**Database connection:**

In this lecture we will try to connect python with a database, **RDBMS** – MySQL.

Why do we need to work with external databases? Till now we had worked with variables, collections etc.. all these are temporary. What we want is to make them permanent ex: playing the game and how do save the data about it, that is where we need external database.

Let’s go to google and search for mysql installer and download the entire server software <https://dev.mysql.com/downloads/installer/> , which says mysql community installer and proceed with installation of ‘developer default’ setup type.

Skip the ‘check requirements’ if any 🡪 Next 🡪 configuration

Leave everything default except the below mentioned ones

Authentication method : select legacy authentication

Accounts and Roles : set the MySQL password ***check the add user option***

While connecting to the server, enter the password as shown below. We should receive the connection succeeded.

Graphical user interface, application

Description automatically generated

If we have added another user, check connection for that user as well.--> execute and click on finish.

Now it will open/create a workbench where we can perform some operations which we will look further and we should be able to see the screen shown below.

Text

Description automatically generated

Graphical user interface, text, application

Description automatically generated

We can see the local instance and we need to provide the password to access the workbench. Workbench will be shown as below. Discuss the highlighted areas.

Graphical user interface, application

Description automatically generated

Run the commands in order and observe the output, discuss them. For the last command we should see the output of values

Graphical user interface, text, application, email

Description automatically generated

Once we had the output, let’s think about python. We don’t want to work with MySQL and as developers we need to fetch data from software using python. In order to do it, we need to connect this to python code. Let’s check how to do it below.

**Python database connection:**

Before connecting MySQL with python you need one thing in between which is MySQL connector. If you need to connect MySQL with any language you need a connector. Now how to install the connector? – do it on cmd prompt

***Pip3 install mysql-connector***

*Text

Description automatically generated with medium confidence*

We can use any editor like sublime, pycharm or any other editor. We can use

[Download - Sublime Text](https://www.sublimetext.com/3) download and install sublime editor. Setup build system python 🡪 ctrl + B 🡪 select python and your code should run. Try print statement and make sure you get the output. Proceed further only if you have the output. Once you are sure that sublime is working fine.

* Let’s start working with the connector with the help of steps mentioned below

1. Import the connector which we have downloaded before ***import mysql.connector***
2. Setup actual connection using connect method as shown below and we shouldn’t get error after the 2 lines of code. Make sure to change the username and passwd values as per our credentials

Graphical user interface, text

Description automatically generated

1. Let’s write a code to fetch all the databases names in our machine. We need to use ***cursor()*** class. <https://www.psycopg.org/docs/cursor.html> take a look at ***execute()*** method.

Below code should print the databases.

Text

Description automatically generated

1. Now we know how to fetch all the databases. Let’s proceed further with fetching the actual data (earlier we created 2 student records in our student table). If you want to fetch these records we need to fire a query and update the connection string as highlighted below.

Text

Description automatically generated

* Instead of using cursor we can also save the data somewhere which means by using ***return*** as shown below

Text

Description automatically generated

* What if we want to fetch one record. Run the below code and observe the output

Text

Description automatically generated

* You can try running insert, delete statements as well. If possible, try to perform some operations with those statements.