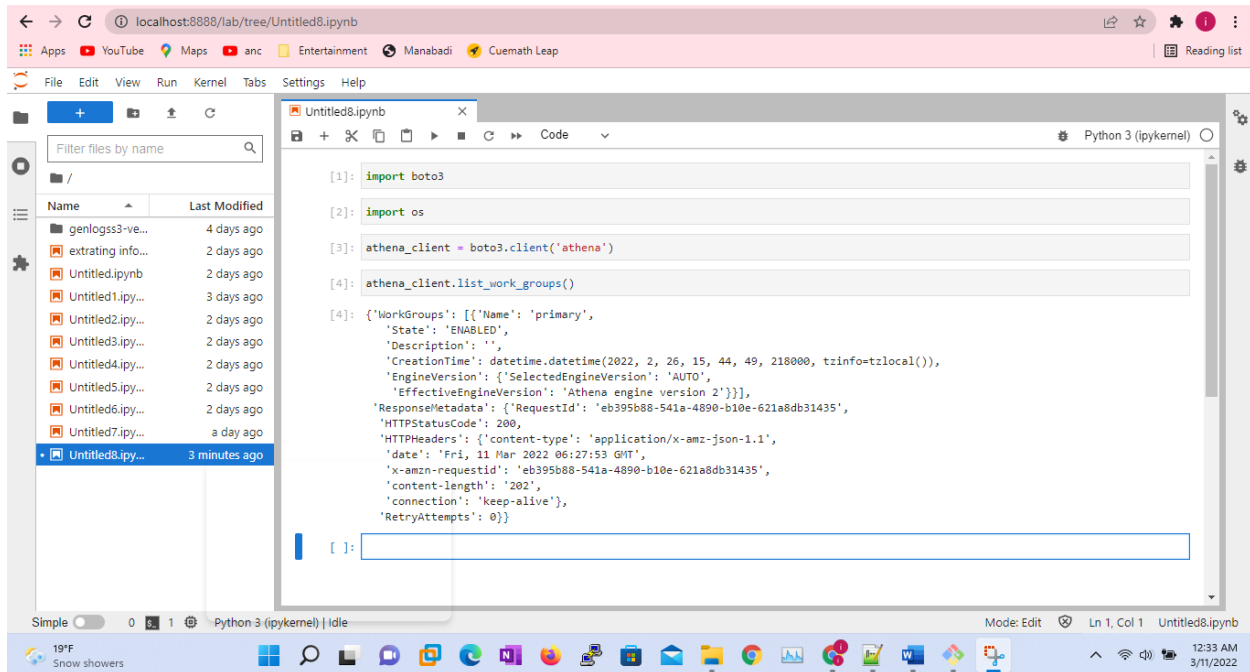


Athena using Python boto3

We need to create virtual environment under that need to install boto3, python, Jupyter lab

In the jupyter lab, need to set the client as 'athena'



Listing the data:

```
[12]: databases = athena_client.list_databases(CatalogName='AwsDataCatalog')
```

```
[13]: type(databases['DatabaseList'])
```

```
[13]: list
```

```
[17]: [database['Name'] for database in databases['DatabaseList']]
```

```
[17]: ['default', 'myretail', 'retail_db']
```

```
[ ]:
```

List the tables metadata

```
Untitled8.ipynb
[ ]: athena_client.list_table_metadata(
    CatalogName='AwsDataCatalog',
    DatabaseName='retail_db'
)

[24]: tables=athena_client.list_table_metadata(
    CatalogName='AwsDataCatalog',
    DatabaseName='retail_db'
)

[25]: [table['Name'] for table in tables['TableMetadataList']]

[25]: ['categories', 'customers', 'departments', 'order_items', 'orders', 'products']
```

Get the tables names

```
[ ]: athena_client.get_table_metadata(
    CatalogName='AwsDataCatalog',
    DatabaseName='retail_db',
    TableName='orders'
)

[27]: table_metadata = athena_client.get_table_metadata(
    CatalogName='AwsDataCatalog',
    DatabaseName='retail_db',
    TableName='orders'
)

[28]: table_metadata

[28]: {'TableMetadata': {'Name': 'orders',
    'CreateTime': datetime.datetime(2022, 3, 9, 16, 16, 43, tzinfo=tzlocal()),
    'LastAccessTime': datetime.datetime(2022, 3, 9, 16, 16, 43, tzinfo=tzlocal()),
    'TableType': 'EXTERNAL_TABLE',
    'Columns': [{'Name': 'order_id', 'Type': 'bigint'},
    {'Name': 'order_date', 'Type': 'string'},
    {'Name': 'order_customer_id', 'Type': 'bigint'},
    {'Name': 'order_status', 'Type': 'string'}],
    'PartitionKeys': [],
    'Parameters': {'CrawlerSchemaDeserializerVersion': '1.0',
```

Run Amazon Athena Queries using Python boto3

```
Untitled8.ipynb Python 3 (ipykernel)

[6]: athena_client.list_work_groups()

[6]: {'WorkGroups': [{'Name': 'primary',
  'State': 'ENABLED',
  'Description': '',
  'CreationTime': datetime.datetime(2022, 2, 26, 15, 44, 49, 218000, tzinfo=tzlocal()),
  'EngineVersion': {'SelectedEngineVersion': 'AUTO',
    'EffectiveEngineVersion': 'Athena engine version 2'}}],
  'ResponseMetadata': {'RequestId': '6057de99-7cfb-4e76-9796-1805f5d29175',
    'HTTPStatusCode': 200,
    'HTTPHeaders': {'content-type': 'application/x-amz-json-1.1',
      'date': 'Fri, 11 Mar 2022 20:31:06 GMT',
      'x-amzn-requestid': '6057de99-7cfb-4e76-9796-1805f5d29175',
      'content-length': '202',
      'connection': 'keep-alive'},
    'RetryAttempts': 0}}

[ ]: athena_client.get_work_group(WorkGroup='primary')

[8]: query_execution = athena_client.start_query_execution(
  QueryString='SELECT count(*) FROM myretail.orders'
)

[11]: query_execution

[11]: {'QueryExecutionId': 'c45d4168-ceb2-4c0b-b411-0ed005c5f1c0',
  'ResponseMetadata': {'RequestId': '1baa2e84-eb5e-4bdb-982f-7d473da39e5b',
    'HTTPStatusCode': 200,
```

```
Untitled8.ipynb Python 3 (ipykernel)

[10]: athena_client.get_query_execution(
  QueryExecutionId=query_execution['QueryExecutionId']
)

[10]: {'QueryExecution': {'QueryExecutionId': 'c45d4168-ceb2-4c0b-b411-0ed005c5f1c0',
  'Query': 'SELECT count(*) FROM myretail.orders',
  'StatementType': 'DML',
  'ResultConfiguration': {'OutputLocation': 's3://itvathena1/wgprimary1/c45d4168-ceb2-4c0b-b411-0ed005c5f1c0.c
sv'},
  'QueryExecutionContext': {},
  'Status': {'State': 'FAILED',
    'StateChangeReason': 'SYNTAX_ERROR: line 1:22: Table awsdatacatalog.myretail.orders does not exist',
    'SubmissionDateTime': datetime.datetime(2022, 3, 11, 14, 32, 49, 629000, tzinfo=tzlocal()),
    'CompletionDateTime': datetime.datetime(2022, 3, 11, 14, 32, 50, 18000, tzinfo=tzlocal()),
    'AthenaError': {'ErrorCategory': 2, 'ErrorType': 1006}},
  'Statistics': {'EngineExecutionTimeInMillis': 240,
    'DataScannedInBytes': 0,
    'TotalExecutionTimeInMillis': 389,
    'QueryQueueTimeInMillis': 115,
    'ServiceProcessingTimeInMillis': 34},
  'WorkGroup': 'primary',
  'EngineVersion': {'SelectedEngineVersion': 'AUTO',
    'EffectiveEngineVersion': 'Athena engine version 2'}},
  'ResponseMetadata': {'RequestId': '7e76ea1c-6923-44bd-9e73-0a623aa54531',
    'HTTPStatusCode': 200,
    'HTTPHeaders': {'content-type': 'application/x-amz-json-1.1',
      'date': 'Fri, 11 Mar 2022 20:33:25 GMT',
      'x-amzn-requestid': '7e76ea1c-6923-44bd-9e73-0a623aa54531',
      'content-length': '1650'

Mode: Command Ln 3, Col 2 Untitled8.ipynb
2:37 PM 3/11/2022
```