Task 2: Submitted by: Dhanya Shetty

1. Write SQL statement select to display customer Full Name in one column, their
City and Amount of sales. We need data only for customers whose mother has brown
eyes.

 Solution:

 SELECT CONCAT(c.FirstName,' ',c.Lastname) as FullName, City, Amount
 FROM Customers c JOIN Sales s ON c.ID=s.CustomerID
 JOIN Address a ON s.CityID=a.ID
 JOIN Customers m ON c.MotherIDNumber = m.IDNumber
 WHERE c.MotherIDNumber is not null and m.EyeColor='Brown'
 ORDER BY Amount DESC;

 2. Write SQL statement select to display First Name and Last Name of users which
ordered 3 and morecourses. Use tables from below.
Solution:

 SELECT u.FirstName,u.LastName
 FROM Users u
 JOIN UOrder o ON u.ID=o.UserID
 GROUP BY u.FirstName,u.LastName
 HAVING COUNT(o.CourseID)>=3;

3. What will be the output of the below:

```sql
SELECT
SUM(p.Amount) AS Amount
FROM
Payments p
INNER JOIN Clients c ON p.ClientId = c.Id
INNER JOIN CAddress a ON c.Id = a.ClientId
WHERE
c.Name LIKE '%iro'
```

 Answer: Amount 1000.00

 Explanation: We have to find the sum of amount (from Payment table) of those clients
 whose name contains 'iro' (filtering based on specified pattern).

PYTHON questions:

1. What is tuple in Python? What is the difference between list and tuple?
Ans: A tuple is an immutable (not changing, that is cannot add, or remove or change elements
after creation) data type in Python. It is used to store multiple items in a single variable.
Example: t = ('a', 'b', 'c')
         print(t)

The main difference between a list and a tuple is that lists are mutable (can be changed after
creation), while tuples are immutable (cannot be changed).
Also, tuple syntax uses round brackets or parenthesis, while list syntax uses square brackets.

Example for Tuple: t = ('a', 'b', 'c')
　　　　　　　　print(t)

Example for List: l = ['apple', 'banana', 'cherry']
　　　　　　　print(l)

2. What are the rules for a local and global variable in Python?
Ans: Global variables are declared outside the functions. And, local variables are declared within the function.
The access of local variable is within a function. Whereas global variable can be accessed inside and outside the function.

3. What is Python's parameter passing mechanism? Name it and explain it.
Ans: Python's parameter passing is passing a parameter by object reference. This means that functions receive a reference to the object (not the actual object itself).

4. Write a method to open a text file and display its content?
Ans: A method to open a text file is open() and display its content using read().

5. You have two lists: strList = ["Vishesh", "For", "Python"] and valList = [1, 2] for the first two tasks and one list valList = [1, 2, 3] for third task. Write the sintax so you will get these results:

1) {'key2': ['Vishesh', 'For', 'Python'], 'key1': [1, 2]}
2) {'key1': [1, 2, ['vishesh', 'For', 'python']]}
3) {'1': [1, 2], '3': [3, 4], '2': [2, 3]} # Creating a dictionary of lists using list comprehension.
Ans:
1)
strList = ["Vishesh", "For", "Python"]

valList = [1, 2]

result = {

    'key2': strList,

    'key1': valList

}

print(result)

2)

strList = ["Vishesh", "For", "Python"]

valList = [1, 2]

result = {

    'key1': valList + [strList]

}

print(result)