

# IS-664 Database Programming Fall 2022

Environment

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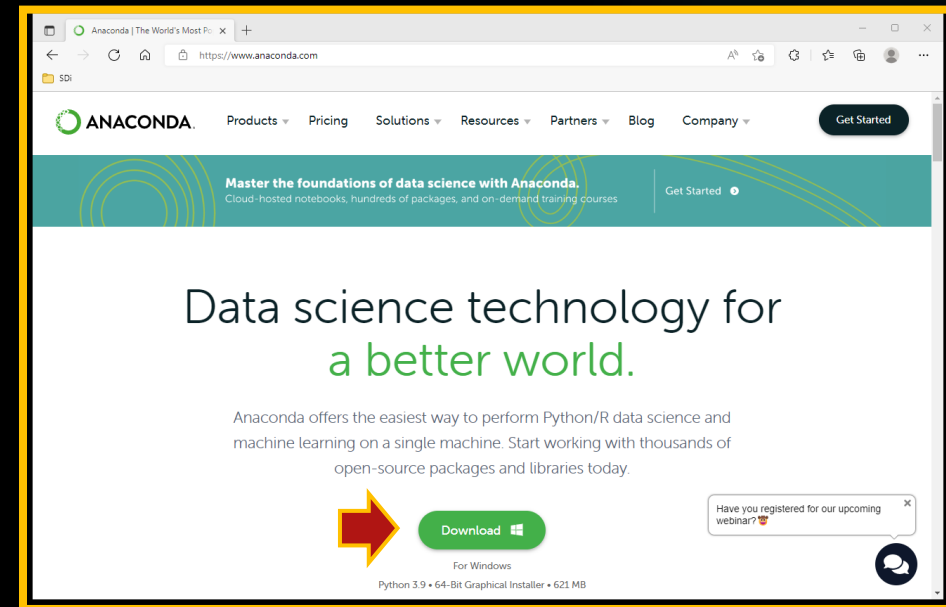
## Data Analysis Environment Preparation

USE OF JUPYTER LAB WITH MYSQL

Professor HG Locklear

- ▶ For the next phase of our Database Programming, we will be introducing the **Jupyter Lab** Programming environment.
- ▶ Go here to install the **Anaconda Navigator** to have access to the Jupyter Lab application.

