!pip install mysql-connector-python

# Import the MySQL Connector/Python

import mysql.connector as connector

# Establish connection between Python and MySQL database via connector API

connection=connector.connect(

user="root", # use your own

password="", # use your own

)

print("Connection between MySQL and Python is established.\n")

# Create cursor object to communicate with entire MySQL database

cursor = connection.cursor()

print("Cursor is created to communicate with the MySQL using Python.\n")

# If exist, drop the database first, and create again

try:

cursor.execute("CREATE DATABASE little\_lemon")

except:

cursor.execute("drop database little\_lemon")

cursor.execute("CREATE DATABASE little\_lemon")

print("The database little\_lemon is created.\n")

# Set little\_lemon database for use

cursor.execute("USE little\_lemon")

print("The database little\_lemon is set for use.\n")

# The SQL query for MenuItems table is:

create\_menuitem\_table="""

CREATE TABLE MenuItems (

ItemID INT AUTO\_INCREMENT,

Name VARCHAR(200),

Type VARCHAR(100),

Price INT,

PRIMARY KEY (ItemID)

);"""

# Create MenuItems table

cursor.execute(create\_menuitem\_table)

print("MenuItmes table is created.\n")

# The SQL query for Menu table is:

create\_menu\_table="""

CREATE TABLE Menus (

MenuID INT,

ItemID INT,

Cuisine VARCHAR(100),

PRIMARY KEY (MenuID,ItemID)

);"""

# Create Menu table

cursor.execute(create\_menu\_table)

print("Menu table is created.\n")

# The SQL query for Bookings table is:

create\_booking\_table="""

CREATE TABLE Bookings (

BookingID INT AUTO\_INCREMENT,

TableNo INT,

GuestFirstName VARCHAR(100) NOT NULL,

GuestLastName VARCHAR(100) NOT NULL,

BookingSlot TIME NOT NULL,

EmployeeID INT,

PRIMARY KEY (BookingID)

);"""

# Create Bookings table

cursor.execute(create\_booking\_table)

print("Bookings table is created.\n")

# The SQL query for Bookings table is:

create\_orders\_table="""

CREATE TABLE Orders (

OrderID INT,

TableNo INT,

MenuID INT,

BookingID INT,

BillAmount INT,

Quantity INT,

PRIMARY KEY (OrderID,TableNo)

);"""

# Create Orders table

cursor.execute(create\_orders\_table)

print("Orders table is created.\n")

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

# Insert query to populate "MenuItems" table is:

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

insert\_menuitmes="""

INSERT INTO MenuItems (ItemID, Name, Type, Price)

VALUES

(1,'Olives','Starters',5),

(2,'Flatbread','Starters', 5),

(3, 'Minestrone', 'Starters', 8),

(4, 'Tomato bread','Starters', 8),

(5, 'Falafel', 'Starters', 7),

(6, 'Hummus', 'Starters', 5),

(7, 'Greek salad', 'Main Courses', 15),

(8, 'Bean soup', 'Main Courses', 12),

(9, 'Pizza', 'Main Courses', 15),

(10,'Greek yoghurt','Desserts', 7),

(11, 'Ice cream', 'Desserts', 6),

(12, 'Cheesecake', 'Desserts', 4),

(13, 'Athens White wine', 'Drinks', 25),

(14, 'Corfu Red Wine', 'Drinks', 30),

(15, 'Turkish Coffee', 'Drinks', 10),

(16, 'Turkish Coffee', 'Drinks', 10),

(17, 'Kabasa', 'Main Courses', 17);"""

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

# Insert query to populate "Menu" table is:

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

insert\_menu="""

INSERT INTO Menus (MenuID,ItemID,Cuisine)

VALUES

(1, 1, 'Greek'),

(1, 7, 'Greek'),

(1, 10, 'Greek'),

(1, 13, 'Greek'),

(2, 3, 'Italian'),

(2, 9, 'Italian'),

(2, 12, 'Italian'),

(2, 15, 'Italian'),

(3, 5, 'Turkish'),

(3, 17, 'Turkish'),

(3, 11, 'Turkish'),

(3, 16, 'Turkish');"""

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

# Insert query to populate "Bookings" table is:

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

insert\_bookings="""

INSERT INTO Bookings (BookingID, TableNo, GuestFirstName,

GuestLastName, BookingSlot, EmployeeID)

VALUES

(1,12,'Anna','Iversen','19:00:00',1),

(2, 12, 'Joakim', 'Iversen', '19:00:00', 1),

(3, 19, 'Vanessa', 'McCarthy', '15:00:00', 3),

(4, 15, 'Marcos', 'Romero', '17:30:00', 4),

(5, 5, 'Hiroki', 'Yamane', '18:30:00', 2),

(6, 8, 'Diana', 'Pinto', '20:00:00', 5);"""

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

# Insert query to populate "Orders" table is:

#\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*#

insert\_orders="""

INSERT INTO Orders (OrderID, TableNo, MenuID, BookingID, Quantity, BillAmount)

VALUES

(1, 12, 1, 1, 2, 86),

(2, 19, 2, 2, 1, 37),

(3, 15, 2, 3, 1, 37),

(4, 5, 3, 4, 1, 40),

(5, 8, 1, 5, 1, 43);"""

print("Inserting data in MenuItems table.")

