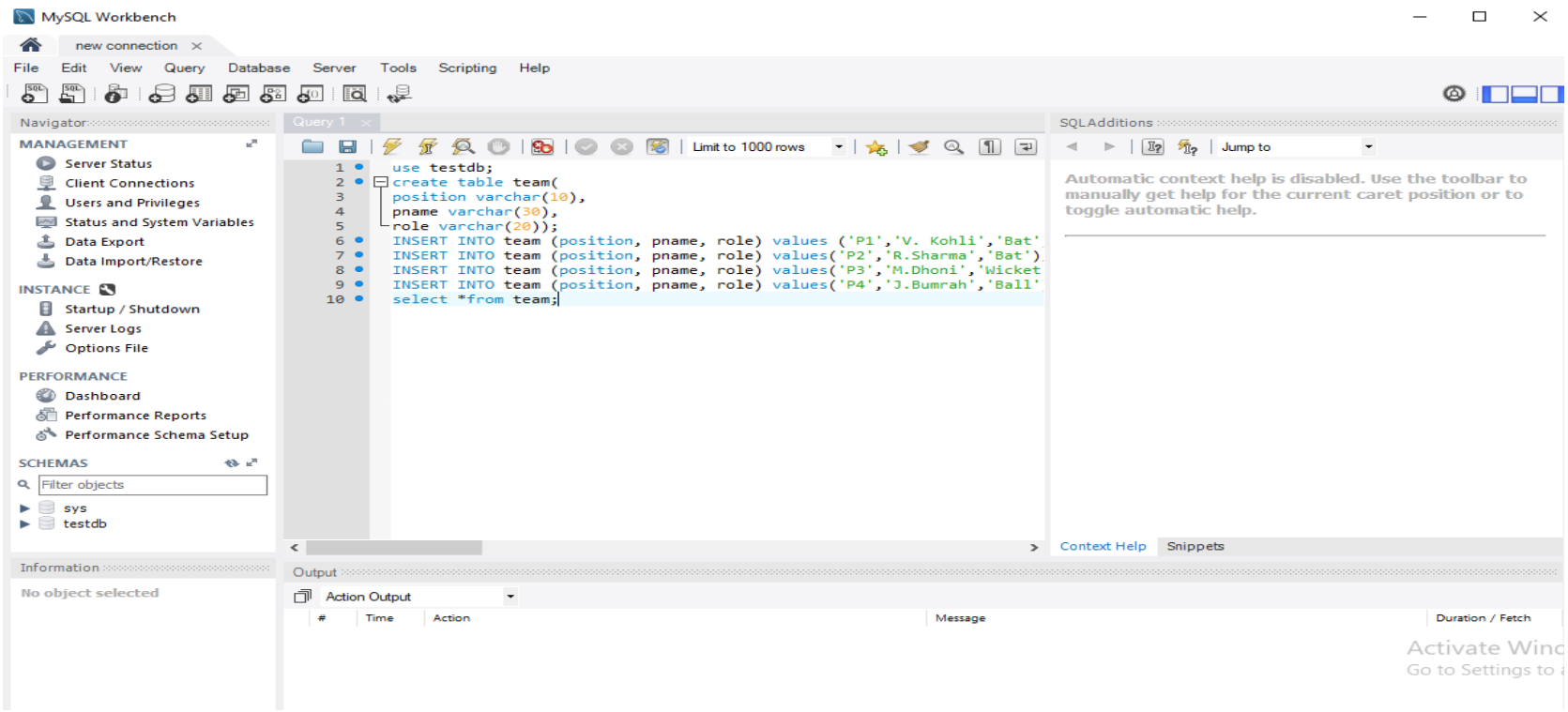
Connect MySQL with Python

Step-by-Step Instruction

MySQL Portal



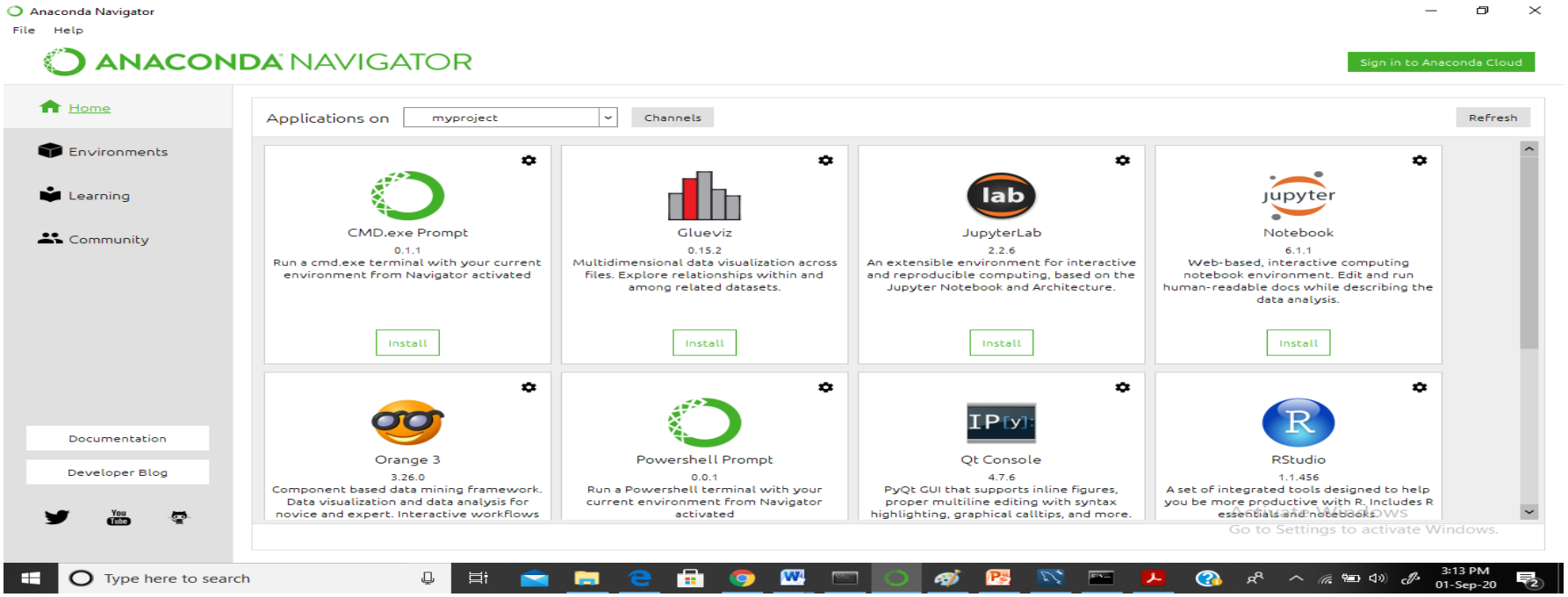
- This is MySQL workbench
- We are working in “**root**” with admin password =“**1234**”
- MySQL should be opened and connected
- We have created a database known as “**testdb**”. We will use this database.
- We have created a table known as ‘**team**’. Some values are already inserted.