▶ <https://www.anaconda.com/>

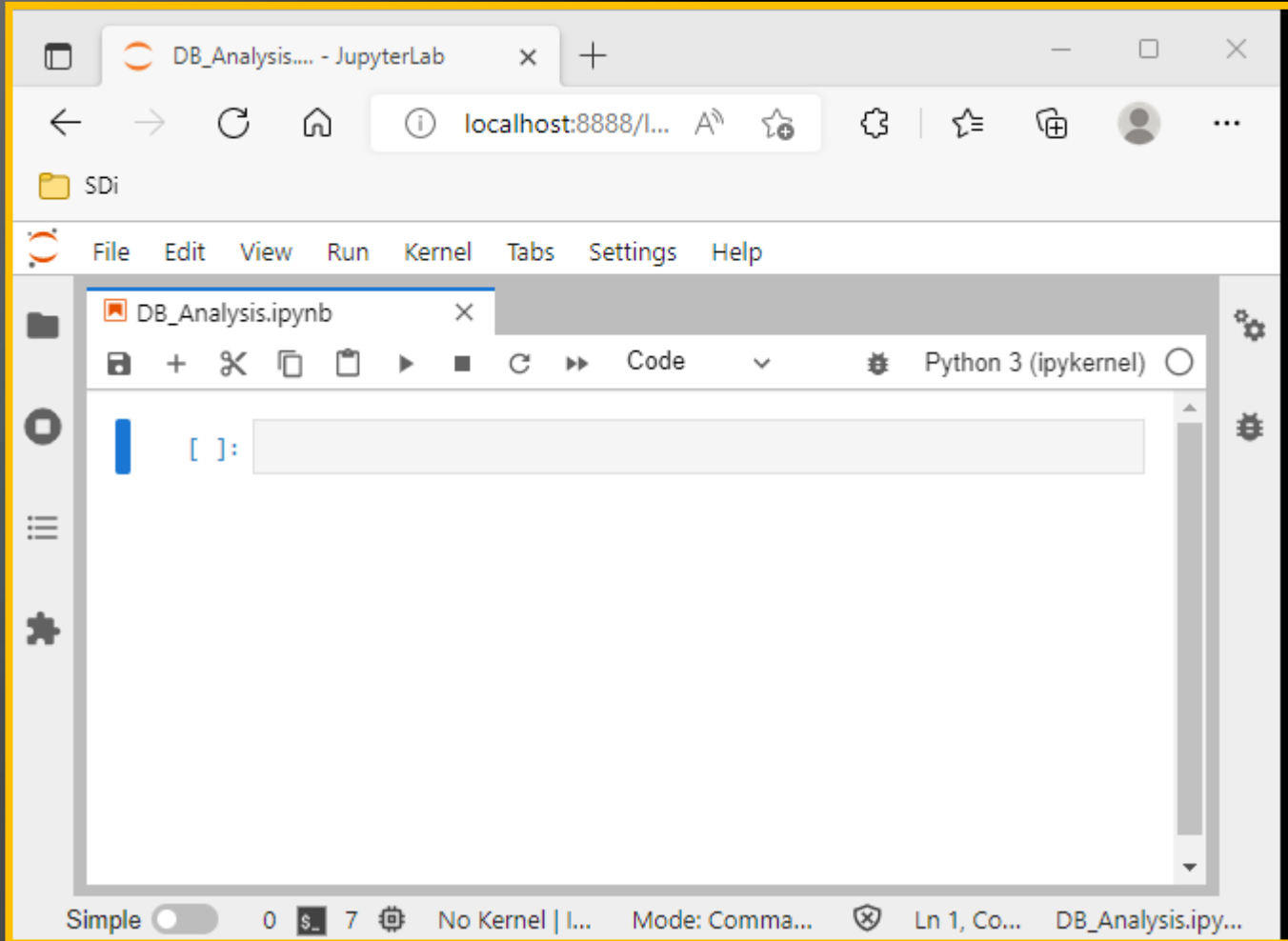


- ▶ Once you have installed Anaconda, follow the instruction to prepare your environment and