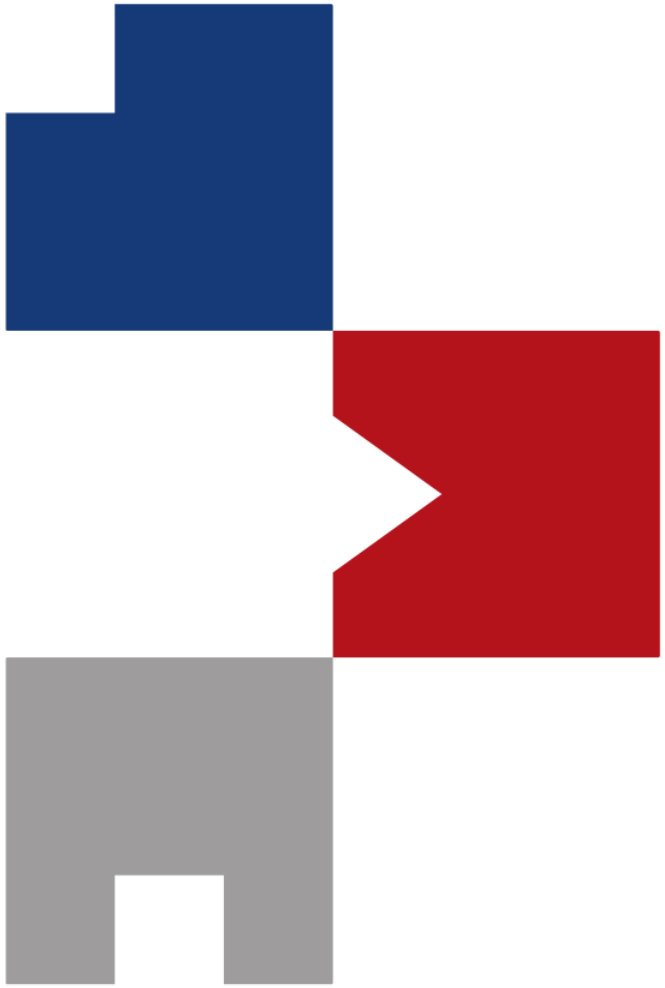

Python: Basic

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Overview

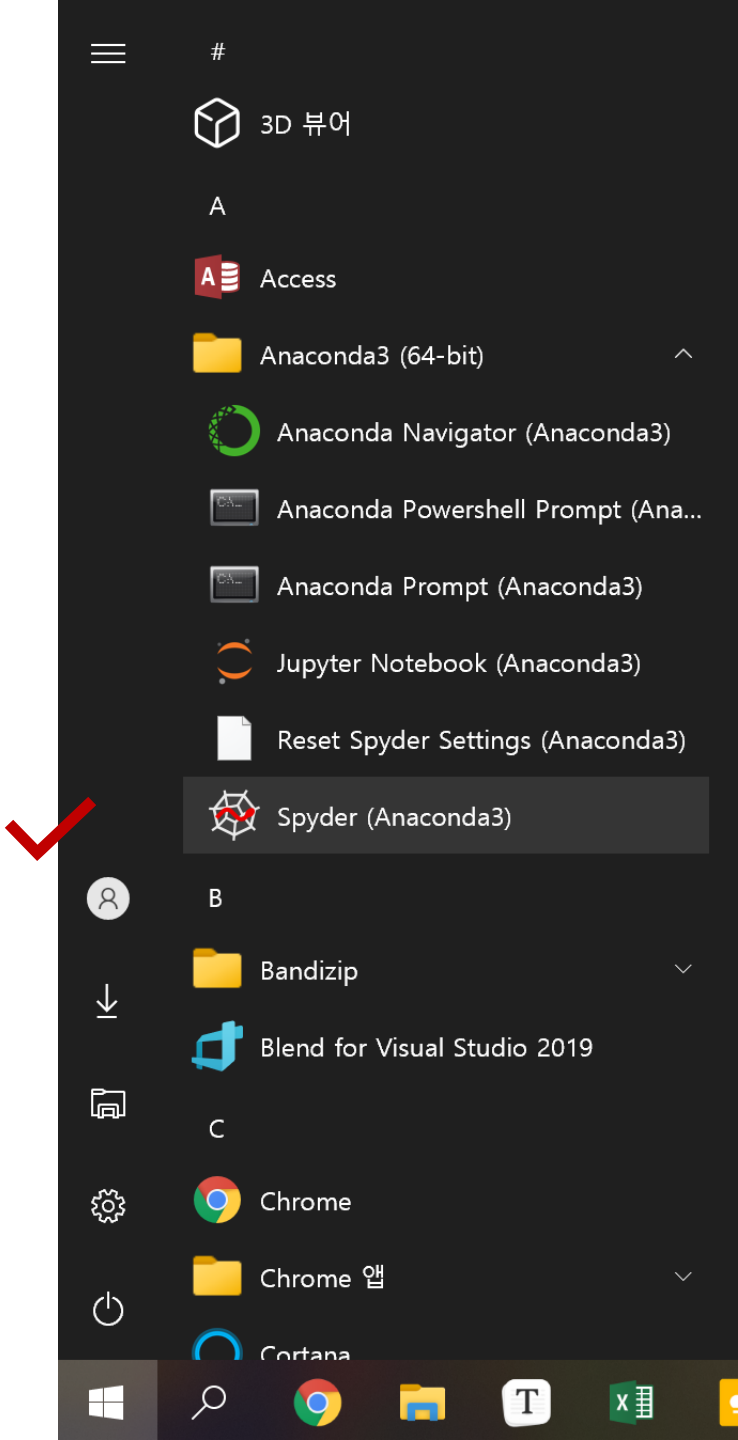
- **Prerequisite**
  - Anacodna (Individual Edition)