Python (Anaconda) Portal

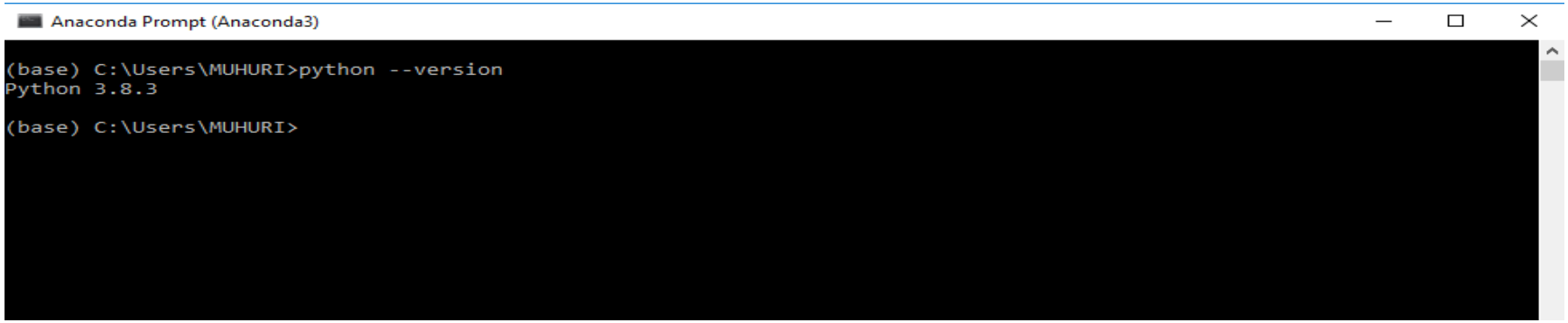
- We have installed Python "**Anaconda**". The link is as follows: https://www.anaconda.com/products/individual
- Scroll down the page. Choose your OS version and download the product

Windows	MacOS	Linux
Python 3.8	Python 3.8	Python 3.8
64-Bit Graphical Installer (466 MB)	64-Bit Graphical Installer (462 MB)	64-Bit (x86) Installer (550 MB)
32-Bit Graphical Installer (397 MB)	64-Bit Command Line Installer (454 MB)	64-Bit (Power8 and Power9) Installer (290 MB)

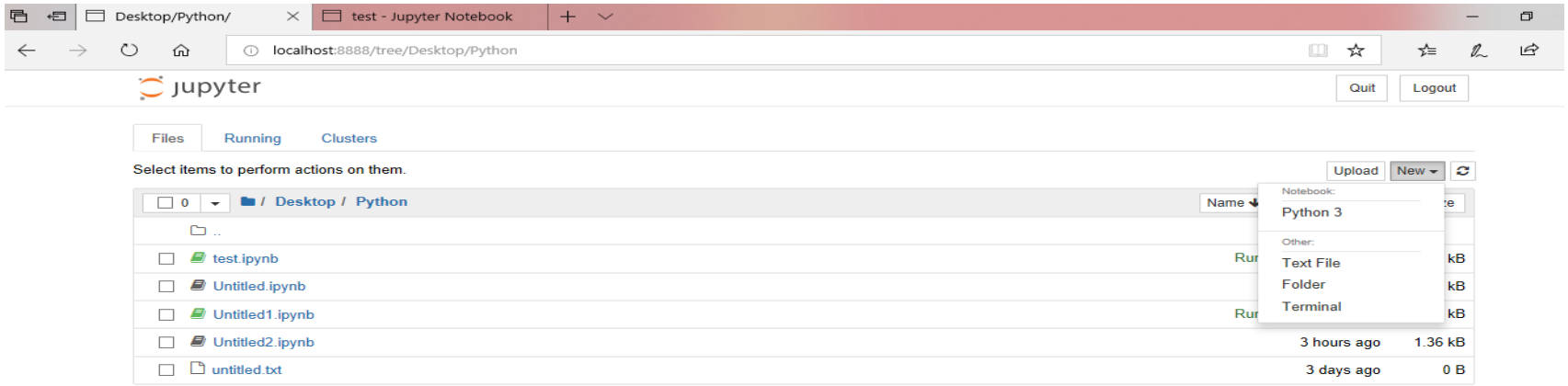
- Install it in normal procedure by clicking next -> next.. Run Anaconda Navigator from WINDOWS start button



