import mysql.connector

def import\_data(): # Reads instructor and department .txt files and creates their respective MySQL tables

try:

f = open("C:\\Users\\Zarav\\Documents\\Python\\department.txt", "r")

c.execute("""create table department(dept\_name varchar(20),

location varchar(20), budget numeric(8,2), primary key (dept\_name));""")

for i in f:

line = [atr.strip() for atr in i.split(',')]

c.execute("""insert into department values ('{}', '{}', '{}');""".format(line[0], line[1], line[2]))

f.close()

f = open("C:\\Users\\Zarav\\Documents\\Python\\instructor.txt", "r")

c.execute("""create table instructor(id varchar(4), name varchar(20), dept\_name varchar(20), primary key(id), foreign key(dept\_name) references department(dept\_name));""")

for i in f:

line = [atr.strip() for atr in i.split(',')]

c.execute("""insert into instructor values ('{}', '{}', '{}');""".format(line[0], line[1], line[2]))

f.close()

connect.commit()

print("Created tables")

except:

print("Loaded tables")

def print\_menu(): # Prints the main menu and return the user's input option

print("\nMain Menu:")

print("1. Enter the instructor ID and I will provide you with the name of the instructor, affiliated department and the location of that department.")

print("2. Enter the department name and I will provide you with the location, budget and names of all instructors that work for the department.")

print("3. Insert a record about a new instructor.")

print("4. Delete a record about an instructor")

print("5. Exit")

return input("Enter an option: ")

try:

connect = mysql.connector.connect(user = 'root', password = '7698frza') # Establish connection

c = connect.cursor() # Makes cursor object

try: # Try to create database

c.execute("""create database university;""")

print("Creating database university...")

except: # If database cannot be created, then it already exists

print("Loaded database university")

c.execute("""use university;""") # Use the database

import\_data() # imports data from .txt files

option = print\_menu() # Prints the main menu

while not option == "5": # Loop runs until user enters "5"

if option == "1": # Enter instructor ID and instructor info will appear

ID = input("Enter the instructor's ID: ")

try:

c.execute("""select name, dept\_name, location from department natural join instructor where id = '{}'""".format(ID))

except:

print("\n" + ID, "is not a valid entry.")

option = print\_menu()

continue

result = c.fetchone()

if result is None:

print("\nThe ID does not appear in the database.")

else:

print("\nMatch Found:")

print("Name:", result[0])

print("Department:", result[1])

print("Location:", result[2])

elif option == "2": # Enter department name and both department info and instructors in that department will appear

dept = input("Enter the department name: ")

try:

c.execute("""select name from instructor where dept\_name = '{}'""".format(dept))

instructors = c.fetchall()

c.execute("""select location, budget from department where dept\_name = '{}'""".format(dept))

location\_budget = c.fetchone()

except:

print("\n" + dept, "is not a valid entry.")

option = print\_menu()

continue

if location\_budget is None:

print("\nThe department name does not appear in the database.")

else:

print("\n" + dept, "department:")

print("Location:", location\_budget[0])

print("Budget:", location\_budget[1])

if instructors is None:

print("\nThere are no instructors in the", dept, "department.")

else:

print("\nInstructors in the", dept, "department:")

for i in instructors:

print(i[0])

elif option == "3": # Enter information about new instructor and adds it to the database

ID = input("Enter the instructor id: ")

name = input("Enter the instructor name: ")

dept = input("Enter the affiliated department name: ")

try:

c.execute("""select dept\_name from department;""")

except:

print("\n" + dept, "is not a valid entry.")

option = print\_menu()

continue

temp = c.fetchall()

departments = []

for i in temp:

departments.append(i[0])

try:

c.execute("""select id from instructor;""")

except:

print("\n" + ID, "is not a valid entry.")

option = print\_menu()

continue

temp = c.fetchall()

IDS = []

for i in temp:

IDS.append(i[0])

if dept not in departments:

print("\nThe department does not exist and hence the instructor record cannot be added to the database")

elif ID in IDS:

print("\nInstructor id already exists in the database.")

else:

c.execute("""insert into instructor values('{}', '{}', '{}');""".format(ID, name, dept))

connect.commit()

print("\nValues have been recorded.")

elif option == "4": # Enter an ID and the instructor will be removed from the database

ID = input("Enter the instructor id: ")

try:

c.execute("""select id from instructor;""")

except:

print("\n" + ID, "is not a valid entry.")

option = print\_menu()

continue

temp = c.fetchall()

IDS = []

for i in temp:

IDS.append(i[0])

if ID not in IDS:

print("\nThe ID does not appear in the database.")

else:

c.execute("""delete from instructor where id = '{}'""".format(ID))

connect.commit()

print("\nRecord has been deleted.")

else: # User entered an option that is excluded from the main menu

print("\n" + option, "is an invalid entry.")

option = print\_menu() # Function call; user enters option from main menu before the next iteration begins

print("You have exited the program.") # User has exited the program as soon as the program goes out of the while loop

c.close() # Closes the connection

except: # If a connection cannot be established, then print a message saying so

print("Cannot connect to MySQL")