verify that it is working properly.

# General

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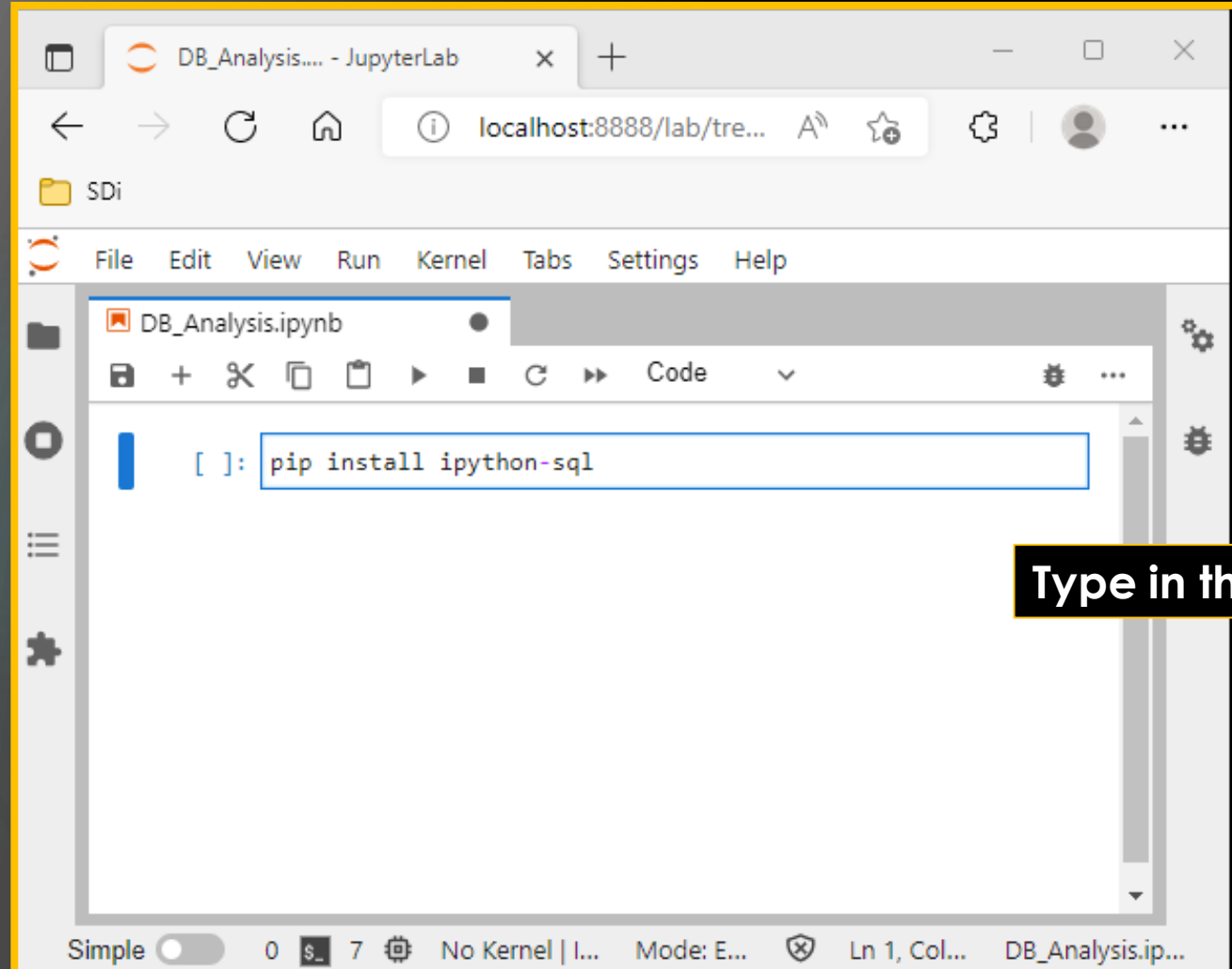
## Create a new notebook



