오픈소스 **SW**기여

Test plan

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Test

1. 단위 테스트

- **dataSearch** 함수 테스트
  input 데이터에 알맞은 csv파일로 읽어온 데이터프레임을 알맞게 가공하여 return 하는지를 확인한다.

  - **Test data**

month = “01”
day = ”11”
weather_elements = [”temperature”]
location = ”Seoul”
precipitation = False

month = “12”
day = ”30”
weather_elements = [”temperature”, “air_pressure”]
location = “Washington”
precipitation = True

  - 테스트 결과

1번 Test
Seoul의 날씨데이터는 1시간 간격으로 측정되어 있다.

	location	date	time	temperature
219	Seoul	2022-01-11	12:00:00 AM	-9.3
220	Seoul	2022-01-11	1:00:00 AM	-8.5
221	Seoul	2022-01-11	2:00:00 AM	-7.6
222	Seoul	2022-01-11	3:00:00 AM	-7.0
223	Seoul	2022-01-11	4:00:00 AM	-5.9
224	Seoul	2022-01-11	5:00:00 AM	-5.4
225	Seoul	2022-01-11	6:00:00 AM	-4.9
226	Seoul	2022-01-11	7:00:00 AM	-4.8
227	Seoul	2022-01-11	8:00:00 AM	-5.5
228	Seoul	2022-01-11	9:00:00 AM	-6.7
229	Seoul	2022-01-11	10:00:00 AM	-7.5
230	Seoul	2022-01-11	11:00:00 AM	-8.3
231	Seoul	2022-01-11	12:00:00 PM	-9.0
232	Seoul	2022-01-11	1:00:00 PM	-9.6
233	Seoul	2022-01-11	2:00:00 PM	-10.0
234	Seoul	2022-01-11	3:00:00 PM	-10.2
235	Seoul	2022-01-11	4:00:00 PM	-10.7
236	Seoul	2022-01-11	5:00:00 PM	-11.0
237	Seoul	2022-01-11	6:00:00 PM	-11.3
238	Seoul	2022-01-11	7:00:00 PM	-11.3
239	Seoul	2022-01-11	8:00:00 PM	-11.1
240	Seoul	2022-01-11	9:00:00 PM	-11.0
241	Seoul	2022-01-11	10:00:00 PM	-11.2
242	Seoul	2022-01-11	11:00:00 PM	-11.2

2번 Test
Washington의 날씨데이터는 6시간 간격으로 측정되어 Seoul의 데이터에 비해 양이 적다.

	location	date	time	temperature	air_pressure	precipitation
1435	Washington	2022-12-30	12:00:00 AM	6.7	1015.1	0.0
1436	Washington	2022-12-30	6:00:00 AM	0.0	1014.8	0.0
1437	Washington	2022-12-30	12:00:00 PM	-1.7	1014.8	0.0
1438	Washington	2022-12-30	6:00:00 PM	15.0	1012.1	0.0

- **showOutput** 함수 테스트
input 데이터를 형식에 맞게 매핑하고 dataSearch함수를 통해 가져온 날씨 데이터를 그래프와 데이터프레임의 형태로 잘 나타내는지 확인한다.

  - **Test data**

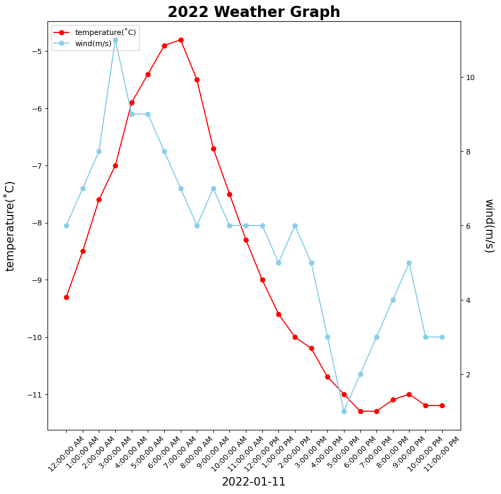
month = “January”
day = ”11”
weather_elements = [”temperature”, “wind”]
location = ”Seoul”
precipitation = False

month = “October”
day = ”1”
weather_elements = [”air_pressure”, “humidity”]
location = “Washington”
precipitation = True