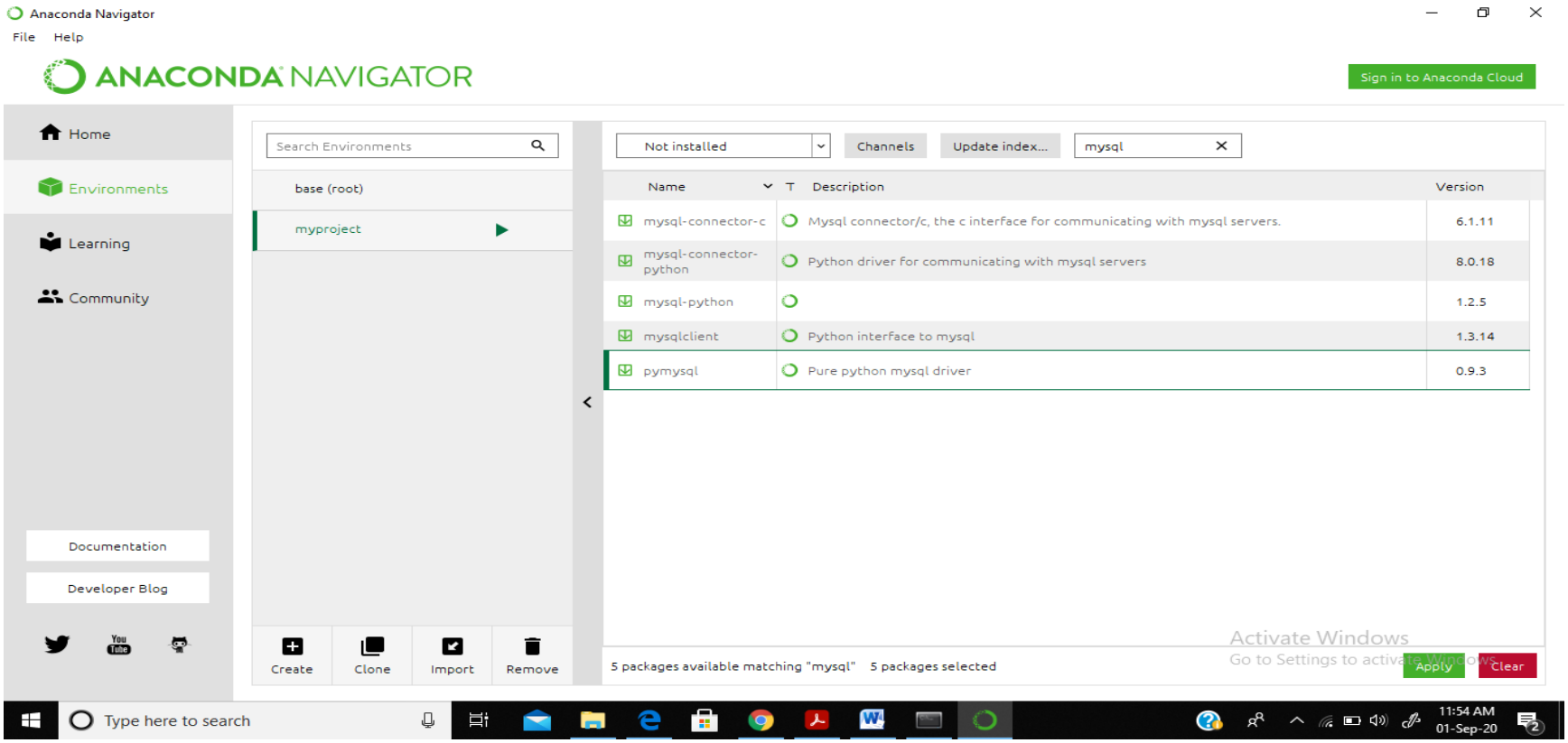
Anaconda Prompt



- Also open **Anaconda prompt** from WINDOWS start button
- You can check python version (if successfully installed) by writing the command **: python –version**
- From here you can also open Jupyter Notebook by the following command**: jupyter notebook**
- Jupyter notebook will open in any internet browser
- Choose any folder (or create a new folder) and choose **new -> python3** (as shown in diagram below)

