## Lab 4 - DML

## (Insert, Update, Delete, Transactions - Commit, Rollback, Save point)

| Name: | R Chaitanya Madhav |
|---|---|
| SRN: | PES1UG20CS634 |
| Section: | K |

1. Insert the shared data into the respective tables using appropriate insert query.

**Insert into train_user(user_id, user_type, firstname, lastname, age, dob, pincode, street_number)**

**Insert(ADM_001,admin, Narendra, Modi, Null, 1989-04-14, 600047, street_number);**

**And so on…**

```
Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.101 sec)

Query OK, 20 rows affected (0.001 sec)
Records: 20  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.095 sec)

Query OK, 9 rows affected (0.001 sec)
Records: 9  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.094 sec)

Query OK, 13 rows affected (0.001 sec)
Records: 13  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.096 sec)

Query OK, 44 rows affected (0.002 sec)
Records: 44  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.096 sec)

Query OK, 13 rows affected (0.002 sec)
Records: 13  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.112 sec)

Query OK, 21 rows affected (0.001 sec)
Records: 21  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.097 sec)

Query OK, 6 rows affected (0.001 sec)
Records: 6  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.096 sec)

Query OK, 33 rows affected (0.002 sec)
Records: 33  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.094 sec)

Query OK, 66 rows affected (0.002 sec)
Records: 66  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.108 sec)
```

```
Query OK, 0 rows affected (0.210 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.214 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.212 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.212 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.215 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.218 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.208 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.212 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.195 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.211 sec)
Records: 0  Duplicates: 0  Warnings: 0

Query OK, 20 rows affected (0.197 sec)
Records: 20  Duplicates: 0  Warnings: 0

Query OK, 13 rows affected (0.192 sec)
Records: 13  Duplicates: 0  Warnings: 0

Query OK, 44 rows affected (0.193 sec)
Records: 44  Duplicates: 0  Warnings: 0

Query OK, 13 rows affected (0.197 sec)
Records: 13  Duplicates: 0  Warnings: 0

Query OK, 21 rows affected (0.191 sec)
Records: 21  Duplicates: 0  Warnings: 0

Query OK, 66 rows affected (0.195 sec)
Records: 66  Duplicates: 0  Warnings: 0

Query OK, 103 rows affected (0.197 sec)
Records: 103  Duplicates: 0  Warnings: 0

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

Query OK, 0 rows affected (0.000 sec)

MariaDB [629_rrs]>
```

```
MariaDB [cs634_rrs]> select * from train_user;
+---------+-----------+------------+-----------+------+------------+---------+------------------------------+
| user_id | user_type | firstname  | lastname  | age  | dob        | pincode | street_number                |
+---------+-----------+------------+-----------+------+------------+---------+------------------------------+
| ADM_001 | ADMIN     | Narendra   | Modi      | NULL | 1989-04-14 | 600047  | Old Jail Road                |
| ADM_002 | ADMIN     | Droupadi   | Murmu     | NULL | 1990-04-14 | 640012  | High Street                  |
| ADM_003 | ADMIN     | Manmohan   | Singh     | NULL | 1991-04-14 | 575003  | Pumpwell Road                |
| USR_001 | PSGR      | Ajit       | Ullal     | NULL | 1971-01-01 | 560001  | 10, Janpath                  |
| USR_002 | PSGR      | Muhammed   | Ali       | NULL | 2000-10-09 | 560003  | 10, Downing                  |
| USR_003 | PSGR      | Sai Deepak | Reddy     | NULL | 1996-12-12 | 600001  | 14, Kailsh Marg              |
| USR_004 | PSGR      | Rudra      | Agarwal   | NULL | 1996-12-13 | 600042  | 5, Lohia Garden              |
| USR_005 | PSGR      | Rahul      | Khanna    | NULL | 1997-12-14 | 600067  | 1, Pink Street               |
| USR_006 | PSGR      | Nirmala    | Seturaman | NULL | 1998-12-15 | 560105  | 3, Blue Avenue               |
| USR_007 | PSGR      | Smriti     | Irani     | NULL | 1999-12-16 | 575014  | 4, Banyan Avenie             |
| USR_008 | PSGR      | Ajit       | Sethi     | NULL | 1966-04-14 | 575001  | 6, Poes Garden               |
| USR_009 | PSGR      | Arjun      | Allu      | NULL | 1967-04-08 | 575020  | 7, Dhamaka street            |
| USR_010 | PSGR      | Samanta    | Prabhu    | NULL | 1968-04-14 | 600042  | 8, Clone Colony              |
| USR_011 | PSGR      | Kiran      | Bedi      | NULL | 1969-04-14 | 560003  | 56, Brigade Road             |
| USR_012 | PSGR      | Rahul      | Gandhi    | NULL | 1970-04-08 | 475001  | Mirza road                   |
| USR_013 | PSGR      | Rashkit    | Shetty    | NULL | 1971-04-14 | 560009  | JC Road                      |
| USR_014 | PSGR      | Rishi      | Sunak     | NULL | 1972-04-14 | 600034  | Anna Sali                    |
| USR_015 | PSGR      | Vedavalli  | Srinath   | NULL | 1973-04-14 | 560054  | Church Street, Bangalore     |
| USR_016 | PSGR      | Subbu      | Saravana  | NULL | 1974-04-14 | 600043  | American Street              |
| USR_017 | PSGR      | Sheela     | Dixit     | NULL | 1975-04-08 | 560048  | Kasturba Road                |
| USR_018 | PSGR      | Margaret   | Alva      | NULL | 1976-04-14 | 560008  | New BEL Road                 |
| USR_019 | PSGR      | Arun       | Kumar     | NULL | 1977-04-14 | 600046  | Mint Street                  |
| USR_020 | PSGR      | Anshu      | Bhardwaj  | NULL | 1978-04-14 | 575001  | KSR Road                     |
| USR_021 | PSGR      | Suma       | Sampat    | NULL | 1979-04-08 | 560012  | Old Airport Road, Bangalore  |
| USR_022 | PSGR      | Srihari    | Udupa     | NULL | 1980-04-14 | 560015  | Suranjan Das Road            |
| USR_023 | PSGR      | Satish     | Kotian    | NULL | 1981-04-14 | 600044  | T Nagar                      |
| USR_024 | PSGR      | Shradha    | Nayar     | NULL | 1982-04-08 | 560006  | M G Road, Bangalore          |
| USR_025 | PSGR      | Manisha    | Solanki   | NULL | 1983-04-08 | 575030  | M G Road                     |
| USR_026 | PSGR      | Bharti     | Devgan    | NULL | 1984-04-14 | 560059  | NAL Wind Tunnel Road         |
| USR_027 | PSGR      | Roopa      | Ram       | NULL | 1985-04-14 | 575023  | Bunder Road                  |
```

```
MariaDB [cs634_rrs]> UPDATE train_user SET age = DATE_FORMAT(FROM_DAYS(DATEDIFF(now(),DOB)),'%Y')+0;
Query OK, 33 rows affected (0.016 sec)
Rows matched: 33  Changed: 33  Warnings: 0

MariaDB [cs634_rrs]> select * from train_user;
+---------+-----------+------------+------------+------+------------+---------+----------------------------+
| user_id | user_type | firstname  | lastname   | age  | dob        | pincode | street_number              |
+---------+-----------+------------+------------+------+------------+---------+----------------------------+
| ADM_001 | ADMIN     | Narendra   | Modi       |   33 | 1989-04-14 | 600047  | Old Jail Road              |
| ADM_002 | ADMIN     | Droupadi   | Murmu      |   32 | 1990-04-14 | 640012  | High Street                |
| ADM_003 | ADMIN     | Manmohan   | Singh      |   31 | 1991-04-08 | 575003  | Pumpwell Road              |