  - 테스트 결과

1번 Test

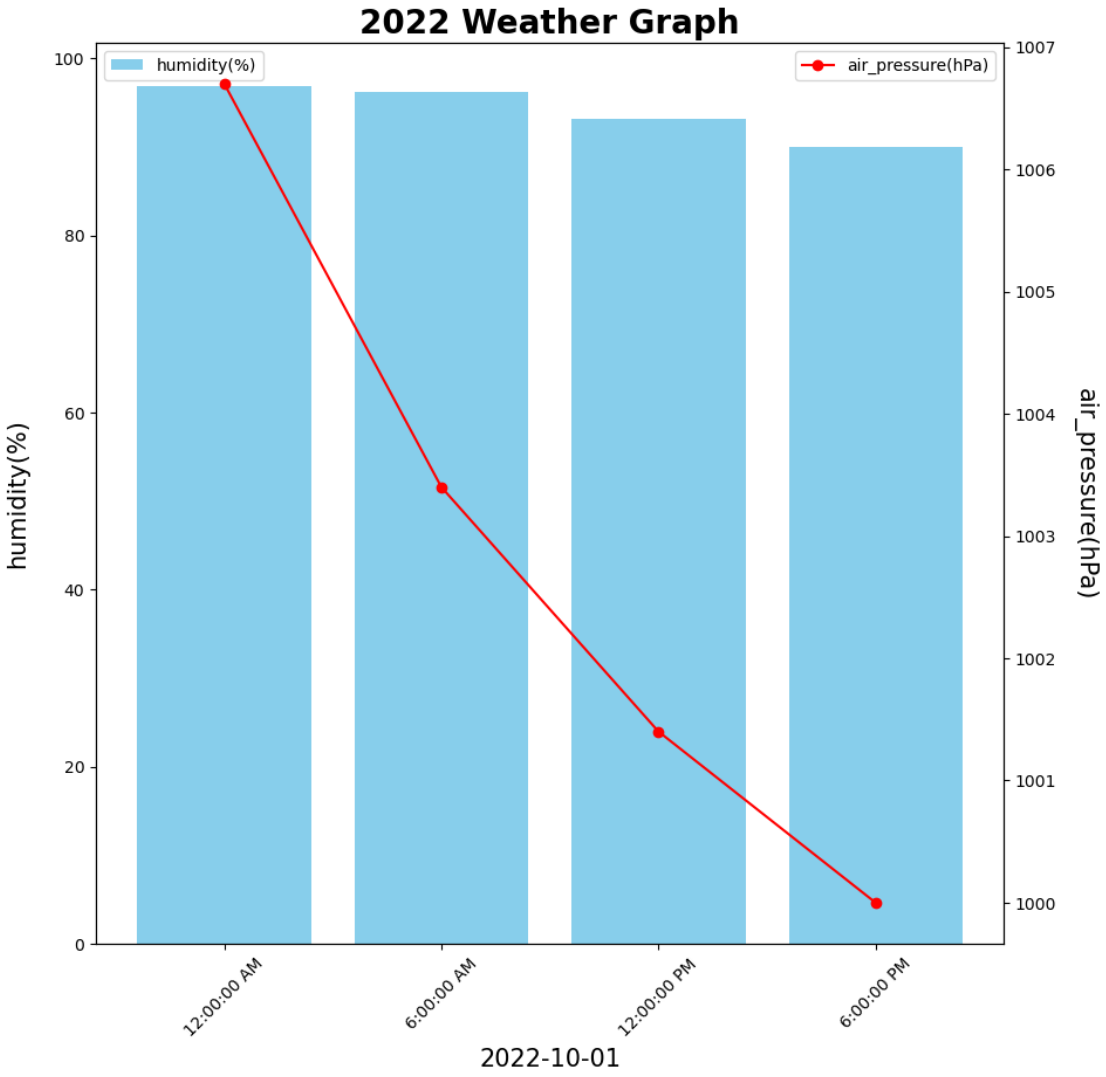
[	location	date	time	temperature(° C)	wind(m/s)
219	Seoul	2022-01-11	12:00:00 AM	-9.3	6.0
220	Seoul	2022-01-11	1:00:00 AM	-8.5	7.0
221	Seoul	2022-01-11	2:00:00 AM	-7.6	8.0
222	Seoul	2022-01-11	3:00:00 AM	-7.0	11.0
223	Seoul	2022-01-11	4:00:00 AM	-5.9	9.0
224	Seoul	2022-01-11	5:00:00 AM	-5.4	9.0
225	Seoul	2022-01-11	6:00:00 AM	-4.9	8.0
226	Seoul	2022-01-11	7:00:00 AM	-4.8	7.0
227	Seoul	2022-01-11	8:00:00 AM	-5.5	6.0
228	Seoul	2022-01-11	9:00:00 AM	-6.7	7.0
229	Seoul	2022-01-11	10:00:00 AM	-7.5	6.0
230	Seoul	2022-01-11	11:00:00 AM	-8.3	6.0
231	Seoul	2022-01-11	12:00:00 PM	-9.0	6.0
232	Seoul	2022-01-11	1:00:00 PM	-9.6	5.0
233	Seoul	2022-01-11	2:00:00 PM	-10.0	6.0
234	Seoul	2022-01-11	3:00:00 PM	-10.2	5.0
235	Seoul	2022-01-11	4:00:00 PM	-10.7	3.0
236	Seoul	2022-01-11	5:00:00 PM	-11.0	1.0
237	Seoul	2022-01-11	6:00:00 PM	-11.3	2.0
238	Seoul	2022-01-11	7:00:00 PM	-11.3	3.0
239	Seoul	2022-01-11	8:00:00 PM	-11.1	4.0
240	Seoul	2022-01-11	9:00:00 PM	-11.0	5.0
241	Seoul	2022-01-11	10:00:00 PM	-11.2	3.0
242	Seoul	2022-01-11	11:00:00 PM	-11.2	3.0,



2번 Test

```
[       location        date        time  air_pressure(hPa)  humidity(%)
1077  Washington  2022-10-01  12:00:00 AM             1006.7         96.9
1078  Washington  2022-10-01   6:00:00 AM             1003.4         96.2
1079  Washington  2022-10-01  12:00:00 PM             1001.4         93.1
1080  Washington  2022-10-01   6:00:00 PM             1000.0         90.0

      precipitation(mm)
1077                  1
1078                 16
1079                  4
1080                  1  ,
```



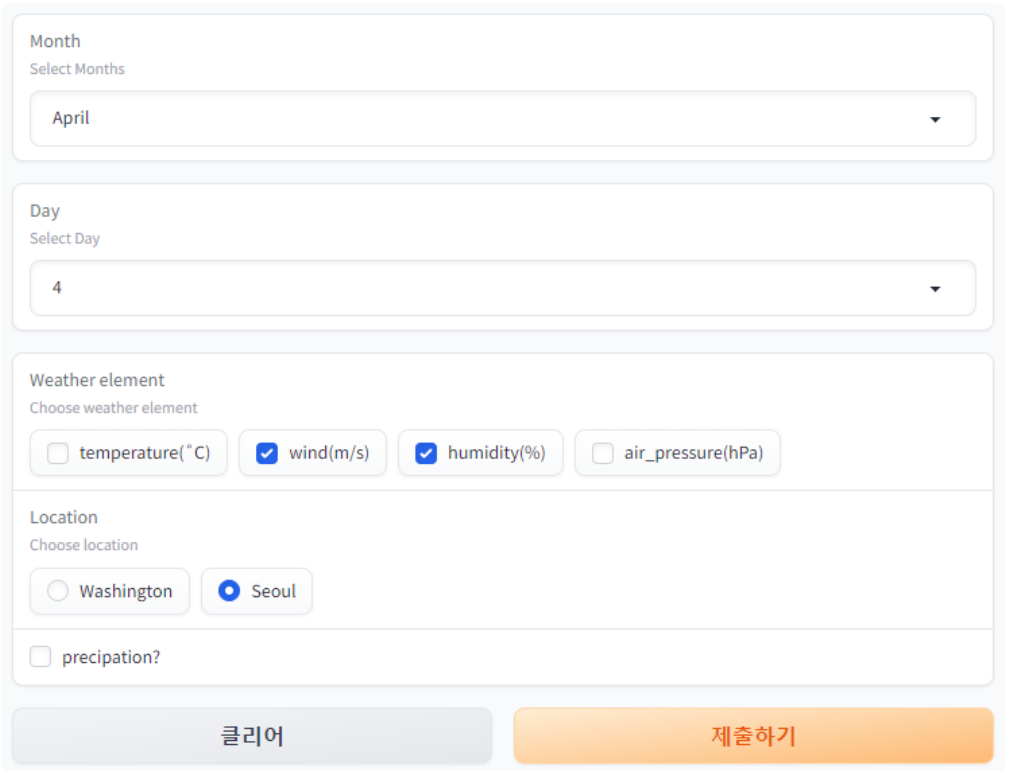
2. 통합 테스트

- **Gradio Demo** 테스트
  Gradio 인터페이스 구성을 한 후 Gradio의 데모의 ui를 이용해 테스트 데이터를 입력하고 결과값이 잘 출력되는지를 확인한다.

