Lab 10 -Connecting a Python Application to a MySQL Database

In this lab, you will learn how to connect a python application on streamlit with a MySQL database. The entire procedure is described in the following steps:

Objectives:

- Create a CRUD Application using Streamlit
- Connect the application to MySQL Server

Tools required:

- **Python:** https://www.python.org/downloads/
- **PyCharm:** PyCharm is a dedicated Python Integrated Development Environment (IDE) providing a wide range of essential tools for Python developers. https://www.jetbrains.com/pycharm/download/#section=windows
- **Streamlit:** It is an open source app framework in Python language. It helps us create web apps for data science and machine learning in a short time. It is compatible with major Python libraries. Command: *pip install streamlit*
- **MySQL:** It is a widely used relational database management system (RDBMS). https://dev.mysql.com/doc/mysql-installation-excerpt/5.7/en/
- **MySQL WorkBench**: MySQL Workbench is a unified visual tool for database architects, developers, and DBAs. https://dev.mysql.com/downloads/workbench/

Note: MySQL Workbench is a MySQL Server GUI. It requires a MySQL Server connection for most tasks. Documentation: WorkBench

Assignment: Railway Reservation

1. Execute a CRUD (Create, Read, Update and Delete) application in python using Streamlit and MySQL to create a table ‘train’ in the User-Interface.

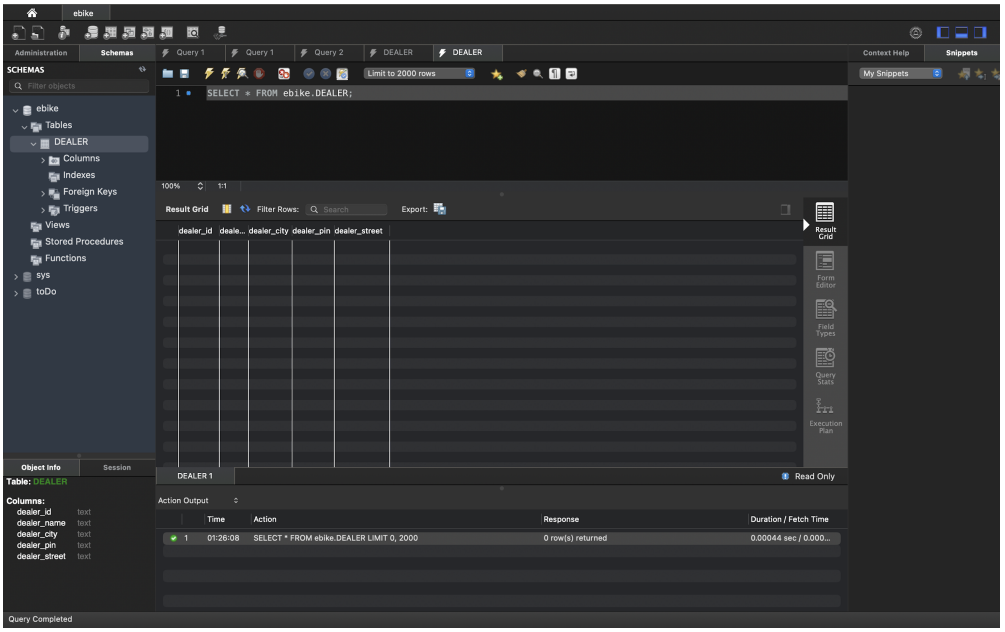
The ‘train’ table should be populated with the following 3 records using the User-Interface:

Train_No	Name	Train_Type	Source	Destination	Availability
62621	BEN-CHE Shatabdi	Superfast	Bengaluru	Chennai	yes
62620	CHE-BEN Shatabdi	Fast	Chennai	Bengaluru	No
25261	Managaluru Mail	Mail	Chennai	Mangaluru	Yes

2. Read the details entered at real time in the User-Interface itself.
3. Update the ‘Availability’ of the Train_No 62620 to ‘yes’ in the User-Interface.
4. Delete the Train_No 25261 in the User-Interface.

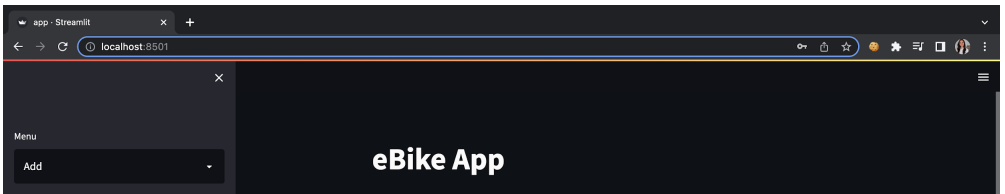
Deliverables for submission: Upload a PDF with the following 6 Screenshots. (Remember to incorporate your SRN)

1. Screenshot of database with the table - ‘train’ before populating it.
2. Screenshot of the User Interface.
3. Screenshot of the 3 records in the train table from MySQL WorkBench.
4. Screenshot of the same 3 records visualised in the User Interface.
5. Screenshot of Updated Train_No 62620 in the User-Interface.
6. Screenshot of User-Interface after the Train_No 25261 has been deleted.



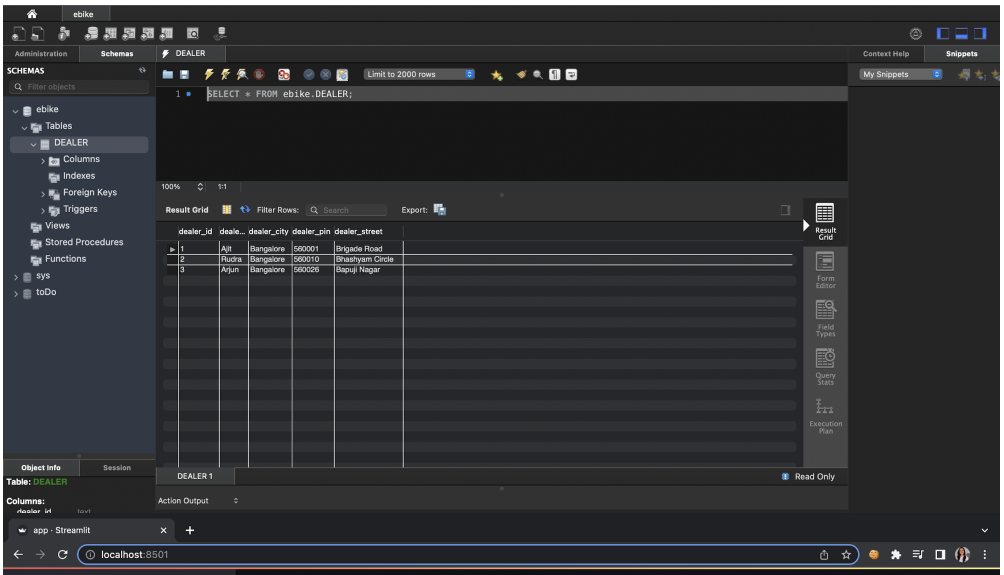
Sample screenshots as per demo exercise:

1.

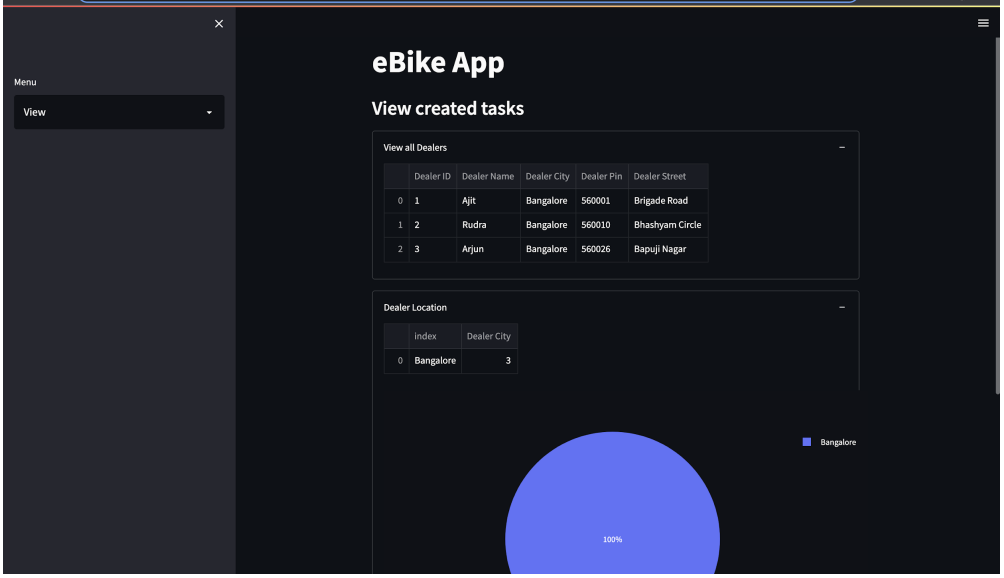


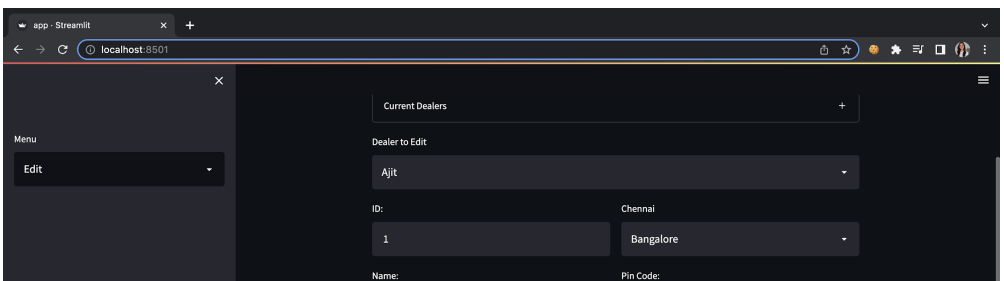
2.