| USR_001 | PSGR      | Ajit       | Ullal      |   51 | 1971-01-01 | 560001  | 10, Janpath                |
| USR_002 | PSGR      | Muhammed   | Ali        |   21 | 2000-10-09 | 560003  | 10, Downing                |
| USR_003 | PSGR      | Sai Deepak | Reddy      |   25 | 1996-12-12 | 600001  | 14, Kailsh Marg            |
| USR_004 | PSGR      | Rudra      | Agarwal    |   25 | 1996-12-13 | 600042  | 5, Lohia Garden            |
| USR_005 | PSGR      | Rahul      | Khanna     |   24 | 1997-12-14 | 600067  | 1, Pink Street             |
| USR_006 | PSGR      | Nirmala    | Seturaman  |   23 | 1998-12-15 | 560105  | 3, Blue Avenue             |
| USR_007 | PSGR      | Smriti     | Irani      |   22 | 1999-12-16 | 575014  | 4, Banyan Avenie           |
| USR_008 | PSGR      | Ajit       | Sethi      |   56 | 1966-04-14 | 575001  | 6, Poes Garden             |
| USR_009 | PSGR      | Arjun      | Allu       |   55 | 1967-04-08 | 575020  | 7, Dhamaka street          |
| USR_010 | PSGR      | Samanta    | Prabhu     |   54 | 1968-04-14 | 600042  | 8, Clone Colony            |
| USR_011 | PSGR      | Kiran      | Bedi       |   53 | 1969-04-14 | 560003  | 56, Brigade Road           |
| USR_012 | PSGR      | Rahul      | Gandhi     |   52 | 1970-04-08 | 475001  | Mirza road                 |
| USR_013 | PSGR      | Rashkit    | Shetty     |   51 | 1971-04-14 | 560009  | JC Road                    |
| USR_014 | PSGR      | Rishi      | Sunak      |   50 | 1972-04-14 | 600034  | Anna Sali                  |
| USR_015 | PSGR      | Vedavalli  | Srinath    |   49 | 1973-04-14 | 560054  | Church Street, Bangalore   |
| USR_016 | PSGR      | Subbu      | Saravana   |   48 | 1974-04-14 | 600043  | American Street            |
| USR_017 | PSGR      | Sheela     | Dixit      |   47 | 1975-04-08 | 560048  | Kasturba Road              |
| USR_018 | PSGR      | Margaret   | Alva       |   46 | 1976-04-14 | 560008  | New BEL Road               |
| USR_019 | PSGR      | Arun       | Kumar      |   45 | 1977-04-14 | 600046  | Mint Street                |
| USR_020 | PSGR      | Anshu      | Bhardwaj   |   44 | 1978-04-14 | 575001  | KSR Road                   |
| USR_021 | PSGR      | Suma       | Sampat     |   43 | 1979-04-08 | 560012  | Old Airport Road, Bangalore|
| USR_022 | PSGR      | Srihari    | Udupa      |   42 | 1980-04-14 | 560015  | Suranjan Das Road          |
| USR_023 | PSGR      | Satish     | Kotian     |   41 | 1981-04-14 | 600044  | T Nagar                    |
| USR_024 | PSGR      | Shradha    | Nayar      |   40 | 1982-04-08 | 560006  | M G Road, Bangalore        |
| USR_025 | PSGR      | Manisha    | Solanki    |   39 | 1983-04-08 | 575030  | M G Road                   |
| USR_026 | PSGR      | Bharti     | Devgan     |   38 | 1984-04-14 | 560059  | NAL Wind Tunnel Road       |
| USR_027 | PSGR      | Roopa      | Ram        |   37 | 1985-04-14 | 575023  | Bunder Road                |
| USR_028 | PSGR      | Pallavi    | Ram        |   36 | 1986-04-08 | 560044  | Lavelle Road               |
| USR_029 | PSGR      | Ravi       | Naik       |   35 | 1987-04-14 | 600045  | Thiru V ka Salai           |
| USR_030 | PSGR      | Virat      | Murthy     |   34 | 1988-04-14 | 575011  | Bejai New Road             |
+---------+-----------+------------+------------+------+------------+---------+----------------------------+
33 rows in set (0.001 sec)
```

```
MariaDB [cs634_rrs]> select * from route_info;
+----------------+--------------+------------------+----------------+----------+----------+
| from_station_no | to_station_no | from_station_name | to_station_name | distance | train_no |
+----------------+--------------+------------------+----------------+----------+----------+
|              1 |            2 | Mangaluru        | Kannur          |      131 |    25260 |
|              1 |            3 | Mangaluru        | Palakkad        |      351 |    25260 |
|              1 |            4 | Mangaluru        | Chennai         |      481 |    25260 |
|              2 |            3 | Kannur           | Palakkad        |      220 |    25260 |
|              2 |            4 | Kannur           | Chennai         |      350 |    25260 |
|              4 |            4 | Palakkad         | Chennai         |      130 |    25260 |
|              1 |            2 | Chennai          | Palakkad        |      130 |    25261 |
|              1 |            3 | Chennai          | Kannur          |      350 |    25261 |
|              1 |            4 | Chennai          | Mangaluru       |      481 |    25261 |
|              2 |            3 | Palakkad         | Kannur          |      220 |    25261 |
|              2 |            4 | Palakkad         | Mangaluru       |      351 |    25261 |
|              3 |            4 | Kannur           | Mangaluru       |      131 |    25261 |
|              1 |            2 | Mangaluru        | Subramanya      |      195 |    58450 |
|              1 |            3 | Mangaluru        | Mysore          |      365 |    58450 |
|              1 |            4 | Mangaluru        | Bengaluru       |      504 |    58450 |
|              2 |            3 | Subramanya       | Mysore          |      170 |    58450 |
|              2 |            4 | Subramanya       | Bengaluru       |      309 |    58450 |
|              3 |            4 | Mysore           | Bengaluru       |      139 |    58450 |
|              1 |            2 | Bengaluru        | Mysore          |      139 |    58451 |
|              1 |            3 | Bengaluru        | Subramanya      |      309 |    58451 |
|              1 |            4 | Bengaluru        | Mangaluru       |      503 |    58451 |
|              2 |            3 | Mysore           | Subramanya      |      170 |    58451 |
|              2 |            4 | Mysore           | Mangaluru       |      364 |    58451 |
|              3 |            4 | Subramanya       | Mangaluru       |      194 |    58451 |
|              1 |            2 | Chennai          | Sholingur       |       90 |    62620 |
|              1 |            3 | Chennai          | Katpadi         |      129 |    62620 |
|              1 |            4 | Chennai          | Bangarpet       |      290 |    62620 |
|              1 |            5 | Chennai          | Bengaluru       |      361 |    62620 |
|              2 |            3 | Sholingur        | Katpadi         |       39 |    62620 |
|              2 |            4 | Sholingur        | Bangarpet       |      200 |    62620 |
|              2 |            5 | Sholingur        | Chennai         |      271 |    62620 |
|              3 |            4 | Katpadi          | Bangarpet       |      161 |    62620 |
|              3 |            5 | Katpadi          | Chennai         |      232 |    62620 |
|              4 |            5 | Bangarpet        | Bengaluru       |       71 |    62620 |
|              1 |            2 | Bengaluru        | Bangarpet       |       71 |    62621 |
|              1 |            3 | Bengaluru        | Katpadi         |      232 |    62621 |
|              1 |            4 | Bengaluru        | Sholigur        |      272 |    62621 |
|              1 |            5 | Bengaluru        | Chennai         |      362 |    62621 |
|              2 |            3 | Bangarpet        | Katpadi         |      161 |    62621 |
|              2 |            4 | Bangarpet        | Sholigur        |      201 |    62621 |
```