  - 테스트 결과

1번 Test

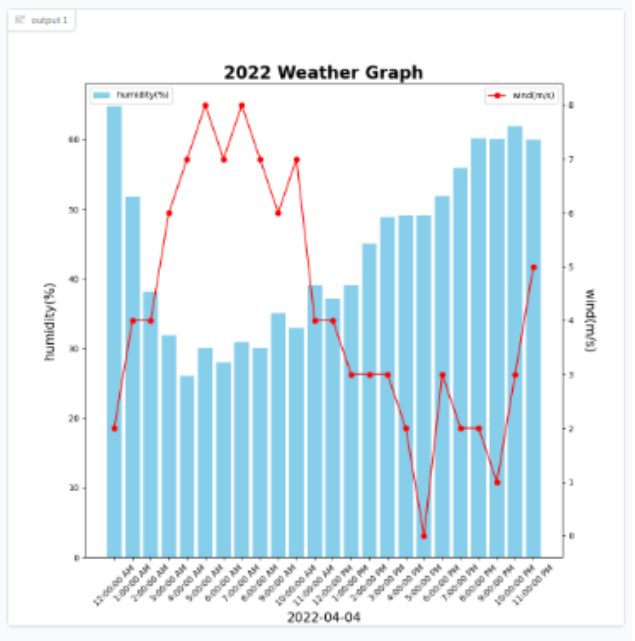
Input



Output

output 0

location	date	time	wind(m/s)	humidity(%)
Seoul	2022-04-04	12:00:00 AM	2	64.8
Seoul	2022-04-04	1:00:00 AM	4	51.8
Seoul	2022-04-04	2:00:00 AM	4	38.2
Seoul	2022-04-04	3:00:00 AM	6	31.9
Seoul	2022-04-04	4:00:00 AM	7	26.1
Seoul	2022-04-04	5:00:00 AM	8	30
Seoul	2022-04-04	6:00:00 AM	7	28
Seoul	2022-04-04	7:00:00 AM	8	30.9
Seoul	2022-04-04	8:00:00 AM	7	30
Seoul	2022-04-04	9:00:00 AM	6	35.1
Seoul	2022-04-04	10:00:00 AM	7	33
Seoul	2022-04-04	11:00:00 AM	4	39.1
Seoul	2022-04-04	12:00:00 PM	4	37.1
Seoul	2022-04-04	1:00:00 PM	3	39.1
Seoul	2022-04-04	2:00:00 PM	3	45.1
Seoul	2022-04-04	3:00:00 PM	3	48.9
Seoul	2022-04-04	4:00:00 PM	2	49.1
Seoul	2022-04-04	5:00:00 PM	0	49.1
Seoul	2022-04-04	6:00:00 PM	3	51.9
Seoul	2022-04-04	7:00:00 PM	2	55.9
Seoul	2022-04-04	8:00:00 PM	2	60.2
Seoul	2022-04-04	9:00:00 PM	1	60.1
Seoul	2022-04-04	10:00:00 PM	3	61.9
Seoul	2022-04-04	11:00:00 PM	5	60



2번 Test

Input

Month

Select Months

June

Day

Select Day

10

Weather element

Choose weather element

temperature(°C)
wind(m/s)
humidity(%)
air_pressure(hPa)

Location

Choose location

Washington
Seoul

precipation?

클리어
제출하기

Output

output 0

location	date	time	temperature(°C)	air_pressure(hPa)	preci
Washington	2022-06-10	12:00:00 AM	23.3	999.4	0
Washington	2022-06-10	6:00:00 AM	14.4	1001.4	0
Washington	2022-06-10	12:00:00 PM	18.9	1002.4	0
Washington	2022-06-10	6:00:00 PM	26.7	1001.7	0

output 1