# General

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## Install `ipython-sql` package

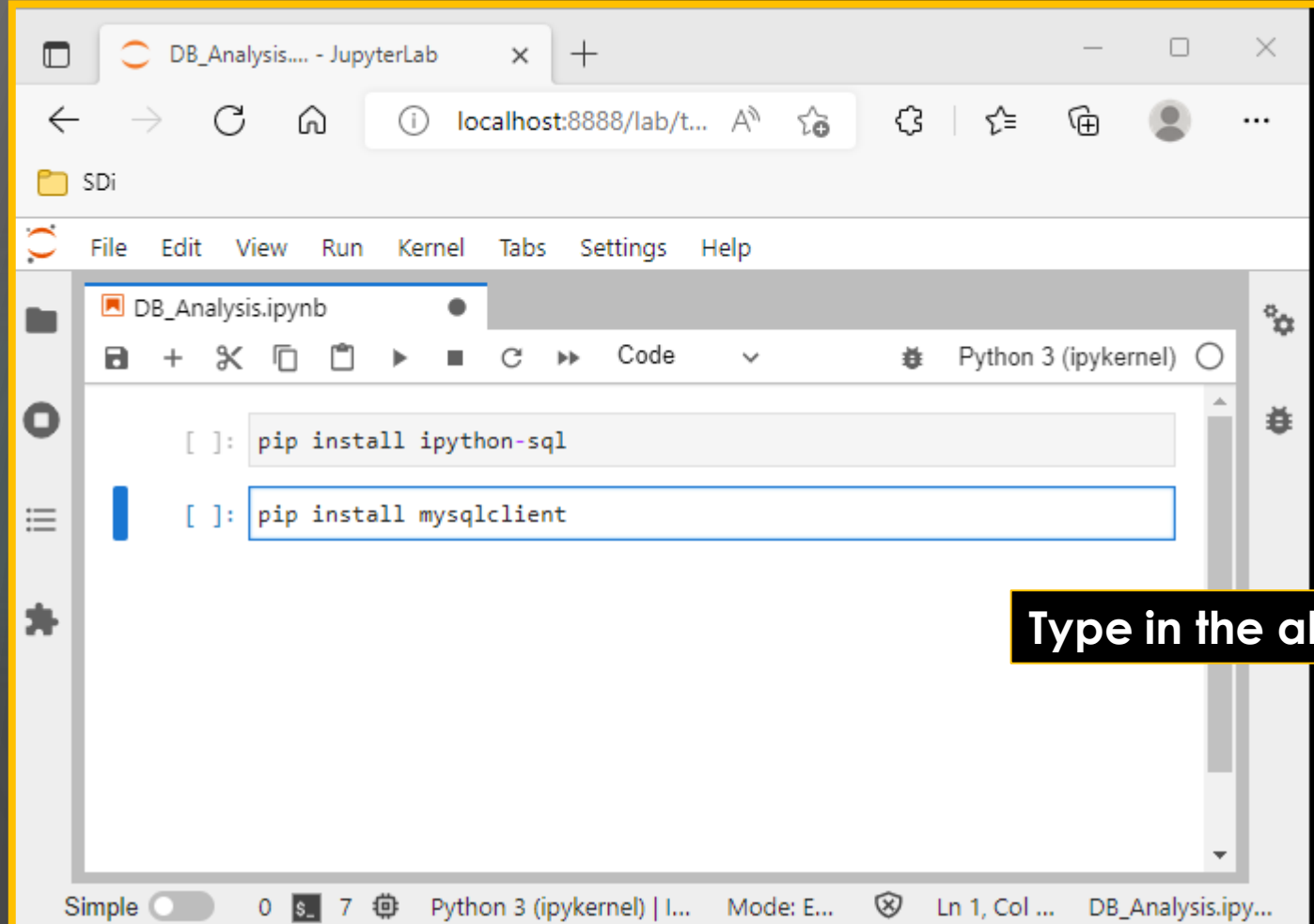


Type in the above command and then press **SHIFT\_ENTER**

# General

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## Install **mysqlclient** package



The screenshot shows a JupyterLab window titled "DB\_Analysis.... - JupyterLab". The browser address bar shows "localhost:8888/lab/t...". The file browser on the left shows a folder named "SDi". The main editor area displays a Jupyter Notebook with two code cells. The first cell contains the command `pip install ipython-sql`. The second cell contains the command `pip install mysqlclient`, which is currently selected. The status bar at the bottom indicates "Simple" mode, "0 s. 7" execution time, "Python 3 (ipykernel)" kernel, "Mode: E...", and "Ln 1, Col ..." cursor position.

```
[ ]: pip install ipython-sql
```

