

1. Write a Python program to create a MySQL database and a table.

solution:-

```
import mysql.connector
mydb = mysql.connector.connect(
    host="localhost",
    user="yourusername",
    password="yourpassword"
)
mycursor = mydb.cursor()
mycursor.execute("CREATE DATABASE mydatabase")
mycursor.execute("CREATE TABLE customers (name VARCHAR(255), address VARCHAR(255))")
```

2. Write a Python program to insert data into a MySQL table.

solution:-

```
import mysql.connector
mydb = mysql.connector.connect(
    host="localhost",
    user="yourusername",
    password="yourpassword",
    database="mydatabase"
)
mycursor = mydb.cursor()
sql = "INSERT INTO customers (name, address) VALUES (%s, %s)"
val = ("John", "Highway 21")
mycursor.execute(sql, val)
mydb.commit()
print(mycursor.rowcount, "record inserted.")
```

3. Write a Python program to create an index on a MySQL table.

solution:-

```
import mysql.connector
mydb = mysql.connector.connect(
    host="localhost",
    user="yourusername",
    password="yourpassword",
    database="mydatabase"
)
mycursor = mydb.cursor()
mycursor.execute("CREATE INDEX idx_name ON customers (name)")
```

4. Write a Python program to join two tables in MySQL.

solution:-

```
import mysql.connector
mydb = mysql.connector.connect(
    host="localhost",
    user="yourusername",
    password="yourpassword",
    database="mydatabase"
)
mycursor = mydb.cursor()
mycursor.execute("SELECT customers.name, orders.product_name FROM customers
INNER JOIN orders ON customers.id = orders.customer_id")
myresult = mycursor.fetchall()
for x in myresult:
    print(x)
```

5. Write a Python program to handle MySQL errors using exception handling.

solution:-

```
import mysql.connector
try:
    mydb = mysql.connector.connect(
        host="localhost",
        user="yourusername",
        password="yourpassword",
        database="mydatabase"
    )
except mysql.connector.Error as err:
    print("Something went wrong: {}".format(err))
else:
    mycursor = mydb.cursor()
    mycursor.execute("SELECT * FROM customers")
    myresult = mycursor.fetchall()
    for x in myresult:
        print(x)
finally:
    mydb.close()
```

6. Write a Python program to connect to a MongoDB database and insert data.

solution:-

```
import pymongo
```

```
myclient = pymongo.MongoClient("mongodb://localhost:27017/")
mydb = myclient["mydatabase"]
mycol = mydb["customers"]
mydict = { "name": "John", "address": "Highway 37" }
x = mycol.insert_one(mydict)
print(x.inserted_id)
```

7. Write a Python program to update data in a MongoDB database.

solution:-

```
import pymongo
myclient = pymongo.MongoClient("mongodb://localhost:27017/")
mydb = myclient["mydatabase"]
mycol = mydb["customers"]
myquery = { "address": "Highway 37" }
newvalues = { "$set": { "address": "Park Lane 38" } }
mycol.update_many(myquery, newvalues)
print("Documents updated:", mycol.modified_count)
```

8. Write a Python program to handle MongoDB errors using exception handling.

solution:-

```
import pymongo
try:
    myclient = pymongo.MongoClient("mongodb://localhost:27017/")
    mydb = myclient["mydatabase"]
    mycol = mydb["customers"]
except pymongo.errors.ConnectionFailure as err:
    print("Could not connect to MongoDB: {}".format(err))
else:
    mydict = { "name": "John", "address": "Highway 37" }
    x = mycol.insert_one(mydict)
    print(x.inserted_id)
finally:
    myclient.close()
```

9. Write a Python program to query a MongoDB database using aggregation.

solution:-

```
import pymongo
myclient = pymongo.MongoClient("mongodb://localhost:27017/")
mydb = myclient["mydatabase"]
mycol = mydb["customers"]
pipeline = [
    { "$match": { "address": "Highway 37" } },
```

```
{ "$group": { "_id": "$name", "count": { "$sum": 1 } } }  
]  
result = mycol.aggregate(pipeline)  
for x in result:  
    print(x)
```

10. Write a Python program to perform a text search on a MongoDB database.

solution:-

```
import pymongo  
myclient = pymongo.MongoClient("mongodb://localhost:27017/")  
mydb = myclient["mydatabase"]  
mycol = mydb["customers"]  
myquery = { "$text": { "$search": "apple" } }  
mydoc = mycol.find(myquery)  
for x in mydoc:  
    print(x)
```