- **Practice: Korean COVID-19 New Cases by Region**
  - Motivation
  - Data collection
  - Expected results
  - The given skeleton code

- **Assignment**
  - Mission: Complete the given skeleton code

Prerequisite

- Anaconda (Individual Edition)
  - Download: https://www.anaconda.com/products/individual
  - I will use Spyder IDE included in Anaconda.
  - cf. You can use other editors and Google Colab instead of Anaconda/Spyder.



Practice: Korean COVID-19 New Cases by Region

- Motivation
  - I want to know regional COVID-19 new cases per 1 million people.

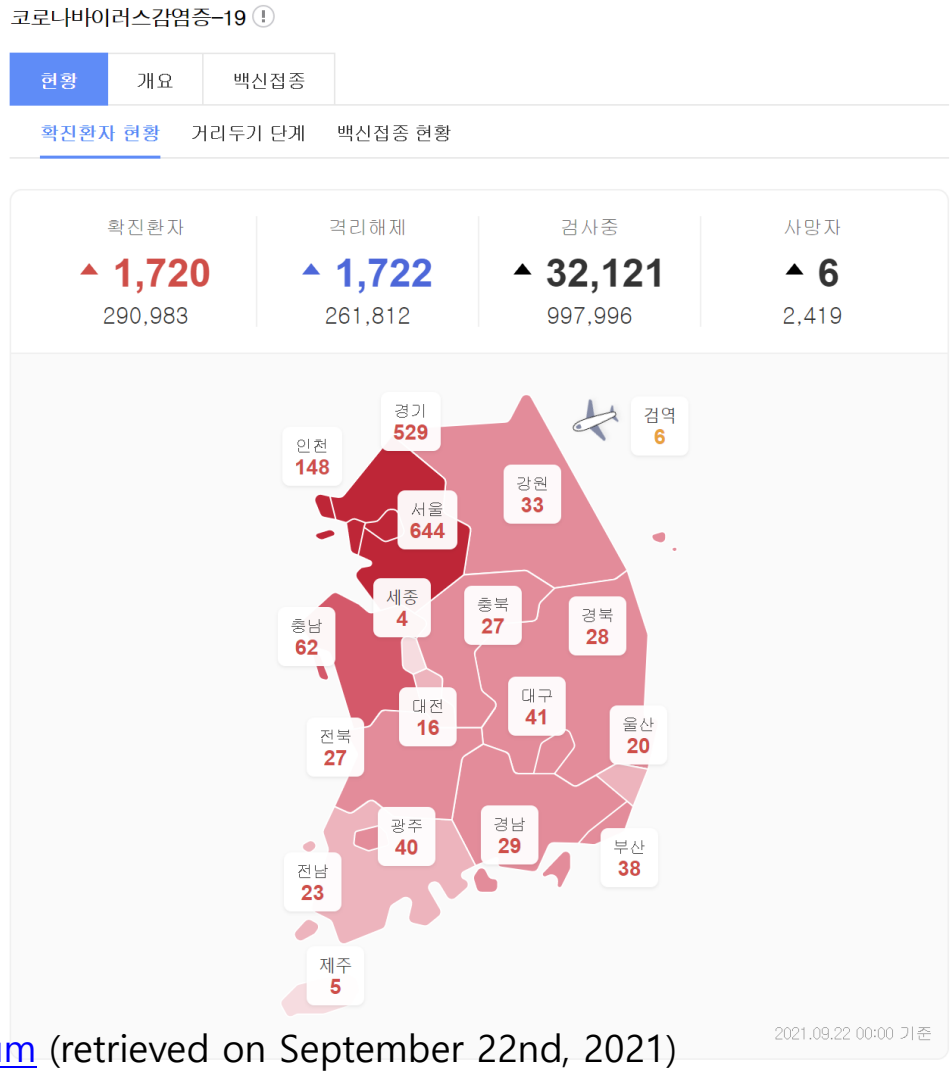


Image: Daum (retrieved on September 22nd, 2021)

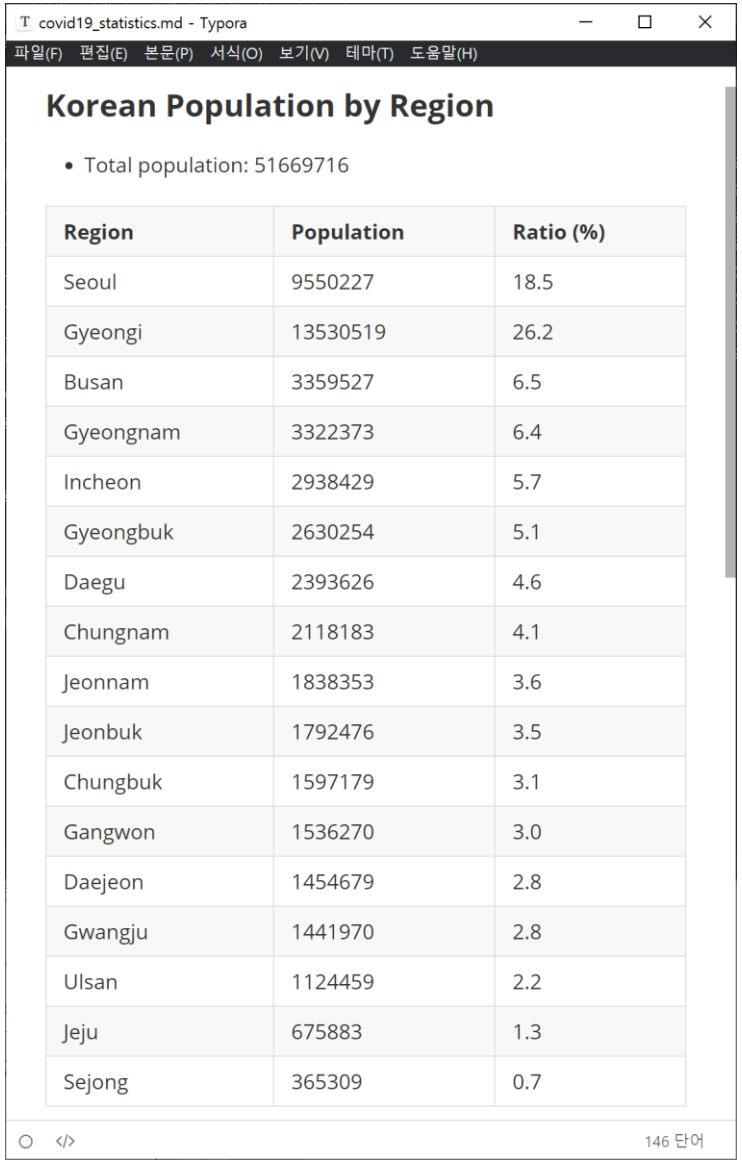
Practice: Korean COVID-19 New Cases by Region