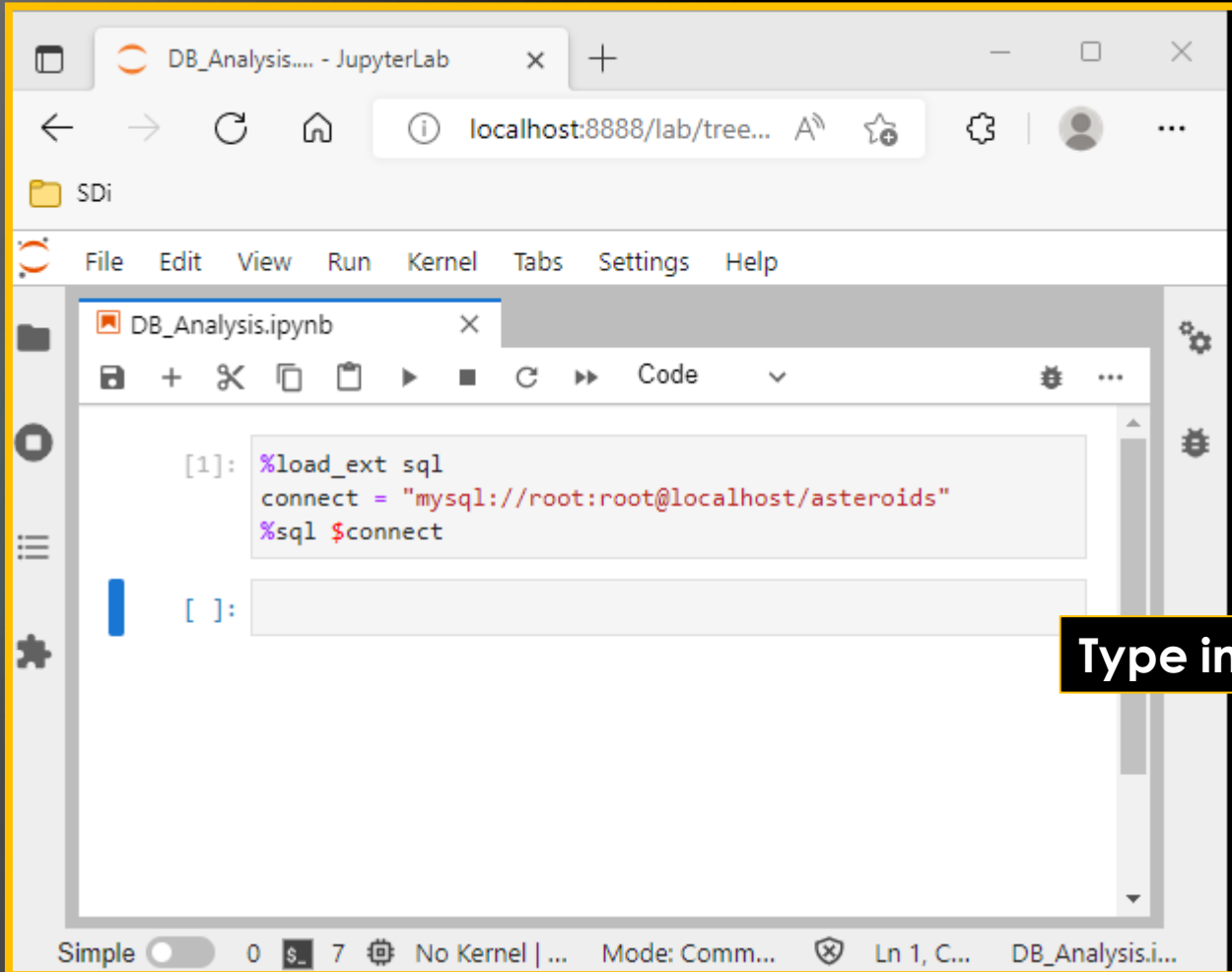
```
[ ]: pip install mysqlclient
```

Type in the above command and then press **SHIFT\_ENTER**

# General

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Connect to the asteroids database by using executing this code



The screenshot shows a JupyterLab window titled "DB\_Analysis.... - JupyterLab". The browser address bar shows "localhost:8888/lab/tree...". The file explorer on the left shows a folder named "SDi". The main code editor displays a code cell with the following content:

```
[1]: %load_ext sql
connect = "mysql://root:root@localhost/asteroids"
%sql $connect
```

Below the code cell, there is an empty input field for the next cell, indicated by "[ ]:". The status bar at the bottom shows "Simple", "0", "7", "No Kernel | ...", "Mode: Comm...", "Ln 1, C...", and "DB\_Analysis.i...".

Type in the above code and then press **SHIFT\_ENTER**

# General

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## Execute a query

DB\_Analysis.ipynb

```
[1]: %load_ext sql
connect = "mysql://root:root@localhost/asteroids"
%sql $connect
```

```
[2]: %%sql
select * from registry limit 10;
```

\* mysql://root:\*\*\*@localhost/asteroids  
10 rows affected.

| Designation | AType      | Country | DDate      |
|-------------|------------|---------|------------|
| C-a1872-l   | Carboneous | US      | 2007-09-02 |
| C-a2151-m   | Carboneous | UK      | 1994-08-08 |
| C-a2440-j   | Carboneous | UK      | 1991-10-27 |
| C-a279-j    | Carboneous | UK      | 2015-01-08 |
| C-a39-l     | Carboneous | UK      | 2013-08-19 |
| C-b1038-p   | Carboneous | UK      | 2001-01-12 |
| C-b380-k    | Carboneous | RUSSIA  | 1995-10-18 |
| C-d5011-l   | Carboneous | RUSSIA  | 2010-10-23 |
| C-e162-m    | Carboneous | RUSSIA  | 2007-10-22 |
| C-e1734-j   | Carboneous | RUSSIA  | 1991-07-17 |

```
%%sql
select * from registry limit 10;
```

Type in the above code and then press **SHIFT\_ENTER**