2. Calculate and update age attribute in User Table.

**UPDATE train_user SET age = DATE_FORMAT(FROM_DAYS(DATEDIFF(now(),DOB)),'%Y')+0;**

```
MariaDB [cs634_rrs]> select * from train_user;
+---------+-----------+------------+-----------+------+------------+---------+------------------------------+
| user_id | user_type | firstname  | lastname  | age  | dob        | pincode | street_number                |
+---------+-----------+------------+-----------+------+------------+---------+------------------------------+
| ADM_001 | ADMIN     | Narendra   | Modi      | NULL | 1989-04-14 | 600047  | Old Jail Road                |
| ADM_002 | ADMIN     | Droupadi   | Murmu     | NULL | 1990-04-14 | 640012  | High Street                  |
| ADM_003 | ADMIN     | Manmohan   | Singh     | NULL | 1991-04-08 | 575003  | Pumpwell Road                |
| USR_001 | PSGR      | Ajit       | Ullal     | NULL | 1971-01-01 | 560001  | 10, Janpath                  |
| USR_002 | PSGR      | Muhammed   | Ali       | NULL | 2000-10-09 | 560003  | 10, Downing                  |
| USR_003 | PSGR      | Sai Deepak | Reddy     | NULL | 1996-12-12 | 600001  | 14, Kailsh Marg              |
| USR_004 | PSGR      | Rudra      | Agarwal   | NULL | 1996-12-13 | 600042  | 5, Lohia Garden              |
| USR_005 | PSGR      | Rahul      | Khanna    | NULL | 1997-12-14 | 600067  | 1, Pink Street               |
| USR_006 | PSGR      | Nirmala    | Seturaman | NULL | 1998-12-15 | 560105  | 3, Blue Avenue               |
| USR_007 | PSGR      | Smriti     | Irani     | NULL | 1999-12-16 | 575014  | 4, Banyan Avenie             |
| USR_008 | PSGR      | Ajit       | Sethi     | NULL | 1966-04-14 | 575001  | 6, Poes Garden               |
| USR_009 | PSGR      | Arjun      | Allu      | NULL | 1967-04-08 | 575020  | 7, Dhamaka street            |
| USR_010 | PSGR      | Samanta    | Prabhu    | NULL | 1968-04-14 | 600042  | 8, Clone Colony              |
| USR_011 | PSGR      | Kiran      | Bedi      | NULL | 1969-04-14 | 560003  | 56, Brigade Road             |
| USR_012 | PSGR      | Rahul      | Gandhi    | NULL | 1970-04-08 | 475001  | Mirza road                   |
| USR_013 | PSGR      | Rashkit    | Shetty    | NULL | 1971-04-14 | 560009  | JC Road                      |
| USR_014 | PSGR      | Rishi      | Sunak     | NULL | 1972-04-14 | 600034  | Anna Sali                    |
| USR_015 | PSGR      | Vedavalli  | Srinath   | NULL | 1973-04-14 | 560054  | Church Street, Bangalore     |
| USR_016 | PSGR      | Subbu      | Saravana  | NULL | 1974-04-14 | 600043  | American Street              |
| USR_017 | PSGR      | Sheela     | Dixit     | NULL | 1975-04-08 | 560048  | Kasturba Road                |
| USR_018 | PSGR      | Margaret   | Alva      | NULL | 1976-04-14 | 560008  | New BEL Road                 |
| USR_019 | PSGR      | Arun       | Kumar     | NULL | 1977-04-14 | 600046  | Mint Street                  |
| USR_020 | PSGR      | Anshu      | Bhardwaj  | NULL | 1978-04-14 | 575001  | KSR Road                     |
| USR_021 | PSGR      | Suma       | Sampat    | NULL | 1979-04-08 | 560012  | Old Airport Road, Bangalore  |
| USR_022 | PSGR      | Srihari    | Udupa     | NULL | 1980-04-14 | 560015  | Suranjan Das Road            |
| USR_023 | PSGR      | Satish     | Kotian    | NULL | 1981-04-14 | 600044  | T Nagar                      |
| USR_024 | PSGR      | Shradha    | Nayar     | NULL | 1982-04-08 | 560006  | M G Road, Bangalore          |
| USR_025 | PSGR      | Manisha    | Solanki   | NULL | 1983-04-08 | 575030  | M G Road                     |
| USR_026 | PSGR      | Bharti     | Devgan    | NULL | 1984-04-14 | 560059  | NAL Wind Tunnel Road         |
| USR_027 | PSGR      | Roopa      | Ram       | NULL | 1985-04-14 | 575023  | Bunder Road                  |
```

```
MariaDB [cs634_rrs]> UPDATE train_user SET age = DATE_FORMAT(FROM_DAYS(DATEDIFF(now(),DOB)),'%Y')+0;
Query OK, 33 rows affected (0.016 sec)
Rows matched: 33  Changed: 33  Warnings: 0

MariaDB [cs634_rrs]> select * from train_user;