3.


ebike
SCHEMAS
ebike
Tables
DEALER
Columns
Indexes
Foreign Keys
Triggers
Views
Stored Procedures
Functions
sys
toDo
SELECT * FROM ebike.DEALER;
Result Grid
dealer_id dealer_name dealer_city dealer_pin dealer_street
1 Ajit Bangalore 560001 Brigade Road
2 Rudra Bangalore 560010 Bhashyam Circle
3 Arjun Bangalore 560026 Bapuji Nagar
Object Info
Session
Table: DEALER
Columns:
Action Output
Read Only
app · Streamlit
localhost:8501

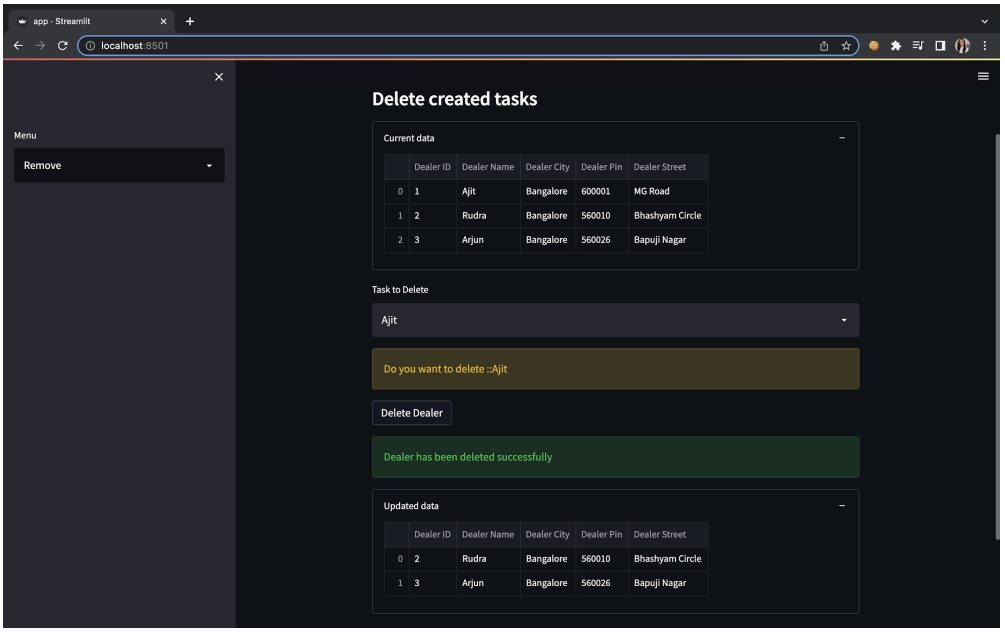
4.


Menu
View
eBike App
View created tasks
View all Dealers
Dealer ID Dealer Name Dealer City Dealer Pin Dealer Street
0 1 Ajit Bangalore 560001 Brigade Road
1 2 Rudra Bangalore 560010 Bhashyam Circle
2 3 Arjun Bangalore 560026 Bapuji Nagar
Dealer Location
index Dealer City
0 Bangalore 3
Bangalore
100%


app · Streamlit
localhost:8501
Menu
Edit
Current Dealers
Dealer to Edit
Ajit
ID:
1
Chennai
Bangalore
Name:
Pin Code:

5.

6.


app · Streamlit
localhost:8501
Menu
Remove
Delete created tasks
Current data
Dealer ID Dealer Name Dealer City Dealer Pin Dealer Street
0 1 Ajit Bangalore 600001 MG Road
1 2 Rudra Bangalore 560010 Bhashyam Circle
2 3 Arjun Bangalore 560026 Bapuji Nagar
Task to Delete
Ajit
Do you want to delete ::Ajit
Delete Dealer
Dealer has been deleted successfully
Updated data
Dealer ID Dealer Name Dealer City Dealer Pin Dealer Street
0 2 Rudra Bangalore 560010 Bhashyam Circle
1 3 Arjun Bangalore 560026 Bapuji Nagar