Jill access example

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1 pyMAP.Jill SQL database example

Just a basic example notebook showing how to initialize access to jill and how to execute a sql query

to access jill you need 1. to be on the unh network (on campus or on vpn) 2. initialize jill through pymap.jill() 3. input jill login information (also your unh login information) when prompted

1.0.1 pymap.jill

- initializing jill issues an ssh connection with sql port forwarding then generates and connects the sqlalchemy engine
- querys to the sql database can be issued using sql syntax with the jill.query command
- quiery results are output to pandas dataframe

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[1]:
```
import pandas as pd
import pyMAP as pm
```

Initalize connection controller for jill

[3]:
```
jill = pm.jill()
```

```
Jill Username: aa1064
........
```

show the available tables

[4]:
```
jill.tables.keys()
```

[4]:
```
dict_keys(['ILO_EM_DE', 'ILO_EM_IFB', 'ILO_EM_RAW_CNT', 'ILO_EM_TOF_BD',
'ingest_log'])
```

query the database using sql syntax

[5]:
```
jill.query('select * from ingest_log')
```

[5]:
```
                                                 name  \
0    EMV1_FLP_MCP_Gain_Curve_20221115T190151_202211…
1    EMV1_FLP_MCP_Gain_Curve_20221115T190212_ILO_RA…
```

```
2            EMV1_FLP_MCP_Ramp_20221116_ILO_RAW_DE.csv
3            EMV1_FLP_PAC_ramp_20221116_ILO_RAW_DE.csv
4         EMV1_FLP_TOF_Spectra_20221116_ILO_RAW_DE.csv
..                                                  …
949  EMV2.2_PSPL_ramp2-20230129_ILO_RAW_CNT_2023012…
950  EMV2.2_PSPL_ramp3-20230129_ILO_RAW_CNT_2023012…
951  EMV2.2_PSPL_ramp4-20230129_ILO_RAW_CNT_2023012…
952  EMV2.2_PSPL_ramp5-20230129_ILO_RAW_CNT_2023012…
953  EMV2.2_PSPL_ramp6-20230129_ILO_RAW_CNT_2023012…

                                          file_path   file_size  \
0    C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…  317.754611
1    C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…  345.486498
2    C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…  137.496923
3    C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…  166.036635
4    C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…   65.383010
..                                                 …         …
949  C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…    0.048771
950  C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…    0.035005
951  C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…    0.029547
952  C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…    0.036190
953  C:\Users\Jonny Woof\Box\IMAP-Lo-box (1)\Scienc…    0.048657

           dtype             created       last_modified        to_table  \
0     ILO_RAW_DE 2022-11-15 21:47:33 2022-11-15 21:18:32       ILO_EM_DE
1     ILO_RAW_DE 2022-11-15 21:56:47 2022-11-15 21:54:35       ILO_EM_DE
2     ILO_RAW_DE 2022-11-17 07:53:38 2022-11-17 07:31:34       ILO_EM_DE
3     ILO_RAW_DE 2022-11-17 07:53:38 2022-11-17 07:27:53       ILO_EM_DE
4     ILO_RAW_DE 2022-11-17 07:53:37 2022-11-17 07:33:14       ILO_EM_DE
..           …                   …                   …           …
949  ILO_RAW_CNT 2023-01-29 09:50:39 2023-01-29 09:50:39  ILO_EM_RAW_CNT
950  ILO_RAW_CNT 2023-01-29 10:14:04 2023-01-29 10:14:04  ILO_EM_RAW_CNT
951  ILO_RAW_CNT 2023-01-29 10:29:38 2023-01-29 10:29:38  ILO_EM_RAW_CNT
952  ILO_RAW_CNT 2023-01-29 10:47:02 2023-01-29 10:47:02  ILO_EM_RAW_CNT
953  ILO_RAW_CNT 2023-01-29 11:03:56 2023-01-29 11:03:56  ILO_EM_RAW_CNT

             ingest_time
0    2023-03-09 13:55:30
1    2023-03-09 13:55:30
2    2023-03-09 13:55:30
3    2023-03-09 13:55:30
4    2023-03-09 13:55:30
..                   …
949  2023-03-09 16:45:05
950  2023-03-09 16:45:05
951  2023-03-09 16:45:05
952  2023-03-09 16:45:05
```

```
953 2023-03-09 16:45:05

[954 rows x 8 columns]
```

