidity: 27  
Wind: 1.37m/s.  
May the bright light ☀ be with you.

thanks

I'm honored to help you.

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
city : Texas  
day\_of\_week : Friday

\*Intent : ask\_weather  
-Action : answer\_weather\_form  
\$ Entities  
city : Texas  
date : 21st Dec

\*Intent : thanks  
-Action : utter\_noworries