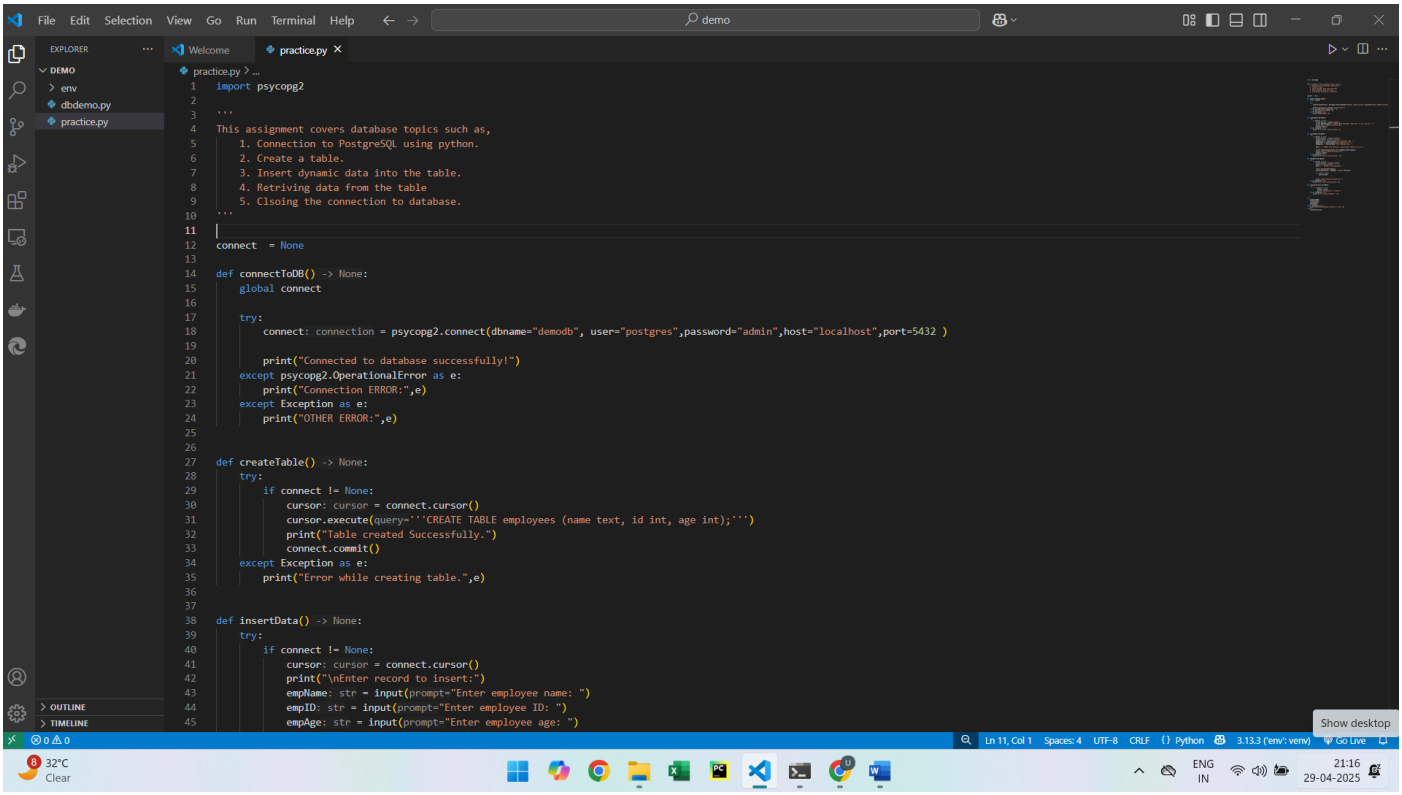
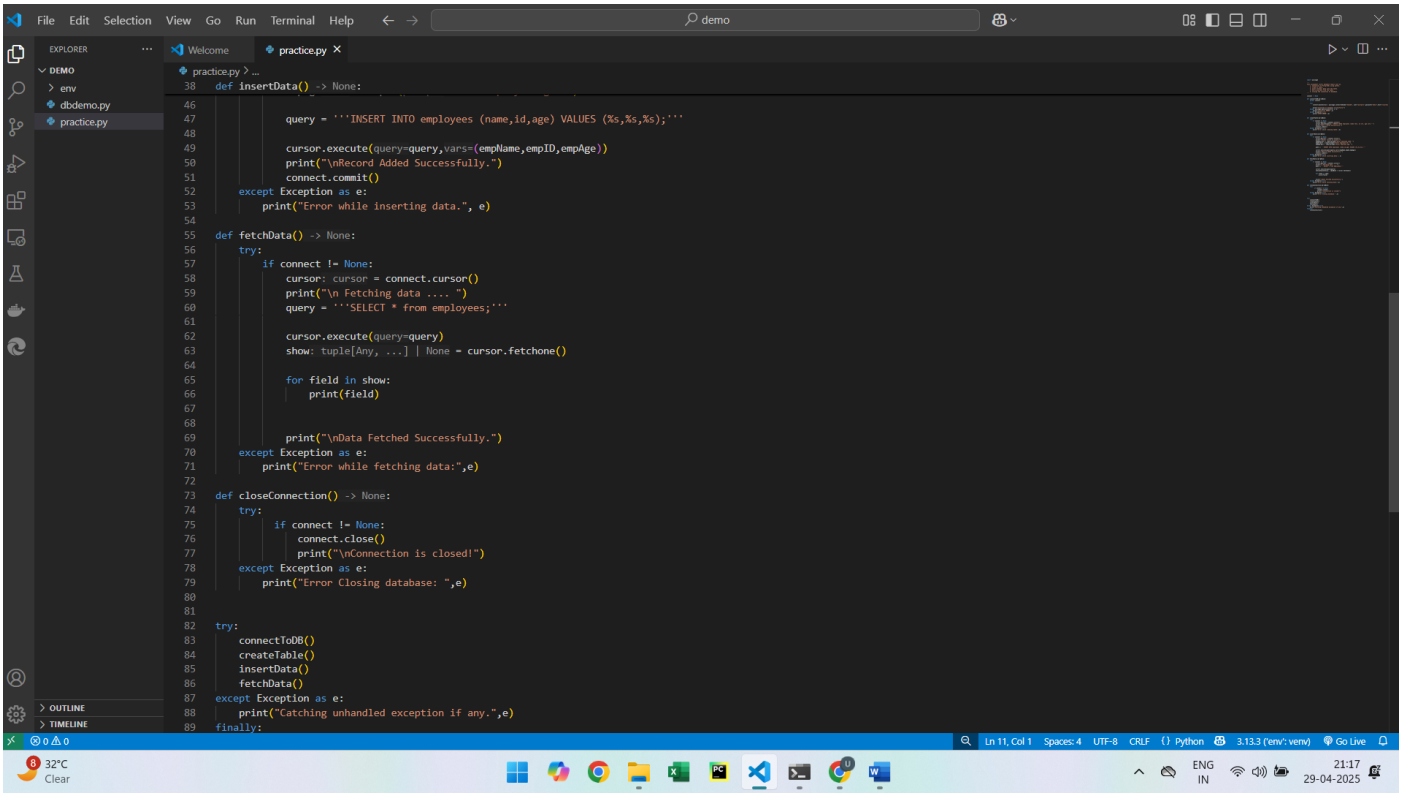
Assignment 7: Module 12: Building Database Apps with PostgreSQL & Python

Code:

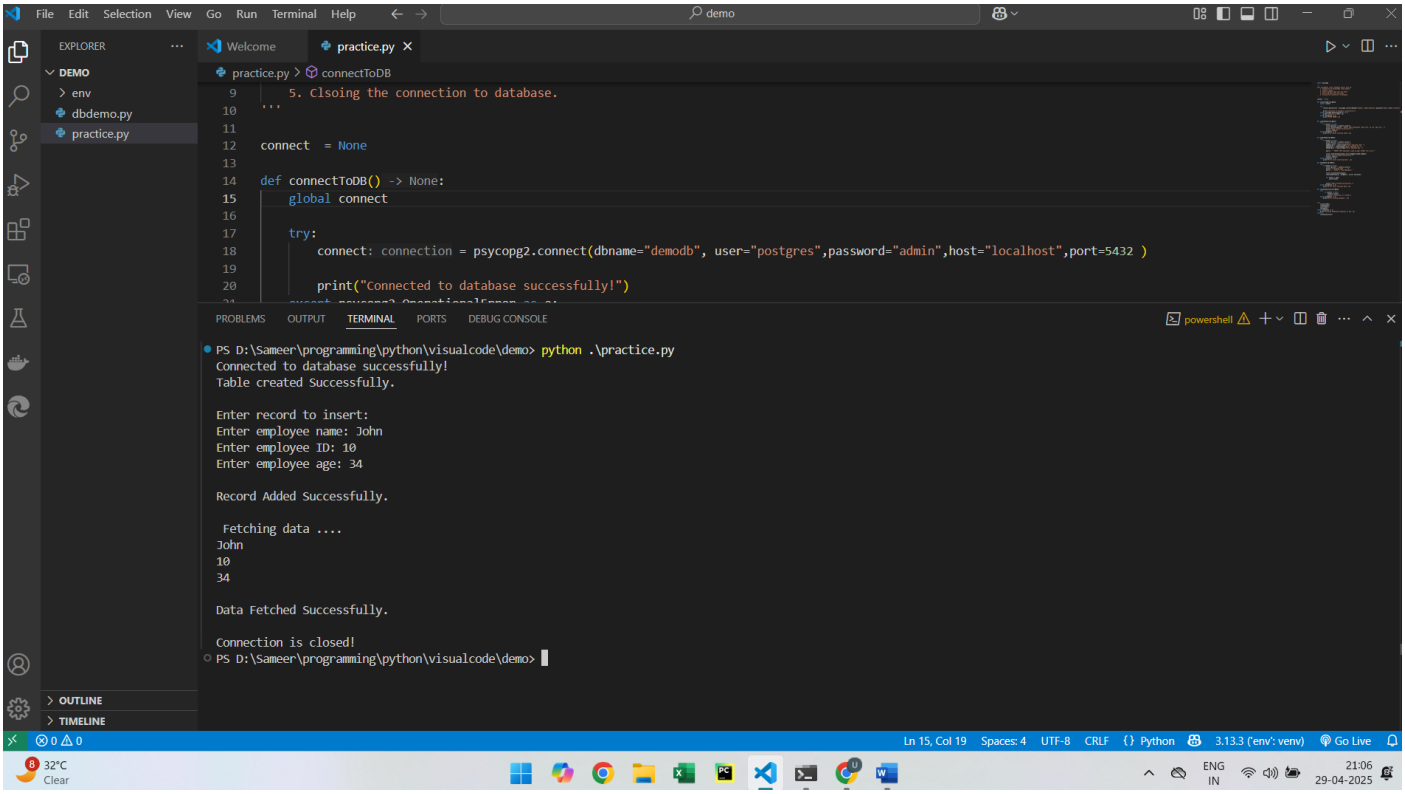
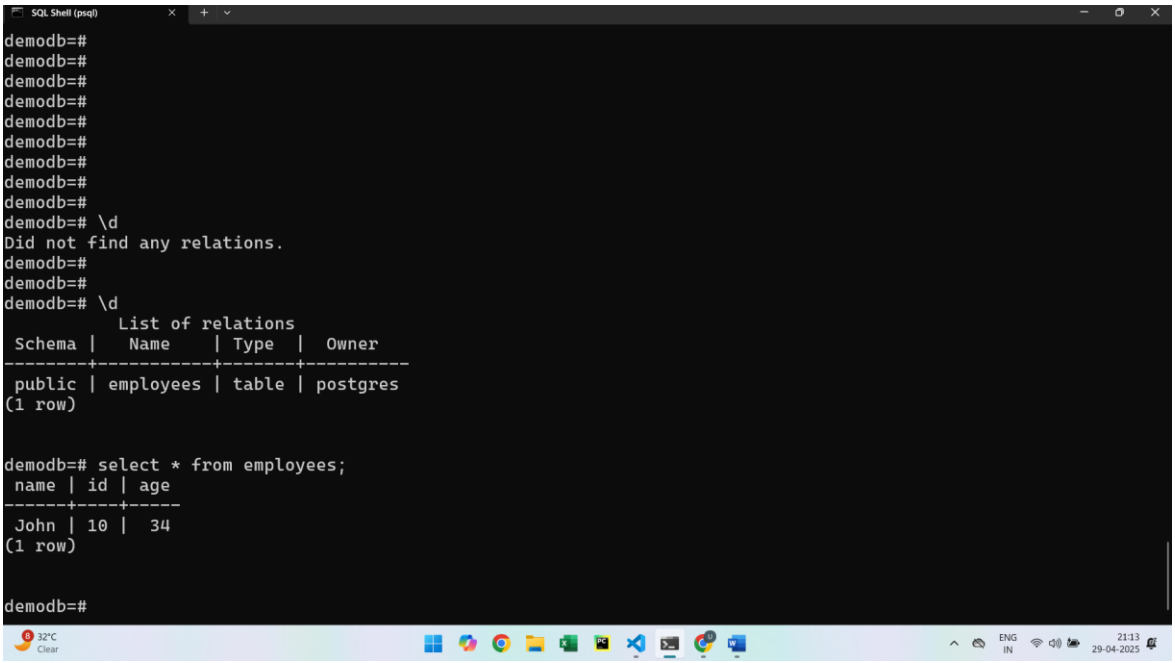


```python
import psycopg2

'''
This assignment covers database topics such as,
    1. Connection to PostgreSQL using python.
    2. Create a table.
    3. Insert dynamic data into the table.
    4. Retriving data from the table
    5. Closing the connection to database.
'''

connect  = None

def connectToDB() -> None:
    global connect

    try:
        connect: connection = psycopg2.connect(dbname="demodb", user="postgres",password="admin",host="localhost",port=5432 )