+---------+-----------+------------+-----------+-----+------------+---------+------------------------------+
| user_id | user_type | firstname  | lastname  | age | dob        | pincode | street_number                |
+---------+-----------+------------+-----------+-----+------------+---------+------------------------------+
| ADM_001 | ADMIN     | Narendra   | Modi      |  33 | 1989-04-14 | 600047  | Old Jail Road                |
| ADM_002 | ADMIN     | Droupadi   | Murmu     |  32 | 1990-04-14 | 640012  | High Street                  |
| ADM_003 | ADMIN     | Manmohan   | Singh     |  31 | 1991-04-08 | 575003  | Pumpwell Road                |
| USR_001 | PSGR      | Ajit       | Ullal     |  51 | 1971-01-01 | 560001  | 10, Janpath                  |
| USR_002 | PSGR      | Muhammed   | Ali       |  21 | 2000-10-09 | 560003  | 10, Downing                  |
| USR_003 | PSGR      | Sai Deepak | Reddy     |  25 | 1996-12-12 | 600001  | 14, Kailsh Marg              |
| USR_004 | PSGR      | Rudra      | Agarwal   |  25 | 1996-12-13 | 600042  | 5, Lohia Garden              |
| USR_005 | PSGR      | Rahul      | Khanna    |  24 | 1997-12-14 | 600067  | 1, Pink Street               |
| USR_006 | PSGR      | Nirmala    | Seturaman |  23 | 1998-12-15 | 560105  | 3, Blue Avenue               |
| USR_007 | PSGR      | Smriti     | Irani     |  22 | 1999-12-16 | 575014  | 4, Banyan Avenie             |
| USR_008 | PSGR      | Ajit       | Sethi     |  56 | 1966-04-14 | 575001  | 6, Poes Garden               |
| USR_009 | PSGR      | Arjun      | Allu      |  55 | 1967-04-08 | 575020  | 7, Dhamaka street            |
| USR_010 | PSGR      | Samanta    | Prabhu    |  54 | 1968-04-14 | 600042  | 8, Clone Colony              |
| USR_011 | PSGR      | Kiran      | Bedi      |  53 | 1969-04-14 | 560003  | 56, Brigade Road             |
| USR_012 | PSGR      | Rahul      | Gandhi    |  52 | 1970-04-08 | 475001  | Mirza road                   |
| USR_013 | PSGR      | Rashkit    | Shetty    |  51 | 1971-04-14 | 560009  | JC Road                      |
| USR_014 | PSGR      | Rishi      | Sunak     |  50 | 1972-04-14 | 600034  | Anna Sali                    |
| USR_015 | PSGR      | Vedavalli  | Srinath   |  49 | 1973-04-14 | 560054  | Church Street, Bangalore     |
| USR_016 | PSGR      | Subbu      | Saravana  |  48 | 1974-04-14 | 600043  | American Street              |
| USR_017 | PSGR      | Sheela     | Dixit     |  47 | 1975-04-14 | 560048  | Kasturba Road                |
| USR_018 | PSGR      | Margaret   | Alva      |  46 | 1976-04-14 | 560008  | New BEL Road                 |
| USR_019 | PSGR      | Arun       | Kumar     |  45 | 1977-04-14 | 600046  | Mint Street                  |
| USR_020 | PSGR      | Anshu      | Bhardwaj  |  44 | 1978-04-14 | 575001  | KSR Road                     |
| USR_021 | PSGR      | Suma       | Sampat    |  43 | 1979-04-08 | 560012  | Old Airport Road, Bangalore  |
| USR_022 | PSGR      | Srihari    | Udupa     |  42 | 1980-04-14 | 560015  | Suranjan Das Road            |
| USR_023 | PSGR      | Satish     | Kotian    |  41 | 1981-04-14 | 600044  | T Nagar                      |
| USR_024 | PSGR      | Shradha    | Nayar     |  40 | 1982-04-08 | 560006  | M G Road, Bangalore          |
| USR_025 | PSGR      | Manisha    | Solanki   |  39 | 1983-04-08 | 575030  | M G Road                     |
| USR_026 | PSGR      | Bharti     | Devgan    |  38 | 1984-04-14 | 560059  | NAL Wind Tunnel Road         |
| USR_027 | PSGR      | Roopa      | Ram       |  37 | 1985-04-14 | 575023  | Bunder Road                  |
| USR_028 | PSGR      | Pallavi    | Ram       |  36 | 1986-04-08 | 560044  | Lavelle Road                 |
| USR_029 | PSGR      | Ravi       | Naik      |  35 | 1987-04-14 | 600045  | Thiru V ka Salai             |
| USR_030 | PSGR      | Virat      | Murthy    |  34 | 1988-04-14 | 575011  | Bejai New Road               |
+---------+-----------+------------+-----------+-----+------------+---------+------------------------------+
33 rows in set (0.001 sec)
```

