# BigQuery & SQL

[1] ↑
```
import pandas as pd
from google.cloud import bigquery as gcl
from google.cloud import bigquery
from sqlalchemy import create

# to generate ulid from time.ms
from ulid import ULID, hexulid
drlim.mount('/content/drive')

# for plot size
plt.rcParams['figure.figsize'] = (14,7)

%matplotlib inline
%load_ext rpy2.rpy2.ipy2r
```

[2] ↑
```
# setup project
os.environ["GOOGLE_PROJECT"] = "bm-ai1" # work env

%gcloud auth application-default login # authentication
```

[3] ↑
```
# 3.1a1
# connect a bigquery client stanzas
client = bigquery.Client()

# 3.1b1
# query DDM rows
ddm_query = """
    SELECT *
    FROM `bigquery-public-data.new_york.311_service_requests`
    LIMIT 5
"""

# function for the df report
def run_query(query):
    query_job = client.query(query)
    return query_job.result()

# function to convert results function
output = get_results(ddm_query)

# output first row
ddl_rows = list(iter(ddm_for_ddm_to_output))
first_row = ddl_rows[0]
print(first_row)
```

```
(311A2CEB,
 datetime.date(2015, 7, 9, 12, 45, 11)rdfromtime.timezone.utc),
 datetime.date(2015, 7, 9, 15, 7, 11)rdfromtime.timezone.utc),
 'Open',
 'Department of Environmental Protection',
 'DEP',
 'Water System',
 'Water Conservation',
 'Other',
 'Other',
 'Other
```