        print("Connected to database successfully!")
    except psycopg2.OperationalError as e:
        print("Connection ERROR:",e)
    except Exception as e:
        print("OTHER ERROR:",e)


def createTable() -> None:
    try:
        if connect != None:
            cursor: cursor = connect.cursor()
            cursor.execute(query='''CREATE TABLE employees (name text, id int, age int);''')
            print("Table created Successfully.")
            connect.commit()
    except Exception as e:
        print("Error while creating table.",e)


def insertData() -> None:
    try:
        if connect != None:
            cursor: cursor = connect.cursor()
            print("\nEnter record to insert:")
            empName: str = input(prompt="Enter employee name: ")
            empID: str = input(prompt="Enter employee ID: ")
            empAge: str = input(prompt="Enter employee age: ")
```



```python
def insertData() -> None:
            query = '''INSERT INTO employees (name,id,age) VALUES (%s,%s,%s);'''

            cursor.execute(query=query,vars=(empName,empID,empAge))
            print("\nRecord Added Successfully.")
            connect.commit()
    except Exception as e:
        print("Error while inserting data.", e)

def fetchData() -> None:
    try:
        if connect != None:
            cursor: cursor = connect.cursor()
            print("\n Fetching data .... ")
            query = '''SELECT * from employees;'''

            cursor.execute(query=query)
            show: tuple[Any, ...] | None = cursor.fetchone()

            for field in show:
                print(field)


            print("\nData Fetched Successfully.")
    except Exception as e:
        print("Error while fetching data:",e)

def closeConnection() -> None:
    try:
        if connect != None:
            connect.close()
            print("\nConnection is closed!")
    except Exception as e:
        print("Error Closing database: ",e)


try:
    connectToDB()
    createTable()
    insertData()
    fetchData()
except Exception as e:
    print("Catching unhandled exception if any.",e)
finally:
```

OutPut:



SQL command shell: