| | |
|---|---|
| Name: | Prerna Sunil Jadhav |
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 02 |

**AIM:** Simulate Query optimization



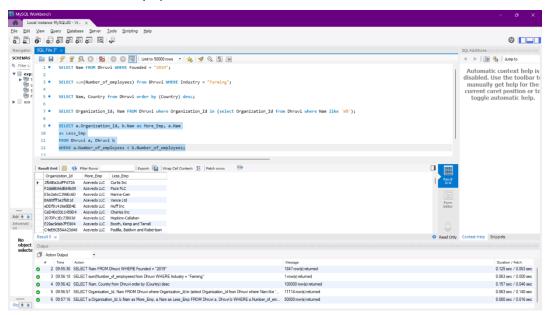Optimised**:**

# Shri Vile Parle Kelavani Mandal's
# DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
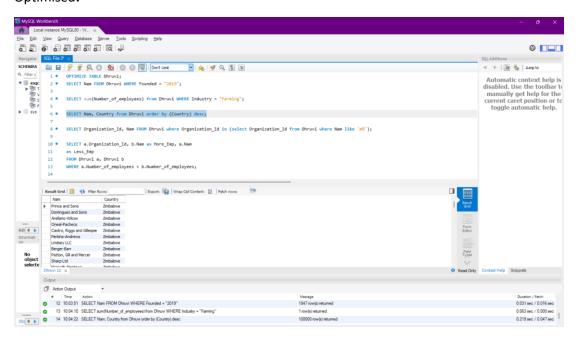NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

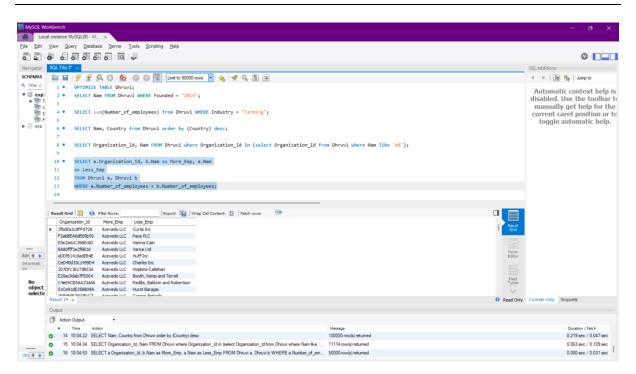**Indexed:**

Shri Vile Parle Kelavani Mandal's

# DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
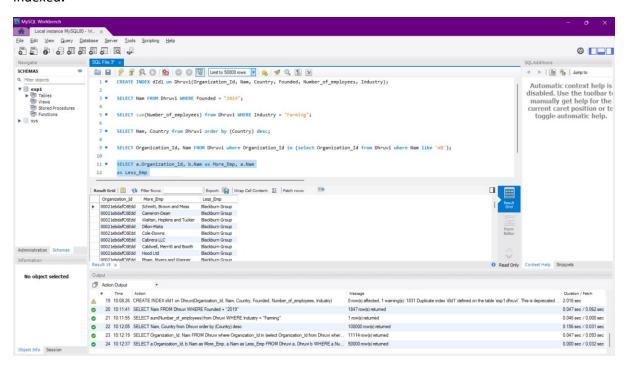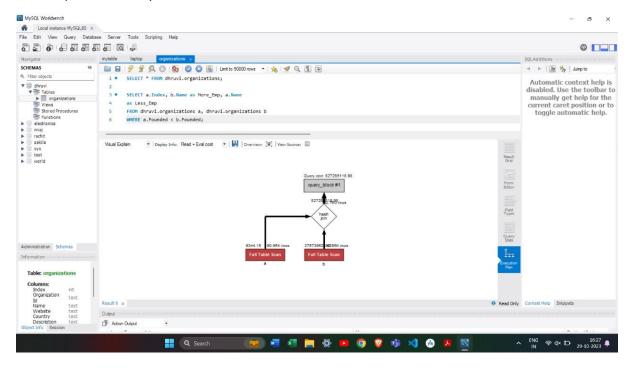(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

| Name: | Prerna Sunil Jadhav |
|---|---|
| Sap  Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment  No.: | 03 |

**AIM:** Implement Query Monitor

**Academic Year: 2022-2023**

| Name: | Prerna Sunil Jadhav |
|---|---|
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 04 |

**AIM:** Optimize using B and B+ trees

CODE:

```python
from bintrees import FastRBTree
import random
import time


btree = FastRBTree()

random_numbers = [random.randint(1, 10000) for _ in range(10000)]
for number in random_numbers:
    btree[number] = None

print("B-tree contents:")
for key in btree:
    print(key)

search_value = int(input("Enter a number to search for: "))
start_time = time.time()
if search_value in btree:
    print(f"{search_value} is in the B-tree.")
else:
    print(f"{search_value} is not in the B-tree.")
end_time = time.time()


search_time = end_time - start_time
print(f"Search took {search_time:.6f} seconds.")
```

OUTPUT:

```
  9997
  9998
Enter a number to search for: 1000
1000 is in the B-tree.
Search took 2.644191 seconds.
```

Shri Vile Parle Kelavani Mandal's
**DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**
(Autonomous College Affiliated to the University of Mumbai)
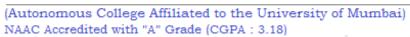NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

| Name: | Prerna Sunil Jadhav |
|---|---|
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 05 |

**AIM:** Perform Fragmentation (Range, List, Hash and Key)

CODE:
Number of records = 20
**Partitioning by Range:**

```
CREATE TABLE employees ( id INT NOT NULL,
fname VARCHAR(30), lname VARCHAR(30),
hired DATE NOT NULL DEFAULT '1970-01-01',
store_id INT NOT NULL
) PARTITION BY RANGE(store_id)(
partition p0 values less than (3), partition p1 values less than (6), partition p2 values less than (9),
partition p3 values less than (12)
);
```

**Partitioning by List:**

```
CREATE TABLE employees2 ( id INT NOT NULL,
fname VARCHAR(30), lname VARCHAR(30),
hired DATE NOT NULL DEFAULT '1970-01-01',
store_id INT NOT NULL ,
PARTITION BY LIST(store_id)(
partition p0 values in (1,4,6), partition p1 values in (2,3,8), partition p2 values in (5,7,9), partition p3
values in (10,11,12)
);
```

| PARTITION_NAME | TABLE_ROWS |
|---|---|
| p0 | 6 |
| p1 | 6 |
| p2 | 4 |
| p3 | 4 |

**Partitioning by Key:**

```
CREATE TABLE employees3 (
id INT NOT NULL PRIMARY KEY, fname VARCHAR(30), lname VARCHAR(30),
hired DATE NOT NULL DEFAULT '1970-01-01',
store_id INT NOT NULL
) PARTITION BY KEY() PARTITIONS 4;
```

| PARTITION_NAME | TABLE_ROWS |
|---|---|
| p0 | 5 |
| p1 | 5 |
| p2 | 5 |
| p3 | 5 |

**Partitioning by Hash:**

```
CREATE TABLE employees4 (
id INT NOT NULL PRIMARY KEY, fname VARCHAR(30), lname VARCHAR(30),
hired DATE NOT NULL DEFAULT '1970-01-01',
store_id INT NOT NULL
) PARTITION BY HASH(id) PARTITIONS 4;
```

| PARTITION_NAME | TABLE_ROWS |
|---|---|
| p0 | 5 |
| p1 | 5 |
| p2 | 5 |
| p3 | 5 |

**Academic Year: 2022-2023**

| | |
|---|---|
| Name: | Prerna Sunil Jadhav |
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 06 |

**AIM:** Implementations of two-phase protocol.

```python
import time
import random
class Coordinator:
    def __init__(self, participants):
        self.participants = participants

    def send_prepare(self):
        votes = []
        for participant in self.participants:
            try:
                vote = participant.prepare()
                votes.append(vote)
            except Exception as e:
                print (f"Error during prepare phase: {str(e)}")
                self.send_abort()
        if all (votes):
            self.send_commit()
        else:
            self.send_abort()

    def send_commit(self):
        for participant in self.participants:
            try:
                participant.commit()
            except Exception as e:
                print (f"Error during commit phase: {str(e)}")
                self.send_abort()
    def send_abort(self):
        for participant in self.participants:
            try:
                participant.abort()
            except Exception as e:
                print (f"Error during abort phase: {str(e)}")
                self.send_abort()

class Participant:
    def __init__(self, name):
        self.name = name
```

Shri Vile Parle Kelavani Mandal's
**DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

```python
    def prepare(self):
        print (f"{self.name}: Prepare phase")
        time.sleep(random.uniform(0.5, 1.5))
        return True
    def commit(self):
        print (f"{self.name}: Commit phase")
        time.sleep (random.uniform(0.5, 1.5))
        pass
    def abort(self):
        print(f"{self.name}: Abort phase")
        time.sleep(random.uniform(0.5, 1.5))
        pass


participant1 = Participant("Participant1")
participant2 = Participant("Participant2")
coordinator = Coordinator([participant1, participant2])
try:
    coordinator.send_prepare()
    print("Transaction committed successfully!")
except Exception as e:
    print (f"Transaction aborted: {str(e)}")
```

OUTPUT:

```
Participant1: Prepare phase
Participant2: Prepare phase
Participant1: Commit phase
Participant2: Commit phase
Transaction committed successfully!
```

**Academic Year: 2022-2023**

| | |
|---|---|
| Name: | Prerna Sunil Jadhav |
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 07 |

**AIM:** Query execution on XML database.

CODE:

```xml
<?xml version="1.0"?>
<catalog>
    <book id="bk101">
        <author>Gambardella, Matthew</author>
        <title>XML Developer's Guide</title>
        <genre>Computer</genre>
        <price>44.95</price>
        <publish_date>2000-10-01</publish_date>
        <description>An in-depth look at creating applications with XML.</description>
    </book>
    <book id="bk102">
        <author>Ralls, Kim</author>
        <title>Midnight Rain</title>
        <genre>Fantasy</genre>
        <price>5.95</price>
        <publish_date>2000-12-16</publish_date>
        <description>A former architect battles corporate zombies, an evil sorceress, and her
        own childhood to become queen of the world.</description>
    </book>
    <book id="bk103">
        <author>Corets, Eva</author>
        <title>Maeve Ascendant</title>
        <genre>Fantasy</genre>
        <price>5.95</price>
        <publish_date>2000-11-17</publish_date>
        <description>After the collapse of a nanotechnology society in England, the young
        survivors lay the foundation for a new society.</description>
    </book>
    <book id="bk104">
        <author>Corets, Eva</author>
        <title>Oberon's Legacy</title>
        <genre>Fantasy</genre>
        <price>5.95</price>
        <publish_date>2001-03-10</publish_date>
        <description>In post-apocalypse England, the mysterious agent known only as
        Oberon helps to create a new life for the inhabitants of London. Sequel to Maeve
        Ascendant.</description>
    </book>
    <book id="bk105">
        <author>Corets, Eva</author>
```

Shri Vile Parle Kelavani Mandal's
# DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

```xml
    <title>The Sundered Grail</title>
    <genre>Fantasy</genre>
    <price>5.95</price>
    <publish_date>2001-09-10</publish_date>
    <description>The two daughters of Maeve, half-sisters, battle one another for control
    of England. Sequel to Oberon's Legacy.</description>
</book>
<book id="bk106">
    <author>Randall, Cynthia</author>
    <title>Lover Birds</title>
    <genre>Romance</genre>
    <price>4.95</price>
    <publish_date>2000-09-02</publish_date>
    <description>When Carla meets Paul at an ornithology conference, tempers fly as feathers get
    ruffled.</description>
</book>
<book id="bk107">
    <author>Thurman, Paula</author>
    <title>Splish Splash</title>
    <genre>Romance</genre>
    <price>4.95</price>
    <publish_date>2000-11-02</publish_date>
    <description>A deep sea diver finds true love twenty thousand leagues beneath the
    sea.</description>
</book>
<book id="bk108">
    <author>Knorr, Stefan</author>
    <title>Creepy Crawlies</title>
    <genre>Horror</genre>
    <price>4.95</price>
    <publish_date>2000-12-06</publish_date>
    <description>An anthology of horror stories about roaches, centipedes, scorpions
                                and other insects.</description>
</book>
<book id="bk109">
    <author>Kress, Peter</author>
    <title>Paradox Lost</title>
    <genre>Science Fiction</genre>
    <price>6.95</price>
    <publish_date>2000-11-02</publish_date>
    <description>After an inadvertant trip through a Heisenberg Uncertainty Device, James Salway
    discovers the problems
    of being quantum.</description>
</book>
<book id="bk110">
    <author>O'Brien, Tim</author>
    <title>Microsoft .NET: The Programming Bible</title>
    <genre>Computer</genre>
    <price>36.95</price>
    <publish_date>2000-12-09</publish_date>
    <description>Microsoft's .NET initiative is explored in detail in this deep
    programmer's reference.</description>
</book>
<book id="bk111">
    <author>O'Brien, Tim</author>
    <title>MSXML3: A Comprehensive Guide</title>
    <genre>Computer</genre>
```

Shri Vile Parle Kelavani Mandal's
**DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

OUTPUT:

View Information about the Books

Search a title | midnight |
Search an author | |
Search a genre | |
Search a price | |
Search a Publish Date | |

| Title | Author | Genre | Price | Publish Date | |
|---|---|---|---|---|---|
| XML Developer's Guide | Gambardella, Matthew | Computer | 44.95 | 2000-10-01 | An in-depth look at creating applications with XML. |
| Midnight Rain | Ralls, Kim | Fantasy | 5.95 | 2000-12-16 | A former architect battles corporate zombies, an evil sorceress, and he |
| Maeve Ascendant | Corets, Eva | Fantasy | 5.95 | 2000-11-17 | After the collapse of a nanotechnology society in England, the young |
| Oberon's Legacy | Corets, Eva | Fantasy | 5.95 | 2001-03-10 | In post-apocalypse England, the mysterious agent known only as Ober |
| The Sundered Grail | Corets, Eva | Fantasy | 5.95 | 2001-09-10 | The two daughters of Maeve, half-sisters, battle one another for contro |
| Lover Birds | Randall, Cynthia | Romance | 4.95 | 2000-09-02 | When Carla meets Paul at an ornithology conference, tempers fly as fo |
| Splish Splash | Thurman, Paula | Romance | 4.95 | 2000-11-02 | A deep sea diver finds true love twenty thousand leagues beneath the s |
| Creepy Crawlies | Knorr, Stefan | Horror | 4.95 | 2000-12-06 | An anthology of horror stories about roaches, centipedes, scorpions an |
| Paradox Lost | Kress, Peter | Science Fiction | 6.95 | 2000-11-02 | After an inadvertent trip through a Heisenberg Uncertainty Device, Jar |
| Microsoft .NET: The Programming Bible | O'Brien, Tim | Computer | 36.95 | 2000-12-09 | Microsoft's .NET initiative is explored in detail in this deep programm |
| MSXML3: A Comprehensive Guide | O'Brien, Tim | Computer | 36.95 | 2000-12-01 | The Microsoft MSXML3 parser is covered in detail, with attention to |
| Visual Studio 7: A Comprehensive Guide | Galos, Mike | Computer | 49.95 | 2001-04-16 | Microsoft Visual Studio 7 is explored in depth, looking at how Visual |

**Result**

| Title | Author | Genre | Price | Publish Date | Description |
|---|---|---|---|---|---|
| Midnight Rain | Ralls, Kim | Fantasy | 5.95 | 2000-12-16 | A former architect battles corporate zombies, an evil sorceress, and her own childhood to become queen of the world |

Shri Vile Parle Kelavani Mandal's
## DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

| Name: | Prerna Sunil Jadhav |
|---|---|
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 08 |

**AIM:** Data handing using JSON

CODE:

```javascript
const url = 'https://dummyjson.com/users';

fetch(url)
  .then(response => {

    if (response.ok) {

      return response.json();
    } else {
      throw new Error(`Error: ${response.status}`);
    }
  })
  .then(apiResponse => {
    const data = apiResponse.users;
    //Print all users
    console.log('All users:', data);

    const filteredUsers = data.filter(user => user.age > 25);
    const usernamesOver25 = filteredUsers.map(user => user.firstName);
    console.log('Users over 25:', usernamesOver25);

    const usersFromCity = data.filter(user => user.address.state === 'CA');
    const usersFromCA = usersFromCity.map(user => user.firstName);
    console.log('Users from California:', usersFromCA);

    const averageAge = data.reduce((sum, user) => sum + user.age, 0) / data.length;
    console.log('Average age of users:', averageAge);

    const oldestUser = data.reduce((oldest, user) => (user.age > oldest.age ? user : oldest), data[0]);
    console.log('Oldest user:', oldestUser.firstName);

  })
  .catch(error => {

    console.error(error.message);
  });
```

OUTPUT:

```
Users over 25: [
  'Terry',    'Sheldon',  'Terrill',
  'Miles',    'Mavis',    'Oleta',
  'Ewell',    'Eleanora', 'Marcel',
  'Assunta',  'Trace',    'Jeanne',
  'Trycia',   'Bradford', 'Arely',
  'Gust',     'Lenna',    'Tressa',
  'Felicity', 'Griffin',  'Piper',
  'Kody',     'Macy',     'Maurine'
]
Users from California: [ 'Terrill', 'Oleta', 'Lenna',
 'Macy' ]
Average age of users: 34.86666666666667
Oldest user: Terry
```

Shri Vile Parle Kelavani Mandal's
**DWARKADAS J. SANGHVI COLLEGE OF ENGINEERING**
(Autonomous College Affiliated to the University of Mumbai)
NAAC Accredited with "A" Grade (CGPA : 3.18)

**Academic Year: 2022-2023**

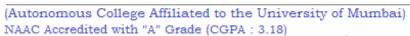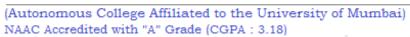| Name: | Prerna Sunil Jadhav |
|---|---|
| Sap Id: | 60004220127 |
| Class: | T. Y. B.Tech (Computer Engineering) |
| Course: | Advanced Database Management System Laboratory |
| Course Code: | DJ19CEEL5012 |
| Experiment No.: | 09 |

**AIM:** Processing of Spatial and temporal data.

DATA:

```
mysql> select * from 2022_july;
+------------+------------+----------+----------------------+------------+----------------------------------------------------+
| start_date | start_time | distance | mode                 | confidence | Places                                             |
+------------+------------+----------+----------------------+------------+----------------------------------------------------+
| 02-07-2022 |            |    18716 | IN_PASSENGER_VEHICLE | MEDIUM     |                                                    |
| 06-07-2022 | 03:23:42   |     1669 | MOTORCYCLING         | LOW        |                                                    |
| 06-07-2022 | 03:35:46   |    11483 | IN_TRAIN             | LOW        |                                                    |
| 06-07-2022 | 03:58:13   |     1069 | MOTORCYCLING         | MEDIUM     |                                                    |
| 08-07-2022 | 03:11:39   |      461 | MOTORCYCLING         | LOW        |                                                    |
| 08-07-2022 | 03:26:15   |     1099 | IN_PASSENGER_VEHICLE | LOW        |                                                    |
| 08-07-2022 | 03:42:42   |     7548 | IN_TRAIN             | MEDIUM     | Anhad Misal                                        |
| 11-07-2022 | 03:48:22   |     1609 | IN_BUS               | MEDIUM     | Kandivali Bus Station (W)                          |
| 11-07-2022 | 04:11:17   |     9363 | IN_TRAIN             | MEDIUM     | Agarkar Chowk                                      |
| 11-07-2022 | 04:39:15   |     2125 | IN_SUBWAY            | LOW        | SAMMOHI BY MOKSHA & HIRAL                          |
| 11-07-2022 | 04:48:18   |      896 | IN_PASSENGER_VEHICLE | LOW        | Trumpet Sky Lounge                                 |
| 11-07-2022 | 12:22:26   |     2972 | IN_PASSENGER_VEHICLE | LOW        | McDonald's                                         |
| 11-07-2022 | 12:48:32   |     9467 | IN_TRAIN             | MEDIUM     | Kandivali Bus Depot                                |
| 11-07-2022 | 13:10:00   |     2203 | IN_PASSENGER_VEHICLE | LOW        | State Bank of India                                |
| 13-07-2022 | 03:19:59   |      905 | WALKING              | LOW        |                                                    |
| 13-07-2022 | 03:48:02   |     1896 | IN_BUS               | LOW        | Kandivali Railway Station (W)                      |
| 13-07-2022 | 04:04:12   |     9348 | IN_TRAIN             | MEDIUM     | Agarkar Chowk / Pinky Cinema                       |
| 13-07-2022 | 04:33:49   |     3270 | IN_PASSENGER_VEHICLE | LOW        | Lotus Business Park                                |
| 13-07-2022 | 13:06:26   |     5297 | IN_BUS               | LOW        | Villa Decor - Premium Bed, Bath & Mattresses Store |
| 13-07-2022 | 13:44:17   |    11855 | IN_TRAIN             | LOW        | Kandivali Station (W)                              |
| 13-07-2022 | 14:15:27   |     1969 | IN_PASSENGER_VEHICLE | MEDIUM     | State Bank of India                                |
| 14-07-2022 | 03:54:54   |     8949 | IN_BUS               | HIGH       |                                                    |
| 14-07-2022 | 04:39:02   |      578 | WALKING              | MEDIUM     | UK Realty                                          |
| 14-07-2022 | 14:12:01   |     6005 | IN_BUS               | LOW        | Yoko Sizzlers                                      |
| 14-07-2022 | 14:58:50   |     4087 | UNKNOWN_ACTIVITY_TYPE| LOW        | Xth Central Mall                                   |
| 15-07-2022 | 03:48:49   |     8500 | IN_PASSENGER_VEHICLE | LOW        |                                                    |
| 15-07-2022 | 04:41:11   |     9105 | IN_BUS               | LOW        | RikÃ? - Terrace Bar & Grill                        |
| 15-07-2022 | 14:15:09   |     5691 | IN_BUS               | MEDIUM     | D Mart                                             |
| 15-07-2022 | 15:08:26   |     4933 | IN_BUS               | MEDIUM     | La Pino'z Pizza Kandivali                          |
| 16-07-2022 | 03:44:35   |     9838 | IN_BUS               | MEDIUM     | Laxmi Industrial Colony                            |
| 16-07-2022 | 13:08:07   |     2965 | MOTORCYCLING         | LOW        | Andheri Station (W)                                |
| 16-07-2022 | 13:32:44   |     9292 | IN_TRAIN             | MEDIUM     | Kandivali West                                     |
| 16-07-2022 | 13:53:02   |     2074 | IN_PASSENGER_VEHICLE | LOW        | La Pino'z Pizza Kandivali                          |
| 17-07-2022 | 08:38:08   |      880 | MOTORCYCLING         | LOW        | Malad Industrial Estate                            |
| 17-07-2022 | 10:23:08   |     1492 | IN_PASSENGER_VEHICLE | LOW        | Aadhar Center                                      |
| 17-07-2022 | 10:57:46   |     1294 | MOTORCYCLING         | MEDIUM     | La Pino'z Pizza Kandivali                          |
| 17-07-2022 | 11:38:53   |     5829 | MOTORCYCLING         | LOW        | State Bank Of India ATM                            |
| 18-07-2022 | 03:51:31   |     1292 | IN_BUS               | LOW        |                                                    |
| 18-07-2022 | 03:57:47   |     9400 | IN_BUS               | LOW        | Anhad Misal                                        |
```

Queries -
   a. select * from 2022_july where start_time < "04:00:00";
   b. select * from 2022_july where distance > 10000;
   c. select * from 2022_july where Places = "Doolally Taproom - Andheri";

OUTPUT:

TEMPORAL:

```
mysql> select * from 2022_july where start_time < "04:00:00";
+------------+------------+----------+----------------------+------------+-------------------------------+
| start_date | start_time | distance | mode                 | confidence | Places                        |
+------------+------------+----------+----------------------+------------+-------------------------------+
| 02-07-2022 |            |    18716 | IN_PASSENGER_VEHICLE | MEDIUM     |                               |
| 06-07-2022 | 03:23:42   |     1669 | MOTORCYCLING         | LOW        |                               |
| 06-07-2022 | 03:35:46   |    11483 | IN_TRAIN             | LOW        |                               |
| 06-07-2022 | 03:58:13   |     1069 | MOTORCYCLING         | MEDIUM     |                               |
| 08-07-2022 | 03:11:39   |      461 | MOTORCYCLING         | LOW        |                               |
| 08-07-2022 | 03:26:15   |     1099 | IN_PASSENGER_VEHICLE | LOW        |                               |
| 08-07-2022 | 03:42:42   |     7548 | IN_TRAIN             | MEDIUM     | Anhad Misal                   |
| 11-07-2022 | 03:48:22   |     1609 | IN_BUS               | MEDIUM     | Kandivali Bus Station (W)     |
| 13-07-2022 | 03:19:59   |      905 | WALKING              | LOW        |                               |
| 13-07-2022 | 03:48:02   |     1896 | IN_BUS               | LOW        | Kandivali Railway Station (W) |
| 14-07-2022 | 03:54:54   |     8949 | IN_BUS               | HIGH       |                               |
| 15-07-2022 | 03:48:49   |     8500 | IN_PASSENGER_VEHICLE | LOW        |                               |
| 16-07-2022 | 03:44:35   |     9838 | IN_BUS               | MEDIUM     | Laxmi Industrial Colony       |
| 18-07-2022 | 03:51:31   |     1292 | IN_BUS               | LOW        |                               |
| 18-07-2022 | 03:57:47   |     9400 | IN_BUS               | LOW        | Anhad Misal                   |
| 19-07-2022 | 03:54:30   |    10085 | IN_BUS               | MEDIUM     | Lotus Business Park           |
| 20-07-2022 | 03:32:29   |     1721 | IN_BUS               | MEDIUM     | Bajaj Municipal School        |
| 20-07-2022 | 03:47:40   |     9487 | IN_TRAIN             | MEDIUM     | Andheri Police Station        |
| 21-07-2022 | 03:46:02   |     8698 | UNKNOWN_ACTIVITY_TYPE| LOW        | Sun-n-Sand Hotel              |
| 23-07-2022 | 03:45:05   |    11590 | IN_PASSENGER_VEHICLE | LOW        |                               |
| 25-07-2022 | 03:34:52   |    10629 | IN_BUS               | MEDIUM     | Doolally Taproom - Andheri    |
| 26-07-2022 | 03:52:48   |    10072 | IN_BUS               | MEDIUM     | Doolally Taproom - Andheri    |
| 27-07-2022 | 03:48:55   |     9483 | IN_BUS               | LOW        | Doolally Taproom - Andheri    |
| 28-07-2022 | 03:29:48   |     9599 | IN_BUS               | MEDIUM     | RikÄ? - Terrace Bar & Grill   |
| 29-07-2022 | 03:31:35   |     1948 | MOTORCYCLING         | LOW        | Kandivali Bus Station (W)     |
| 29-07-2022 | 03:47:34   |     9579 | IN_TRAIN             | MEDIUM     |                               |
+------------+------------+----------+----------------------+------------+-------------------------------+
26 rows in set (0.00 sec)
```

SPATIAL:

```
mysql> select * from 2022_july where distance>10000;
+------------+------------+----------+----------------------+------------+------------------------------+
| start_date | start_time | distance | mode                 | confidence | Places                       |
+------------+------------+----------+----------------------+------------+------------------------------+
| 02-07-2022 |            |    18716 | IN_PASSENGER_VEHICLE | MEDIUM     |                              |
| 06-07-2022 | 03:35:46   |    11483 | IN_TRAIN             | LOW        |                              |
| 13-07-2022 | 13:44:17   |    11855 | IN_TRAIN             | LOW        | Kandivali Station (W)        |
| 19-07-2022 | 03:54:30   |    10085 | IN_BUS               | MEDIUM     | Lotus Business Park          |
| 21-07-2022 | 18:59:35   |    41236 | UNKNOWN_ACTIVITY_TYPE| LOW        | Jay's Dosa & Paratha Center  |
| 23-07-2022 | 03:45:05   |    11590 | IN_PASSENGER_VEHICLE | LOW        |                              |
| 24-07-2022 | 06:56:09   |    10674 | MOTORCYCLING         | LOW        | Axis Bank ATM                |
| 25-07-2022 | 03:34:52   |    10629 | IN_BUS               | MEDIUM     | Doolally Taproom - Andheri   |
| 26-07-2022 | 03:52:48   |    10072 | IN_BUS               | MEDIUM     | Doolally Taproom - Andheri   |
+------------+------------+----------+----------------------+------------+------------------------------+
9 rows in set (0.03 sec)
```

```
mysql> select * from 2022_july where Places="Doolally Taproom - Andheri";
+------------+------------+----------+--------+------------+----------------------------+
| start_date | start_time | distance | mode   | confidence | Places                     |
+------------+------------+----------+--------+------------+----------------------------+
| 25-07-2022 | 03:34:52   |    10629 | IN_BUS | MEDIUM     | Doolally Taproom - Andheri |
| 26-07-2022 | 03:52:48   |    10072 | IN_BUS | MEDIUM     | Doolally Taproom - Andheri |
| 27-07-2022 | 03:48:55   |     9483 | IN_BUS | LOW        | Doolally Taproom - Andheri |
+------------+------------+----------+--------+------------+----------------------------+
3 rows in set (0.00 sec)
```