3. Display all the route information whose distance falls in a range from 70 to 150 km.

## select * from route_info where distance between 70 and 150;

```
MariaDB [cs634_rrs]> select * from route_info;
+----------------+--------------+------------------+----------------+----------+----------+
| from_station_no | to_station_no | from_station_name | to_station_name | distance | train_no |
+----------------+--------------+------------------+----------------+----------+----------+
|              1 |            2 | Mangaluru        | Kannur         |      131 |    25260 |
|              1 |            3 | Mangaluru        | Palakkad       |      351 |    25260 |
|              1 |            4 | Mangaluru        | Chennai        |      481 |    25260 |
|              2 |            3 | Kannur           | Palakkad       |      220 |    25260 |
|              2 |            4 | Kannur           | Chennai        |      350 |    25260 |
|              4 |            4 | Palakkad         | Chennai        |      130 |    25260 |
|              1 |            2 | Chennai          | Palakkad       |      130 |    25261 |
|              1 |            3 | Chennai          | Kannur         |      350 |    25261 |
|              1 |            4 | Chennai          | Mangaluru      |      481 |    25261 |
|              2 |            3 | Palakkad         | Kannur         |      220 |    25261 |
|              2 |            4 | Palakkad         | Mangaluru      |      351 |    25261 |
|              3 |            4 | Kannur           | Mangaluru      |      131 |    25261 |
|              1 |            2 | Mangaluru        | Subramanya     |      195 |    58450 |
|              1 |            3 | Mangaluru        | Mysore         |      365 |    58450 |
|              1 |            4 | Mangaluru        | Bengaluru      |      504 |    58450 |
|              2 |            3 | Subramanya       | Mysore         |      170 |    58450 |
|              2 |            4 | Subramanya       | Bengaluru      |      309 |    58450 |
|              3 |            4 | Mysore           | Bengaluru      |      139 |    58450 |
|              1 |            2 | Bengaluru        | Mysore         |      139 |    58451 |
|              1 |            3 | Bengaluru        | Subramanya     |      309 |    58451 |
|              1 |            4 | Bengaluru        | Mangaluru      |      503 |    58451 |
|              2 |            3 | Mysore           | Subramanya     |      170 |    58451 |
|              2 |            4 | Mysore           | Mangaluru      |      364 |    58451 |
|              3 |            4 | Subramanya       | Mangaluru      |      194 |    58451 |
|              1 |            2 | Chennai          | Sholingur      |       90 |    62620 |
|              1 |            3 | Chennai          | Katpadi        |      129 |    62620 |
|              1 |            4 | Chennai          | Bangarpet      |      290 |    62620 |
|              1 |            5 | Chennai          | Bengaluru      |      361 |    62620 |
|              2 |            3 | Sholingur        | Katpadi        |       39 |    62620 |
|              2 |            4 | Sholingur        | Bangarpet      |      200 |    62620 |
|              2 |            5 | Sholingur        | Chennai        |      271 |    62620 |
|              3 |            4 | Katpadi          | Bangarpet      |      161 |    62620 |
|              3 |            5 | Katpadi          | Chennai        |      232 |    62620 |
|              4 |            5 | Bangarpet        | Bengaluru      |       71 |    62620 |
|              1 |            2 | Bengaluru        | Bangarpet      |       71 |    62621 |
|              1 |            3 | Bengaluru        | Katpadi        |      232 |    62621 |
|              1 |            4 | Bengaluru        | Sholigur       |      272 |    62621 |
|              1 |            5 | Bengaluru        | Chennai        |      362 |    62621 |
|              2 |            3 | Bangarpet        | Katpadi        |      161 |    62621 |
|              2 |            4 | Bangarpet        | Sholigur       |      201 |    62621 |
```

```
MariaDB [cs634_rrs]> select * from route_info where distance between 70 and 150;
+----------------+--------------+------------------+----------------+----------+----------+
| from_station_no | to_station_no | from_station_name | to_station_name | distance | train_no |
+----------------+--------------+------------------+----------------+----------+----------+
|              1 |            2 | Mangaluru        | Kannur         |      131 |    25260 |
|              4 |            4 | Palakkad         | Chennai        |      130 |    25260 |
|              1 |            2 | Chennai          | Palakkad       |      130 |    25261 |
|              3 |            4 | Kannur           | Mangaluru      |      131 |    25261 |
|              3 |            4 | Mysore           | Bengaluru      |      139 |    58450 |
|              1 |            2 | Bengaluru        | Mysore         |      139 |    58451 |
|              1 |            2 | Chennai          | Sholingur      |       90 |    62620 |
|              1 |            3 | Chennai          | Katpadi        |      129 |    62620 |
|              4 |            5 | Bangarpet        | Bengaluru      |       71 |    62620 |
|              1 |            2 | Bengaluru        | Bangarpet      |       71 |    62621 |
|              3 |            5 | Katpadi          | Chennai        |      130 |    62621 |
|              4 |            5 | Sholingur        | Chennai        |       90 |    62621 |
+----------------+--------------+------------------+----------------+----------+----------+
12 rows in set (0.001 sec)

MariaDB [cs634_rrs]> _
```

4.  Display the train route information which are run between Chennai and Sholingur.

**select * from route_info where from_station_name = 'Chennai' and to_station_name = 'Sholingur';**

```
MariaDB [cs634_rrs]> select * from route_info where from_station_name = 'Chennai' and to_station_name = 'Sholingur';
+-----------------+---------------+------------------+-----------------+----------+----------+
| from_station_no | to_station_no | from_station_name | to_station_name | distance | train_no |
+-----------------+---------------+------------------+-----------------+----------+----------+
|               1 |             2 | Chennai          | Sholingur       |       90 |    62620 |
+-----------------+---------------+------------------+-----------------+----------+----------+
1 row in set (0.001 sec)

MariaDB [cs634_rrs]>
```

5.Display the train details whose type is not mail.

**select * from train where train_type not in ('Mail');**

```
ariaDB [cs634_rrs]> select * from train;
+----------+------------------+------------+-----------+-------------+--------------+
| train_no | train_name       | train_type | source    | destination | availability |
+----------+------------------+------------+-----------+-------------+--------------+
|    25260 | Chennai Mail     | Mail       | Mangaluru | Chennai     | Yes          |
|    25261 | Managaluru Mail  | Mail       | Chennai   | Mangaluru   | Yes          |
|    58450 | MAN-BEN Express  | Fast       | Mangaluru | Bengaluru   | yes          |
|    58451 | BEN-MAN Express  | Fast       | Bengaluru | Mangaluru   | yes          |
|    62620 | CHE-BEN Shatabdi | Superfast  | Chennai   | Bengaluru   | No           |
|    62621 | BEN-CHE Shatabdi | Superfast  | Bengaluru | Chennai     | yes          |
+----------+------------------+------------+-----------+-------------+--------------+
 rows in set (0.003 sec)

ariaDB [cs634_rrs]> select * from train where train_type not in ('Mail');
+----------+------------------+------------+-----------+-------------+--------------+
| train_no | train_name       | train_type | source    | destination | availability |
+----------+------------------+------------+-----------+-------------+--------------+
|    58450 | MAN-BEN Express  | Fast       | Mangaluru | Bengaluru   | yes          |
|    58451 | BEN-MAN Express  | Fast       | Bengaluru | Mangaluru   | yes          |
|    62620 | CHE-BEN Shatabdi | Superfast  | Chennai   | Bengaluru   | No           |
|    62621 | BEN-CHE Shatabdi | Superfast  | Bengaluru | Chennai     | yes          |
+----------+------------------+------------+-----------+-------------+--------------+
 rows in set (0.001 sec)

ariaDB [cs634_rrs]>
```

6. Display the train name which goes to Chennai from Bangalore.

**select * from train where source = 'Bengaluru' and destination = 'Chennai';**

```
MariaDB [cs634_rrs]> select * from train where source = 'Bengaluru' and destination = 'Chennai';
+----------+------------------+------------+-----------+-------------+--------------+
| train_no | train_name       | train_type | source    | destination | availability |
+----------+------------------+------------+-----------+-------------+--------------+
|    62621 | BEN-CHE Shatabdi | Superfast  | Bengaluru | Chennai     | yes          |
+----------+------------------+------------+-----------+-------------+--------------+
1 row in set (0.001 sec)

MariaDB [cs634_rrs]>
```

7. Display the list of trains starting from Chennai after 8:00.

**select \* from ticket where departure = 'Chennai' and departure_time > 8;**

```
MariaDB [cs634_rrs]> select * from ticket;
+--------+----------+------------+-----------+-----------+----------------+-------------+--------------+------------+------------------+----------------+
| pnr    | train_no | travel_date| departure | arrival   | departure_time | arrival_time| passenger_id | train_type | compartment_type | compartment_no |
+--------+----------+------------+-----------+-----------+----------------+-------------+--------------+------------+------------------+----------------+
| PNR001 |    62621 | 2022-08-07 | Bengaluru | Chennai   | 16:00:00       | 20:30:00    | ADM_001      | Superfast  | I Class          | F01            |
| PNR002 |    62620 | 2022-08-14 | Chennai   | Bengaluru | 08:00:00       | 12:25:00    | ADM_001      | Superfast  | I Class          | F02            |
| PNR003 |    25261 | 2022-08-01 | Chennai   | Mangaluru | 18:00:00       | 07:30:00    | ADM_003      | Mail       | III Class        | G02            |
| PNR004 |    25260 | 2022-08-15 | Mangaluru | Chennai   | 19:15:00       | 08:00:00    | ADM_003      | Mail       | II Class         | S02            |
| PNR005 |    58451 | 2022-08-03 | Bengaluru | Mangaluru | 06:00:00       | 14:00:00    | USR_002      | Fast       | III Class        | G01            |
| PNR006 |    58450 | 2033-08-04 | Mangaluru | Bengaluru | 08:00:00       | 10:15:00    | USR_002      | Fast       | II Class         | S01            |
| PNR007 |    62621 | 2022-08-07 | Bangarpet | Chennai   | 18:00:00       | 20:30:00    | ADM_002      | Superfast  | II Class         | S01            |
| PNR008 |    62620 | 2022-08-02 | Chennai   | Bangarpet | 08:00:00       | 09:00:00    | ADM_002      | Superfast  | I Class          | F01            |
| PNR010 |    25260 | 2022-08-19 | Mangaluru | Kannur    | 19:15:00       | 23:15:00    | USR_007      | Mail       | II Class         | S01            |
| PNR011 |    62621 | 2022-08-22 | Katapadi  | Chennai   | 19:00:00       | 20:30:00    | USR_008      | Superfast  | I Class          | F01            |
| PNR012 |    58451 | 2022-08-11 | Subramanya| Mangaluru | 11:00:00       | 14:00:00    | USR_009      | Fast       | I Class          | F01            |
| PNR014 |    25260 | 2022-08-17 | Kannur    | Palakkad  | 23:15:00       | 04:30:00    | USR_010      | Mail       | II Class         | S01            |
| PNR015 |    25260 | 2022-08-05 | Palakkad  | Chennai   | 04:30:00       | 08:00:00    | USR_012      | Mail       | II Class         | S01            |
+--------+----------+------------+-----------+-----------+----------------+-------------+--------------+------------+------------------+----------------+
13 rows in set (0.003 sec)
```

```
MariaDB [cs634_rrs]> select * from ticket where departure = 'Chennai' and departure_time > 8;
+--------+----------+------------+-----------+-----------+----------------+-------------+--------------+------------+------------------+----------------+
| pnr    | train_no | travel_date| departure | arrival   | departure_time | arrival_time| passenger_id | train_type | compartment_type | compartment_no |
+--------+----------+------------+-----------+-----------+----------------+-------------+--------------+------------+------------------+----------------+
| PNR002 |    62620 | 2022-08-14 | Chennai   | Bengaluru | 08:00:00       | 12:25:00    | ADM_001      | Superfast  | I Class          | F02            |
| PNR003 |    25261 | 2022-08-01 | Chennai   | Mangaluru | 18:00:00       | 07:30:00    | ADM_003      | Mail       | III Class        | G02            |
| PNR008 |    62620 | 2022-08-02 | Chennai   | Bangarpet | 08:00:00       | 09:00:00    | ADM_002      | Superfast  | I Class          | F01            |
+--------+----------+------------+-----------+-----------+----------------+-------------+--------------+------------+------------------+----------------+
3 rows in set (0.012 sec)

MariaDB [cs634_rrs]>
```

8. Display the list of users who are born between 1980 to 1990.

**select \* from train_user where dob between '1980-00-00' and '1990-00-00';**

```
MariaDB [cs634_rrs]> select * from train_user where dob between '1980-00-00' and '1990-00-00';
+---------+-----------+-----------+----------+-----+------------+---------+----------------------+
| user_id | user_type | firstname | lastname | age | dob        | pincode | street_number        |
+---------+-----------+-----------+----------+-----+------------+---------+----------------------+
| ADM_001 | ADMIN     | Narendra  | Modi     |  33 | 1989-04-14 | 600047  | Old Jail Road        |
| USR_022 | PSGR      | Srihari   | Udupa    |  42 | 1980-04-14 | 560015  | Suranjan Das Road    |
| USR_023 | PSGR      | Satish    | Kotian   |  41 | 1981-04-14 | 600044  | T Nagar              |
| USR_024 | PSGR      | Shradha   | Nayar    |  40 | 1982-04-08 | 560006  | M G Road, Bangalore  |
| USR_025 | PSGR      | Manisha   | Solanki  |  39 | 1983-04-08 | 575030  | M G Road             |
| USR_026 | PSGR      | Bharti    | Devgan   |  38 | 1984-04-14 | 560059  | NAL Wind Tunnel Road |
| USR_027 | PSGR      | Roopa     | Ram      |  37 | 1985-04-14 | 575023  | Bunder Road          |
| USR_028 | PSGR      | Pallavi   | Ram      |  36 | 1986-04-08 | 560044  | Lavelle Road         |
| USR_029 | PSGR      | Ravi      | Naik     |  35 | 1987-04-14 | 600045  | Thiru V ka Salai     |
| USR_030 | PSGR      | Virat     | Murthy   |  34 | 1988-04-14 | 575011  | Bejai New Road       |
+---------+-----------+-----------+----------+-----+------------+---------+----------------------+
10 rows in set (0.001 sec)

MariaDB [cs634_rrs]>
```

9. Display the train users whose name starts with the letter 'S'.

**select * from train_user where firstname like 'S%';**

```
MariaDB [cs634_rrs]> select * from train_user where firstname like 'S%';
+---------+-----------+------------+----------+-----+------------+---------+----------------------------+
| user_id | user_type | firstname  | lastname | age | dob        | pincode | street_number              |
+---------+-----------+------------+----------+-----+------------+---------+----------------------------+
| USR_003 | PSGR      | Sai Deepak | Reddy    |  25 | 1996-12-12 | 600001  | 14, Kailsh Marg            |
| USR_007 | PSGR      | Smriti     | Irani    |  22 | 1999-12-16 | 575014  | 4, Banyan Avenie           |
| USR_010 | PSGR      | Samanta    | Prabhu   |  54 | 1968-04-14 | 600042  | 8, Clone Colony            |
| USR_016 | PSGR      | Subbu      | Saravana |  48 | 1974-04-14 | 600043  | American Street            |
| USR_017 | PSGR      | Sheela     | Dixit    |  47 | 1975-04-08 | 560048  | Kasturba Road              |
| USR_021 | PSGR      | Suma       | Sampat   |  43 | 1979-04-08 | 560012  | Old Airport Road, Bangalore|
| USR_022 | PSGR      | Srihari    | Udupa    |  42 | 1980-04-14 | 560015  | Suranjan Das Road          |
| USR_023 | PSGR      | Satish     | Kotian   |  41 | 1981-04-14 | 600044  | T Nagar                    |
| USR_024 | PSGR      | Shradha    | Nayar    |  40 | 1982-04-08 | 560006  | M G Road, Bangalore        |
+---------+-----------+------------+----------+-----+------------+---------+----------------------------+
9 rows in set (0.001 sec)

MariaDB [cs634_rrs]>
```

10. Find the availability of I Class compartment of the train number 62621.

**select * from compartment where compartment_type ='I Class' and train_number = 62621;**

```
MariaDB [cs634_rrs]> select * from compartment where compartment_type ='I Class' and train_number = 62621;
+----------------+------------------+----------+--------------+--------------+
| compartment_no | compartment_type | capacity | availability | train_number |
+----------------+------------------+----------+--------------+--------------+
| F01            | I Class          |       16 |            6 |        62621 |
+----------------+------------------+----------+--------------+--------------+
1 row in set (0.001 sec)

MariaDB [cs634_rrs]>
```

11.  Find the PNR and Transaction ID of the users who made payment via Union Bank.

**Select transaction_no,pnr from payment_info where bank = 'UNION BANK';**

```
MariaDB [cs634_rrs]> select transaction_no,pnr from payment_info where bank = 'UNION BANK';
+----------------+--------+
| transaction_no | pnr    |
+----------------+--------+
|         243535 | PNR012 |
|         758900 | PNR015 |
|         867546 | PNR010 |
|         978776 | PNR003 |
+----------------+--------+
4 rows in set (0.001 sec)

MariaDB [cs634_rrs]>
```

# Lab 4 - DML

# TASK - 2

| Name: | R Chaitanya Madhav |
|-------|---------------------|
| SRN: | PES1UG20CS634 |
| Section: | K |

1. Grant privileges on different tables to users and observe the effect.

```
C:\xampp\mysql\bin>mysql -u root
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 42
Server version: 10.4.24-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

MariaDB [(none)]> use cs634_rrs;
Database changed
MariaDB [cs634_rrs]> create user abs identified by "Chaitanya";
Query OK, 0 rows affected (0.015 sec)

MariaDB [cs634_rrs]> grant UPDATE,SELECT on fare to abs;
Query OK, 0 rows affected (0.013 sec)

MariaDB [cs634_rrs]> show grants;
+----------------------------------------------------------------------+
| Grants for root@localhost                                            |
+----------------------------------------------------------------------+
| GRANT ALL PRIVILEGES ON *.* TO `root`@`localhost` WITH GRANT OPTION |
| GRANT PROXY ON ''@'%' TO 'root'@'localhost' WITH GRANT OPTION        |
+----------------------------------------------------------------------+
2 rows in set (0.000 sec)

MariaDB [cs634_rrs]> show grants for abs;
+-------------------------------------------------------------------------------------------------+
| Grants for abs@%                                                                                |
+-------------------------------------------------------------------------------------------------+
| GRANT USAGE ON *.* TO `abs`@`%` IDENTIFIED BY PASSWORD '*4A571E3B875F37949419CF8572FC3B2FCDB81D0D' |
| GRANT SELECT, UPDATE ON `cs634_rrs`.`fare` TO `abs`@`%`                                          |
+-------------------------------------------------------------------------------------------------+
2 rows in set (0.000 sec)

MariaDB [cs634_rrs]> _
```

2. Revoke UPDATE & DELETE privileges on any tables and observe the effect if any deletion/updation is performed

```
+-------------+------------------+-------------+
| train_type  | compartment_type | fare_per_km |
+-------------+------------------+-------------+
| Fast        | I Class          |           3 |
| Mail        | I Class          |           2 |
| Superfast   | I Class          |           3 |
| Fast        | II Class         |           2 |
| Mail        | II Class         |           1 |
| Superfast   | II Class         |           2 |
| Fast        | III Class        |           1 |
| Mail        | III Class        |           1 |
| Superfast   | III Class        |           1 |
+-------------+------------------+-------------+
9 rows in set (0.001 sec)
```

**Since compartment access was not given to user, it raised an error.**

```
ERROR 1142 (42000): SELECT command denied to user 'abs'@'localhost' for table 'compartment'
```

3. Create different save points and perform some insert/update/delete operations. Observe the effect of commit & rollback operations and release any created savepoints.

```
+------------------+------------------+-------------+
| train_type       | compartment_type | fare_per_km |
+------------------+------------------+-------------+
| Fast             | I Class          |           3 |
| Mail             | I Class          |           2 |
| Superfast        | I Class          |           3 |
| SuperSuperfast   | I Class          |           7 |
| Fast             | II Class         |           2 |
| Mail             | II Class         |           1 |
| Superfast        | II Class         |           2 |
| SuperSuperfast   | II Class         |           5 |
| Fast             | III Class        |           1 |
| Mail             | III Class        |           1 |
| Superfast        | III Class        |           1 |
+------------------+------------------+-------------+
11 rows in set (0.009 sec)
```

Savepoint s2;

```
Query OK, 0 rows affected (0.000 sec)
```

Select * from fare;

```
+----------------+------------------+-------------+
| train_type     | compartment_type | fare_per_km |
+----------------+------------------+-------------+
| Fast           | I Class          |           3 |
| Mail           | I Class          |           2 |
| Superfast      | I Class          |           3 |
| SuperSuperfast | I Class          |           7 |
| Fast           | II Class         |           2 |
| Mail           | II Class         |           1 |
| Superfast      | II Class         |           2 |
| SuperSuperfast | II Class         |           5 |
| Fast           | III Class        |           1 |
| Mail           | III Class        |           1 |
| Superfast      | III Class        |           1 |
| SuperSuperfast | IV Class         |           5 |
+----------------+------------------+-------------+
12 rows in set (0.001 sec)
```

Rollback to s2;

```
Query OK, 0 rows affected (0.000 sec)
```

Select *from fare;

```
+----------------+------------------+-------------+
| train_type     | compartment_type | fare_per_km |
+----------------+------------------+-------------+
| Fast           | I Class          |           3 |
| Mail           | I Class          |           2 |
| Superfast      | I Class          |           3 |
| SuperSuperfast | I Class          |           7 |
| Fast           | II Class         |           2 |
| Mail           | II Class         |           1 |
| Superfast      | II Class         |           2 |
| SuperSuperfast | II Class         |           5 |
| Fast           | III Class        |           1 |
| Mail           | III Class        |           1 |
| Superfast      | III Class        |           1 |
+----------------+------------------+-------------+
11 rows in set (0.009 sec)
```