# Populate MenuItems table

cursor.execute(insert\_menuitmes)

print("Total number of rows in MenuItem table: {}\n".format(cursor.rowcount))

# Once the query is executed, you commit the change into the database

connection.commit()

print("Inserting data in Menus table.")

# Populate MenuItems table

cursor.execute(insert\_menu)

print("Total number of rows in Menu table: {}\n".format(cursor.rowcount))

connection.commit()

print("Inserting data in Bookings table.")

# Populate Bookings table

cursor.execute(insert\_bookings)

print("Total number of rows in Bookings table: {}\n".format(cursor.rowcount))

connection.commit()

print("Inserting data in Orders table.")

# Populate Orders table

cursor.execute(insert\_orders)

print("Total number of rows in Orders table: {}\n".format(cursor.rowcount))

connection.commit()

print("""The database "little\_lemon" is ready for use.""")

Task 1:

Little Lemon wants to retrieve the number of bookings in each hour so that they can schedule their staff’s duties accordingly. Use the following steps as a guide to complete this task:

* Step 1: Target the BookingID and BookingSlot columns from the Bookings table.
* Step 2: Extract the hour from the BookingSlot column and count the bookings in each hour.
* Step 3: Group and order the data by hour.

TIP: Use MySQL HOUR, COUNT, GROUP BY and ORDER BY to accomplish the task.

# Read query

#all\_bookings = """SELECT GuestFirstName, GuestLastName,

#TableNo FROM bookings;"""

# The SQL query is:

sql\_query = """SELECT

COUNT(BookingID) AS n\_bookings,

HOUR(BookingSlot) AS Hour

FROM Bookings

GROUP BY Hour

ORDER BY Hour ASC;"""

# Execute the query

cursor.execute(sql\_query)

# Fetch all results that satisfy the query

results = cursor.fetchall()

# Print records in the required format using for loop

print("""Upcoming Bookings:\n""")

#print(cols)

for result in results:

print("Hour: ",result[1],"<<>>", result[0], "Booking/s")

Task 2:

Little Lemon needs to display the following information for their staff:

* Each guest’s table number,
* Each guest’s full name,
* And the expected arrival time in hours and minutes of each guest (e.g., 15 hours and 0 mins).

Help Little Lemon to retrieve and display the required information. Use the following steps as a guide to complete this task:

* Step 1: Target TableNo, GuestFirstName, GuestLastName and BookingSlot columns in the Bookings table.
* Step 2: Order the data by BookingSlot.
* Step 3: Use Python’s datetime module to extract hours and minutes using the strptime function when printing the record.

import datetime as dt

# The SQL query is:

sql\_query = """SELECT TableNo, GuestFirstName, GuestLastName, BookingSlot

FROM Bookings ORDER BY BookingSlot;"""

# Execute query

cursor.execute(sql\_query)

# Fetch all results that satisfy the query

results = cursor.fetchall()

# Print records in the required format

print("The guests and their booking slots are:\n")

for result in results:

time = str(result[3])

hour = dt.datetime.strptime(time,'%H:%M:%S').hour

minute = dt.datetime.strptime(time,'%H:%M:%S').minute

print("[Table no:]",result[0],">>",result[1],result[2], "is expected to arrive at:",

hour,"hrs and", minute, "mins")

Task 3:

A guest with booking ID 2 and table number 12 wants to change their arrival time by one hour from 7pm to 8pm. Help Little Lemon to make this change using Python in their application. Use the following steps as a guide to complete this task:

* Step 1: Target BookingID, TableNo and BookingSlot columns in the Bookings table.
* Step 2: Add one hour in the BookingSlot.
* Step 3: Use the WHERE clause on TableNo and BookingID columns.

#SELECT \*, ADDTIME(ScheduledlArrivalTime, "00:10:00")

#AS ExpectedArrivalTime FROM ScheduleDetails;

"""UPDATE Bookings

SET BookingSlot=ADDTIME(BookingSlot,"1:00:00") WHERE BookingID=2;"""

# The SQL query is:

sql\_query = """SELECT BookingID, TableNo, BookingSlot,

ADDTIME(BookingSlot,"1:00:00") as NewTime

FROM Bookings WHERE TableNo = 12 AND BookingID = 2;"""

# Execute query

cursor.execute(sql\_query)

# Fetch all results that satisfy the query

results = cursor.fetchall()

# Print time change alert.

print("Booking time change ALERT!!")

for result in results:

print("Booking ID:",result[0])

print("Table number:",result[1])

print("Booked slot:",result[2])

print("New arrival time:",result[3])

# Let's close the cursor and the connection

if connection.is\_connected():

cursor.close()

print("The cursor is closed.")

connection.close()

print("MySQL connection is closed.")

else:

print("Connection is already closed")