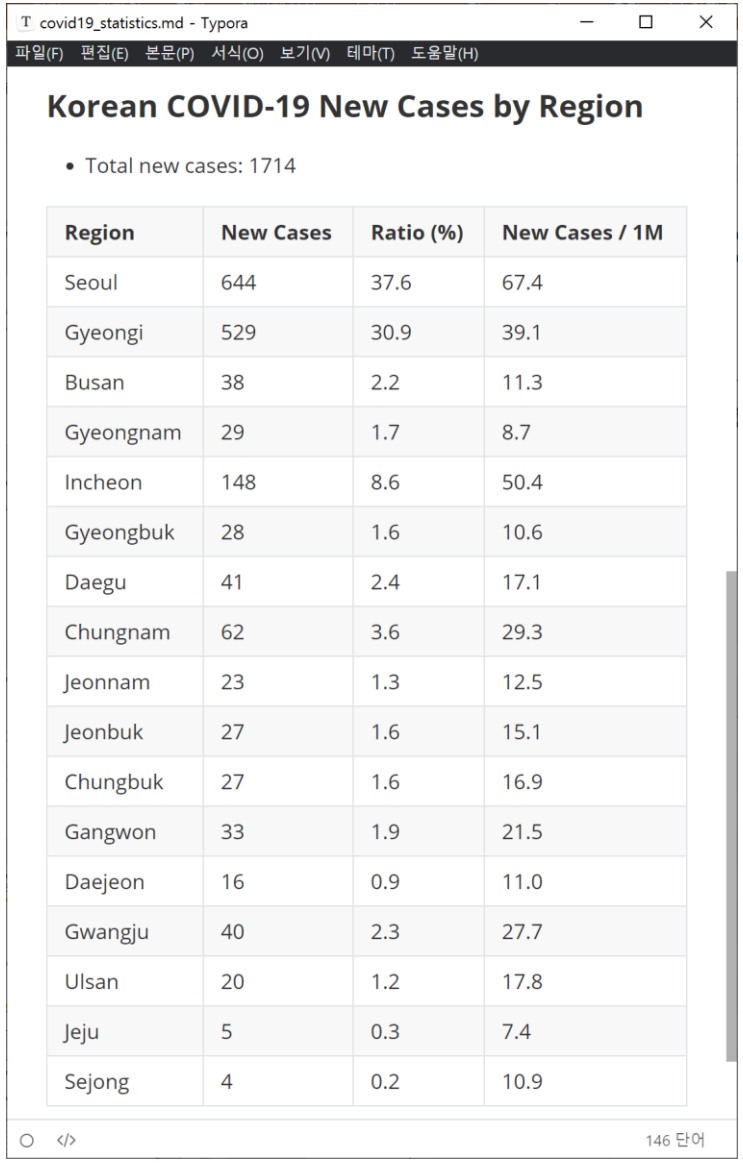
- Data collection
  - Population by region
  - The number of new cases by region

```
regions = ['Seoul', 'Gyeongi', 'Busan', 'Gyeongnam', 'Incheon', 'Gyeongbuk', 'Daegu', 'Chungnam',
           'Jeonnam', 'Jeonbuk', 'Chungbuk', 'Gangwon', 'Daejeon', 'Gwangju', 'Ulsan', 'Jeju',
           'Sejong']
n_people = [9550227, 13530519, 3359527, 3322373, 2938429, 2630254, 2393626, 2118183, 1838353,
            1792476, 1597179, 1536270, 1454679, 1441970, 1124459, 675883, 365309] # 2021-08
n_covid = [644, 529, 38, 29, 148, 28, 41, 62, 23, 27, 27, 33, 16, 40, 20, 5, 4] # 2021-09-21
```

Practice: Korean COVID-19 New Cases by Region

- Expected results (with a Markdown editor)





Practice: Korean COVID-19 New Cases by Region

- The given skeleton code (covid19_statistics_skeleton.py)

```
def normalize_data(n_cases, n_people, scale):
    # TODO: Calculate the number of cases per its population
    norm_cases = []
    for idx, n in enumerate(n_cases):
        norm_cases.append(0)
    return norm_cases

regions  = ['Seoul', ...]
n_people = [9550227, ...] # 2021-08
n_covid  = [    644, ...] # 2021-09-21

sum_people = 0 # TODO: The total number of people
sum_covid  = 0 # TODO: The total number of new cases
norm_covid = normalize_data(n_covid, n_people, 1000000) # The new cases per 1 million people

# Print population by region
print('### Korean Population by Region')
print('* Total population:', sum_people)
print('| Region | Population | Ratio (%) |')
print('| ------ | ---------- | --------- |')
for idx, pop in enumerate(n_people):
    ratio = 0 # TODO: The ratio of new cases to the total
    print('| %s | %d | %.1f |' % (regions[idx], pop, ratio))
print('')

# TODO: Print COVID-19 new cases by region
```

Assignment

- Mission
  - Complete the given skeleton code (`covid19_statistics_skeleton.py`)
  - Submit your code (`covid19_statistics.py`) and its output (`README.md`)

- Condition
  - Please follow the above filename convention.
  - You can start from scratch (without using the given skeleton code).
    - However, you should use the same data shown in the slide 5.
  - You can freely change the given skeleton code if necessary.

- Submission
  - Deadline: **September 29, 2021 23:59** (firm deadline; no extension)
  - Where: e-Class > Assignments
  - Score: Max 10 points