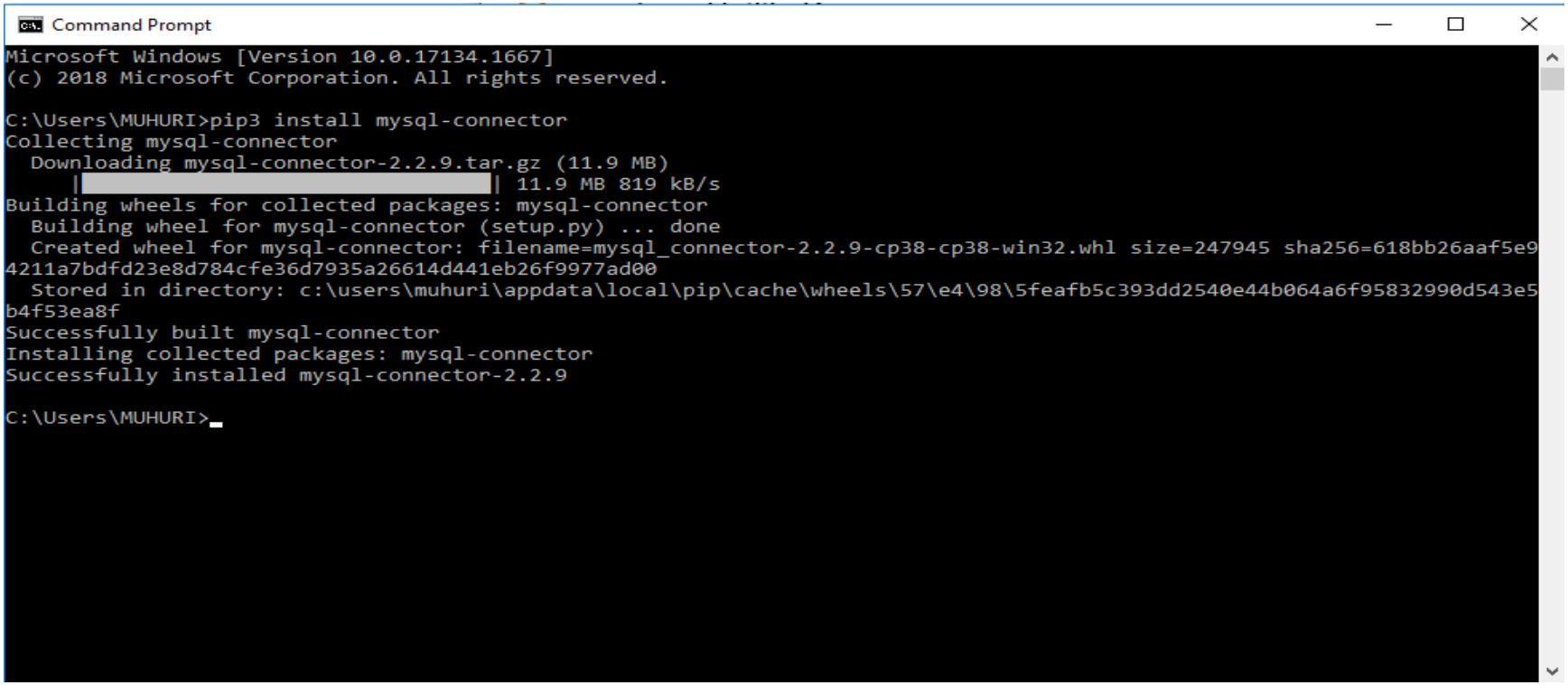


Install All MySQL Packages



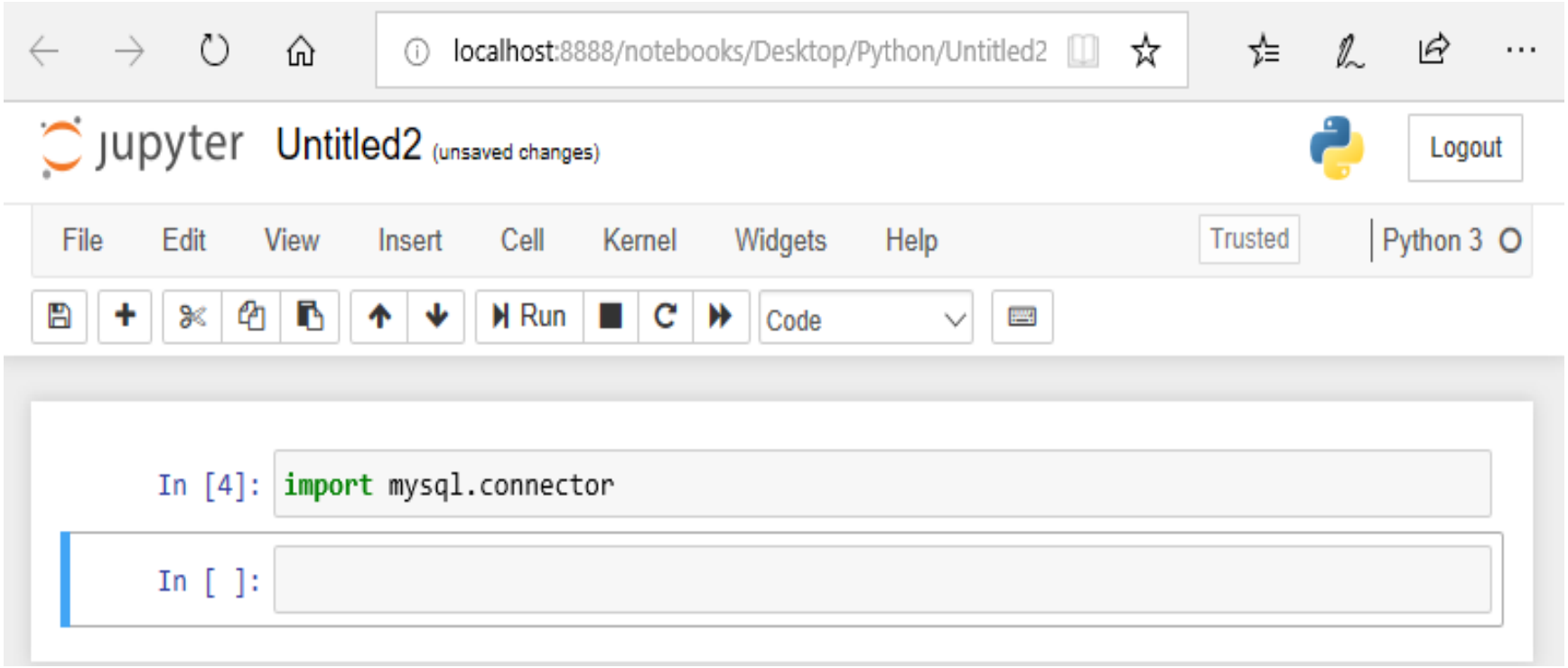
- In the Anaconda Navigator, click on environment
- In the below, click on **create** button and create a new project (here we have created myproject)
- In the right hand side, choose **'not installed'** option and search **"mysql"** (as shown in the diagram)
- Some files will come. You have to select one by one and click on apply. It will install the packages one by one. If it is not visible in '**not installed**' option, then check it from "**installed**" option. If it is already installed, you can skip this step.

Installing MySQL connector



- Open command prompt from WINDOWS start button (command: **cmd**)
- You have to install MySQL connector for python using the following code: **pip3 install mysql-connector**
- If it is installed successfully, then you will get completion message.
- Now again open Jupyter Notebook for writing the code

Import MySQL Connector



- You have to import mysql connector. The command is : **import mysql.connector**
- Click on ‘run’. If it is successful, you will not get any message.

Establish Connection

```
In [4]: import mysql.connector

In [5]: mydb=mysql.connector.connect(host="localhost",user="root",passwd="1234")

In [ ]:
```

- Now we have to connect mysql.
- User is "**root**", and password "**1234**"
- You have to create a variable which will store the connection
- The function is: **mysql.connector.connect**
- You have to pass **3 parameters (compulsory)**, 1)Host name, 2) User name 3)password
- 4th parameter is optional i.e. **database name**. If you want to access any particular database, then database name should be passed with these values.
- If successful connection has established, no error message will appear.

Check All the Databases

```
In [6]: mycursor=mydb.cursor()
        mycursor.execute("show databases")
        for i in mycursor:
            print(i)

        ('information_schema',)
        ('mysql',)
        ('performance_schema',)
        ('sys',)
        ('testdb',)

In [ ]:
```

- A **cursor** has to be created. The cursor will act like a **container** to hold the data.
- For fetching any data, we have to print it from **cursor**.
- Cursor will be connected with the connection established variable "**mydb**" (any name)
- For writing any mysql command, we have to write it in between **mycursor.execute** (" command")
- Here, **no ";"** is needed as per the rule of python.
- We have written the code for "**show databases**". If you want to work in mysql, you have to choose any particular database. The name of the database should be passed in the time of connection establishment.

Select Command

```
In [7]: mydb=mysql.connector.connect(host="localhost",user="root",passwd="1234",database="testdb")
        mycursor=mydb.cursor()
        mycursor.execute("select * from team")
        for i in mycursor:
            print(i)

('P1', 'V. Kohli', 'Bat')
('P2', 'R.Sharma', 'Bat')
('P3', 'M.Dhoni', 'Wicket')
('P4', 'J.Bumrah', 'Ball')

In [ ]:
```


- Here, we have chosen "**testdb**" database and it has been passed as the 4th parameter in the time of connection.
- We have fetched all the data from "**team**" table using select command.
- The mysql command has to be written within "**execute**" function.
- The fetched data is shown from cursor.

Store Fetched Data

```
In [8]: mydb=mysql.connector.connect(host="localhost",user="root",passwd="1234",database="testdb")
        mycursor=mydb.cursor()
        mycursor.execute("select * from team")
        result=mycursor.fetchall()
        for i in result:
            print(i)

        ('P1', 'V. Kohli', 'Bat')
        ('P2', 'R.Sharma', 'Bat')
        ('P3', 'M.Dhoni', 'Wicket')
        ('P4', 'J.Bumrah', 'Ball')

In [ ]:
```


- For storing the result, cursor can be attached with other variable (say **“result”)**
- “**fetchall**” function will return all the data.

All the codes

```
import mysql.connector
mydb=mysql.connector.connect(host="localhost",user="root",passwd="1234")
mycursor=mydb.cursor()
mycursor.execute("show databases")
for i in mycursor:
    print(i)

mydb=mysql.connector.connect(host="localhost",user="root",passwd="1234",database="testdb")
mycursor=mydb.cursor()
mycursor.execute("select * from team")
for i in mycursor:
    print(i)

mydb=mysql.connector.connect(host="localhost",user="root",passwd="1234",database="testdb")
mycursor=mydb.cursor()
mycursor.execute("select * from team")
result=mycursor.fetchall()
for i in result:
    print(i)
```

Insert Data

```
In [9]: mycursor.execute("INSERT INTO team (position, pname, role) values ('P5','H.Pandia','All')")
        mycursor.execute("select * from team")
        result=mycursor.fetchall()
        for i in result:
            print(i)
```

```
('P1', 'V. Kohli', 'Bat')
('P2', 'R.Sharma', 'Bat')
('P3', 'M.Dhoni', 'Wicket')
('P4', 'J.Bumrah', 'Ball')
('P5', 'H.Pandia', 'All')
```

```
mycursor.execute("INSERT INTO team (position, pname, role) values
('P5','H.Pandia','All')")
mycursor.execute("select * from team")
result=mycursor.fetchall()
for i in result:
    print(i)
```

For your Reference

- You can use any MySQL command through the mentioned method.
- You can use other Pythons IDEs (like **Pycharm, Sublime Text etc.).**

- How to install Anaconda: https://www.youtube.com/watch?v=5mDYijMfSzs&t=323s
- How to connect python with MySQL:
  1) https://www.youtube.com/watch?v=vR5utJvN4JY&t=94s
  2) https://www.youtube.com/watch?v=i2Gky9VZDsw
- Web Pages
  - https://www.w3schools.com/python/python_mysql_getstarted.asp
  - https://dev.mysql.com/doc/connector-python/en/connector-python-example-connecting.html