BDTM: Big Data Tools for Managers
2nd Internal Question Paper [Set-B]

Q1. Demonstrate UPDATE & DELETE statements in MySQL.   [10]

Table: **EMPLOYEE**

ID	NAME	CITY	STATE	COUNTRY
1	AAA	PUNE	MAH	INDIA
2	BBB	MUMBAI		
3	CCC	TUMKUR	KAR	
4	DDD	BANGALORE		
5	EEE	GANDHINAGAR		

A. Update STATE as KAR for city BANGALORE
    UPDATE EMPLOYEE SET STATE=`KAR` WHERE CITY = `BANGALORE`;

B. Update value <u>INDIA</u> for Country for all the records, after updating Country should contains 'INDIA' values for entire table.
    UPDATE EMPLOYEE SET COUNTRY=`INDIA`;

C. DELETE the records where NAME is AAA
    DELETE FROM EMPLOYEE WHERE NAME =`AAA`;

D. DELETE the records where STATE is KAR
    DELETE FROM EMPLOYEE WHERE STATE =`KAR`;

E. Display all available records in EMPLOYEE table
    SELECT * FROM EMPLOYEE;

Q2. Demonstrate JOINS in MySQL for the given Table. [10]

Table: **Orders**

OrderID	CustomerID	OrderDate
10308	2	2022-08-15
10309	1	2022-08-26
10310	2	2022-09-01

Table: **Customers**

CustomerID	CustomerName	Country
1	John Todd	Germany
2	Dominic Dom	Mexico
3	Paul S	Mexico

A. Perform Inner Join with Orders & Customer Table

SELECT Orders.*, Customers.* FROM Orders
INNER JOIN Customers
ON Orders.CustomerID = Customers.CustomerID;

B. Create a MySQL View for right join with Orders & Customer Table
CREATE VIEW my_view AS
SELECT Orders.*, Customers.* FROM Orders
RIGHT JOIN Customers
ON Orders.CustomerID = Customers.CustomerID;

C. Use a View which created in Q2[B] to display data for right join queries
SELECT * FROM my_view;

D. Delete a MySQL View which created in Q2[B]
DROP VIEW my_view;

Q3. Perform SET operations on given MySQL Tables   [10]

Tables: **CUSTOMERS_1**, **CUSTOMERS_2**

    A. Display all the records and exclude duplicate records from CUSTOMER_1 and CUSTOMER_2 using MySQL SET operators.

```
SELECT * FROM CUSTOMER_1
UNION
SELECT * FROM CUSTOMER_2;
```

    B. Display common records from CUSTOMER_1 and CUSTOMER_2 tables.

```
SELECT * FROM CUSTOMER_1
INTERSECT
SELECT * FROM CUSTOMER_2;
```

Q4. [A] Perform basic operations on R Vector   [5]

    1. Create R vector for given elements (U, O, I, E, A)

```
my_vector <- c('U', 'O', 'I', 'E', 'A')
```

    2. Display the vector elements

```
print(my_vector)
```

    3. Display the length of R vector

```
print(my_vector)
or
length(my_vector)
```

    4. Sort vector elements in ascending order

```
sort(my_vector)
```

Q4. [B] Create and Display R Matrix for below given elements   [5]

$$\begin{bmatrix} 8 & 4 & 3 \\ -5 & 6 & -2 \\ 7 & 9 & -8 \end{bmatrix}$$

1. Create Matrix with given elements
    ```
    my_matrix <- matrix(c(8, 4, 3, -5, 6, -2, 7, 9, -8), nrow = 3, byrow = TRUE)
    ```

2. Display Matrix elements in R
    ```
    print(my_matrix)
    ```

Q5. Read Vehicle Park dataset and write R code for following statements.   [10]

About Dataset:

*   Vehicle Park data contains the no of vehicles are present on road or market in India from Year 2000 to 2022
*   **Columns:**
    *   YEAR: Vehicle Sales Year
    *   VEHICLE_TYPE: Type of vehicle sold to the market (Truck, Bus, Four & Two-wheeler, Others)
    *   BRAND: Vehicle brand & Manufacturer
    *   VEHICLE_COUNT: No of vehicle sold in market for a year
    *   AGE_GROUP: Age group of the vehicle
    *   AGE: Vehicle age represent how old vehicle
    *   RTO_REGISTRATION_YEAR: Year of vehicle registration

Write R Code for following statements:

A. Read (VEHICLE_PARK.csv) CSV file
    ```
    vehicle_park <- read.csv("VEHICLE_PARK.csv")
    ```

B. Display top 20 and bottom 55 records using head and tail command
    ```
    head(vehicle_park,20)
    tail(vehicle_park, 55)
    ```

C. Display quick summary of all the columns.
    ```
    summary(vehicle_park)
    ```

D. Display all the vehicles whose AGE is 5 years old
    ```
    vehicle_park[vehicle_park$AGE_GROUP == '5-6', ]
    ```

E. Display BRAND single columns from Vehicle Park data.
    ```
    vehicle_park$BRAND
    ```