Query IFB data over time range

[6]:
```
jill.query('select * from ILO_EM_IFB where dateTime between "2022-12-22" and␣
↪"2022-12-24"')
```

[6]:

```
                dateTime    SHCOARSE  IF_COMMAND_ERROR  IF_TRANSMITTING  \
0    2022-12-22 15:55:13  2556904161                 0                0
1    2022-12-22 15:55:15  2556904163                 0                0
2    2022-12-22 15:55:18  2556904166                 0                0
3    2022-12-22 15:55:20  2556904168                 0                0
4    2022-12-22 15:55:23  2556904171                 0                0
…                    …           …                 …              …
9762 2022-12-22 22:41:58  2556928566                 0                0
9763 2022-12-22 22:42:01  2556928569                 0                0
9764 2022-12-22 22:42:03  2556928571                 0                0
9765 2022-12-22 22:42:06  2556928574                 0                0
9766 2022-12-22 22:42:08  2556928576                 0                0

      IF_READY  IF_STATE  COMMAND_ADDRESS  COMMAND_DATA  \
0            1         1                0             0
1            1         1                0             0
2            1         1                0             0
3            1         1                0             0
4            1         1                0             0
…          …         …                …             …
9762         1         1                0             0
9763         1         1                0             0
9764         1         1                0             0
9765         1         1                0             0
9766         1         1                0             0

      REG_IF_STATUS_PKT_RCVD  REG_IF_STATUS_TO_ERR  …  V2P5_VM  STAR_MON  \
0                          0                     0  …      0.0       0.0
1                          0                     0  …      0.0       0.0
2                          0                     0  …      0.0       0.0
3                          0                     0  …      0.0       0.0
4                          0                     0  …      0.0       0.0
…                        …                     …  …      …         …
9762                       1                     0  …      0.0       0.0
9763                       1                     0  …      0.0       0.0
9764                       1                     0  …      0.0       0.0
9765                       1                     0  …      0.0       0.0
9766                       1                     0  …      0.0       0.0
```

```
      PAC_VSET_MON  PAC_OCP_MON  MCP_VSET_MON  MCP_OCP_MON  REG_PEEK  \
0              0.0          0.0           0.0          0.0         0
1              0.0          0.0           0.0          0.0         0
2              0.0          0.0           0.0          0.0         0
3              0.0          0.0           0.0          0.0         0
4              0.0          0.0           0.0          0.0         0
…              …            …             …            …           …
9762           0.0          0.0           0.0          0.0         0
9763           0.0          0.0           0.0          0.0         0
9764           0.0          0.0           0.0          0.0         0
9765           0.0          0.0           0.0          0.0         0
9766           0.0          0.0           0.0          0.0         0

      PAC_VM_volt                                              fRAW   tag
0        0.000000  EMv1_t004_power_on_ILO_IFB_20221222T155528_.csv  T004
1        0.000000  EMv1_t004_power_on_ILO_IFB_20221222T155528_.csv  T004
2        0.000000  EMv1_t004_power_on_ILO_IFB_20221222T155528_.csv  T004
3        0.000000  EMv1_t004_power_on_ILO_IFB_20221222T155528_.csv  T004
4        0.000000  EMv1_t004_power_on_ILO_IFB_20221222T155528_.csv  T004
…           …                                                  …    …
9762     9.027097      EMv1_t004_r011_ILO_IFB_20221222T220919_.csv  T004
9763     0.000000      EMv1_t004_r011_ILO_IFB_20221222T220919_.csv  T004
9764     9.027097      EMv1_t004_r011_ILO_IFB_20221222T220919_.csv  T004
9765     9.027097      EMv1_t004_r011_ILO_IFB_20221222T220919_.csv  T004
9766     9.027097      EMv1_t004_r011_ILO_IFB_20221222T220919_.csv  T004

[9767 rows x 81 columns]

2023-03-21 08:08:33,756| ERROR   | Socket exception: An existing connection was
forcibly closed by the remote host (10054)
2023-03-21 08:08:33,782| ERROR   | Socket exception: An existing connection was
forcibly closed by the remote host (10054)
```

[ ]: