# Lab7_ANP_C7281_Having Clause

PEDDA **JAGADEESH**

AF0366969

ANP-C7281

Database Schema:

Use the same database scheme created in previous lab.

Assignment 1:

Task 1: Assume you are managing a database of student records, and you need to retrieve information about students born after June 16, 2009. What will be the SQL query for this?

Task 2: Assume you have a database containing a "Student" table with information about students, including their first names. You want to retrieve records of students whose first names start with either 'A' or 'J'. To achieve this, what will be your SQL query?

Task 3. Let's consider a scenario where you have a database with a "Student" table that contains information about students, including their first names and email addresses.

You want to retrieve records of students whose first name is not 'Alice' and whose email addresses contain the domain '@example.com'. To achieve this, what will be your SQL query?

Submission:

Create an SQL script file containing your solutions for all tasks (queries). Name the file "lab_assignment1.sql" Provide comments above each query to indicate the query's purpose.

Assignment 2:

Task1: Create a table Person with PersonID int, FirstName varchar(255),

LastName varchar(255) and age (int).

Make PersonID PRIMARY KEY.

Task2: Create a table Employee with emp_id int, first_name varchar(255)

last_name varchar(255) and age (int )

Make emp_id PRIMARY KEY.

Task 3: Insert data to Person table

Task 4: Insert data to Employee table

Task 5: Create a Union of two tables

Submission:

Create an SQL script file containing your solutions for the task. Name the file "lab_assignment2.sql" Provide comments above the query to indicate the query's purpose.

ChatGPT Exercise

Using ChatGPT generate SQL queries of the below problem.

Scenario 1: In a student grades database with tables for courses and grades, find the courses where the average grade is below a 'C' (consider 'C' as a passing grade). We have a "Course" table with the following columns:

CourseId, CourseName, CreditHours, and "Grade" table with the following a columns: StudentId(Foreign Key), CourseID((Foreign Key), Grade. you want to find courses where the average grade is below a "C". Generate the ChatGPT prompt for creating the queries for the above requirement.

SOLUTION:

Database Schema:

Use the same database scheme created in the previous lab.

Assignment 1:

Task 1: Assume you are managing a database of student records, and you need to retrieve information about students born after June 16, 2009. What will be the SQL query for this?

Code:

```
CREATE TABLE Students_data (

ID INT PRIMARY KEY,

First_Name VARCHAR(50),
```

Last_Name VARCHAR(50),

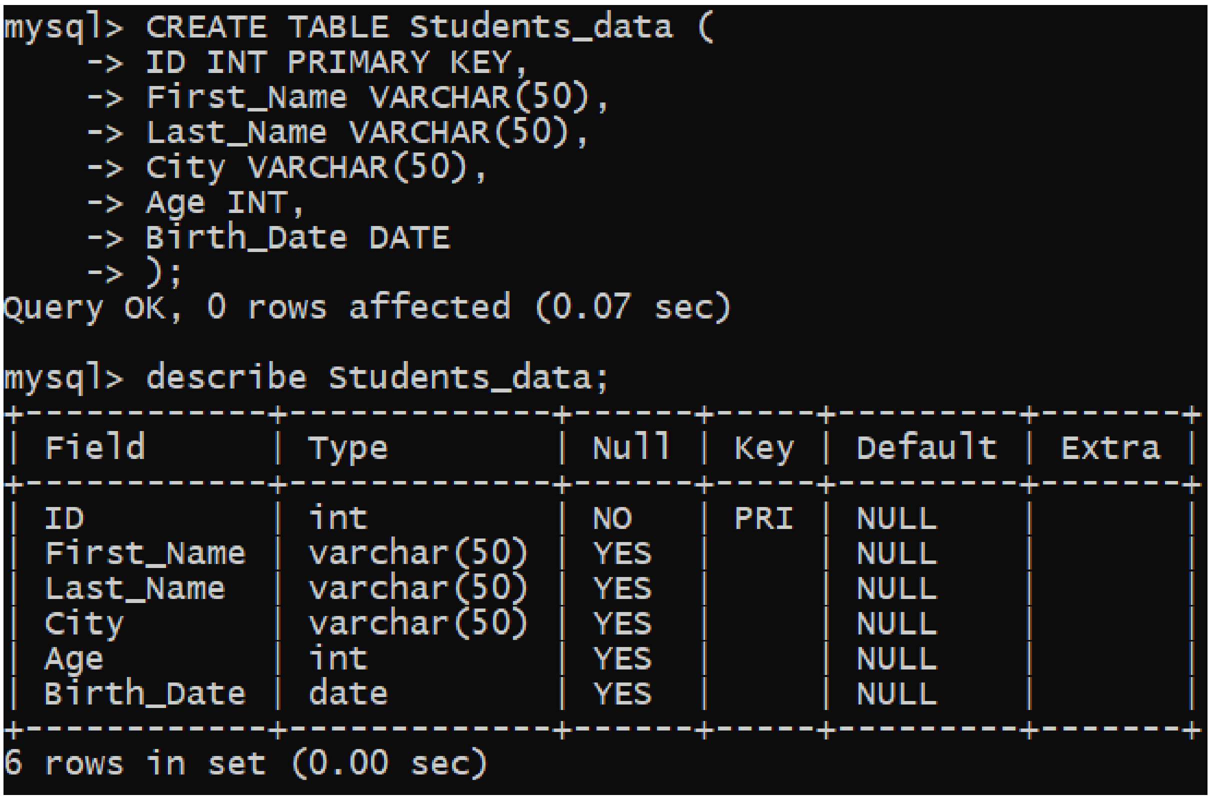
City VARCHAR(50),

Age INT,

Birth_Date DATE

);

Output:



```
mysql> CREATE TABLE Students_data (
    -> ID INT PRIMARY KEY,
    -> First_Name VARCHAR(50),
    -> Last_Name VARCHAR(50),
    -> City VARCHAR(50),
    -> Age INT,
    -> Birth_Date DATE
    -> );
Query OK, 0 rows affected (0.07 sec)

mysql> describe Students_data;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| ID         | int         | NO   | PRI | NULL    |       |
| First_Name | varchar(50) | YES  |     | NULL    |       |
| Last_Name  | varchar(50) | YES  |     | NULL    |       |
| City       | varchar(50) | YES  |     | NULL    |       |
| Age        | int         | YES  |     | NULL    |       |
| Birth_Date | date        | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
6 rows in set (0.00 sec)
```

Code:

INSERT INTO Students_data (ID, First_Name, Last_Name, City, Age, Birth_Date)

VALUES

(1, 'Aarav', 'Sharma', 'Mumbai', 23, '2000-01-15'),

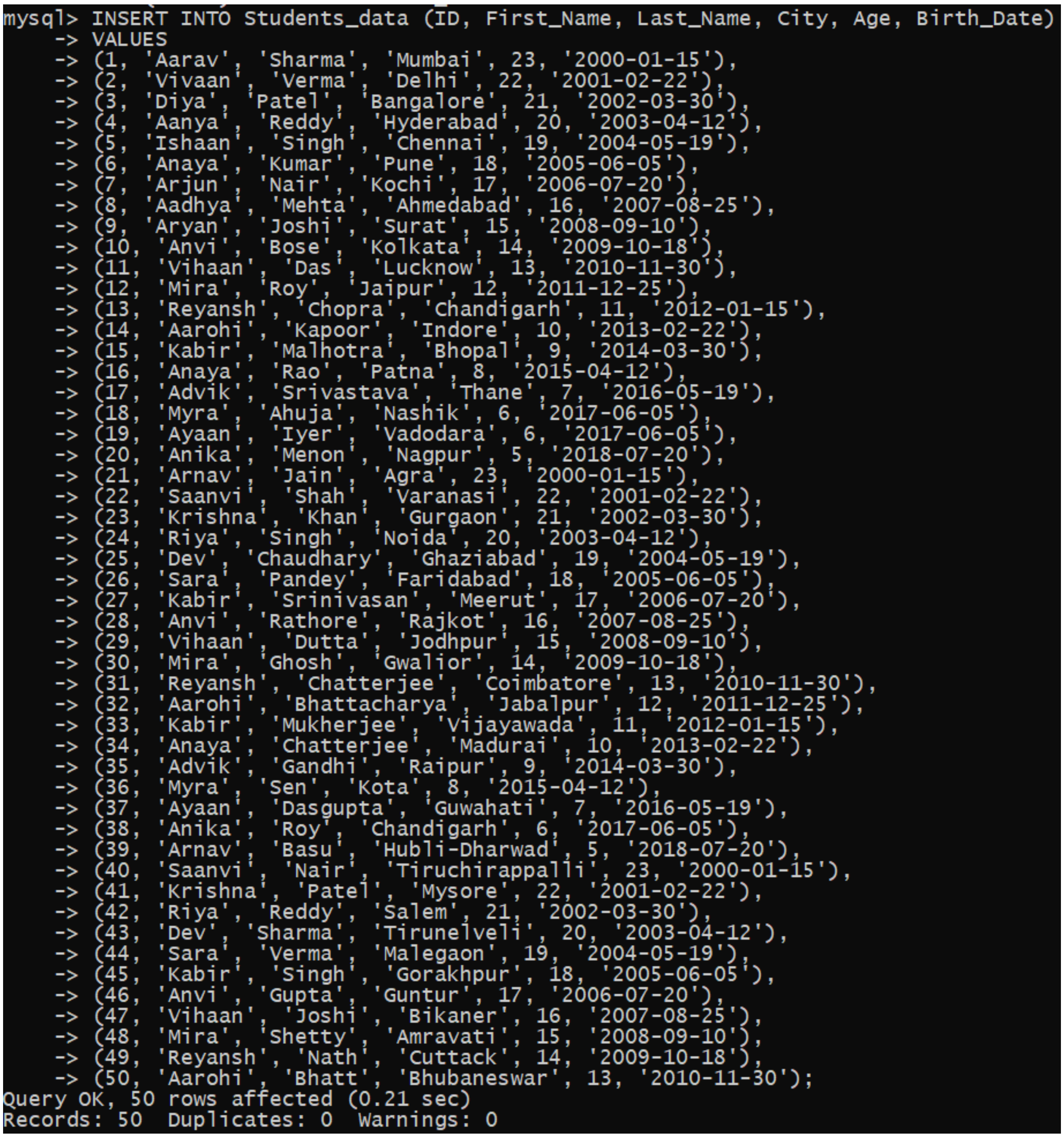
```
(2, 'Vivaan', 'Verma', 'Delhi', 22, '2001-02-22'),

(3, 'Diya', 'Patel', 'Bangalore', 21, '2002-03-30'),

(4, 'Aanya', 'Reddy', 'Hyderabad', 20, '2003-04-12'),

(5, 'Ishaan', 'Singh', 'Chennai', 19, '2004-05-19'),

(6, 'Anaya', 'Kumar', 'Pune', 18, '2005-06-05'),

(7, 'Arjun', 'Nair', 'Kochi', 17, '2006-07-20'),

(8, 'Aadhya', 'Mehta', 'Ahmedabad', 16, '2007-08-25'),

(9, 'Aryan', 'Joshi', 'Surat', 15, '2008-09-10'),

(10, 'Anvi', 'Bose', 'Kolkata', 14, '2009-10-18'),

(11, 'Vihaan', 'Das', 'Lucknow', 13, '2010-11-30'),

(12, 'Mira', 'Roy', 'Jaipur', 12, '2011-12-25'),

(13, 'Reyansh', 'Chopra', 'Chandigarh', 11, '2012-01-15'),

(14, 'Aarohi', 'Kapoor', 'Indore', 10, '2013-02-22'),

(15, 'Kabir', 'Malhotra', 'Bhopal', 9, '2014-03-30'),

(16, 'Anaya', 'Rao', 'Patna', 8, '2015-04-12'),

(17, 'Advik', 'Srivastava', 'Thane', 7, '2016-05-19'),

(18, 'Myra', 'Ahuja', 'Nashik', 6, '2017-06-05'),

(19, 'Ayaan', 'Iyer', 'Vadodara', 6, '2017-06-05'),

(20, 'Anika', 'Menon', 'Nagpur', 5, '2018-07-20'),

(21, 'Arnav', 'Jain', 'Agra', 23, '2000-01-15'),

(22, 'Saanvi', 'Shah', 'Varanasi', 22, '2001-02-22'),

(23, 'Krishna', 'Khan', 'Gurgaon', 21, '2002-03-30'),

(24, 'Riya', 'Singh', 'Noida', 20, '2003-04-12'),
(25, 'Dev', 'Chaudhary', 'Ghaziabad', 19, '2004-05-19'),

(26, 'Sara', 'Pandey', 'Faridabad', 18, '2005-06-05'),

(27, 'Kabir', 'Srinivasan', 'Meerut', 17, '2006-07-20'),

(28, 'Anvi', 'Rathore', 'Rajkot', 16, '2007-08-25'),

(29, 'Vihaan', 'Dutta', 'Jodhpur', 15, '2008-09-10'),

(30, 'Mira', 'Ghosh', 'Gwalior', 14, '2009-10-18'),

(31, 'Reyansh', 'Chatterjee', 'Coimbatore', 13, '2010-11-30'),

(32, 'Aarohi', 'Bhattacharya', 'Jabalpur', 12, '2011-12-25'),

(33, 'Kabir', 'Mukherjee', 'Vijayawada', 11, '2012-01-15'),

(34, 'Anaya', 'Chatterjee', 'Madurai', 10, '2013-02-22'),

(35, 'Advik', 'Gandhi', 'Raipur', 9, '2014-03-30'),

(36, 'Myra', 'Sen', 'Kota', 8, '2015-04-12'),

(37, 'Ayaan', 'Dasgupta', 'Guwahati', 7, '2016-05-19'),

(38, 'Anika', 'Roy', 'Chandigarh', 6, '2017-06-05'),

(39, 'Arnav', 'Basu', 'Hubli-Dharwad', 5, '2018-07-20'),

(40, 'Saanvi', 'Nair', 'Tiruchirappalli', 23, '2000-01-15'),

(41, 'Krishna', 'Patel', 'Mysore', 22, '2001-02-22'),

(42, 'Riya', 'Reddy', 'Salem', 21, '2002-03-30'),

(43, 'Dev', 'Sharma', 'Tirunelveli', 20, '2003-04-12'),

(44, 'Sara', 'Verma', 'Malegaon', 19, '2004-05-19'),

(45, 'Kabir', 'Singh', 'Gorakhpur', 18, '2005-06-05'),

(46, 'Anvi', 'Gupta', 'Guntur', 17, '2006-07-20'),

(47, 'Vihaan', 'Joshi', 'Bikaner', 16, '2007-08-25'),
```

(48, 'Mira', 'Shetty', 'Amravati', 15, '2008-09-10'),

(49, 'Reyansh', 'Nath', 'Cuttack', 14, '2009-10-18'),

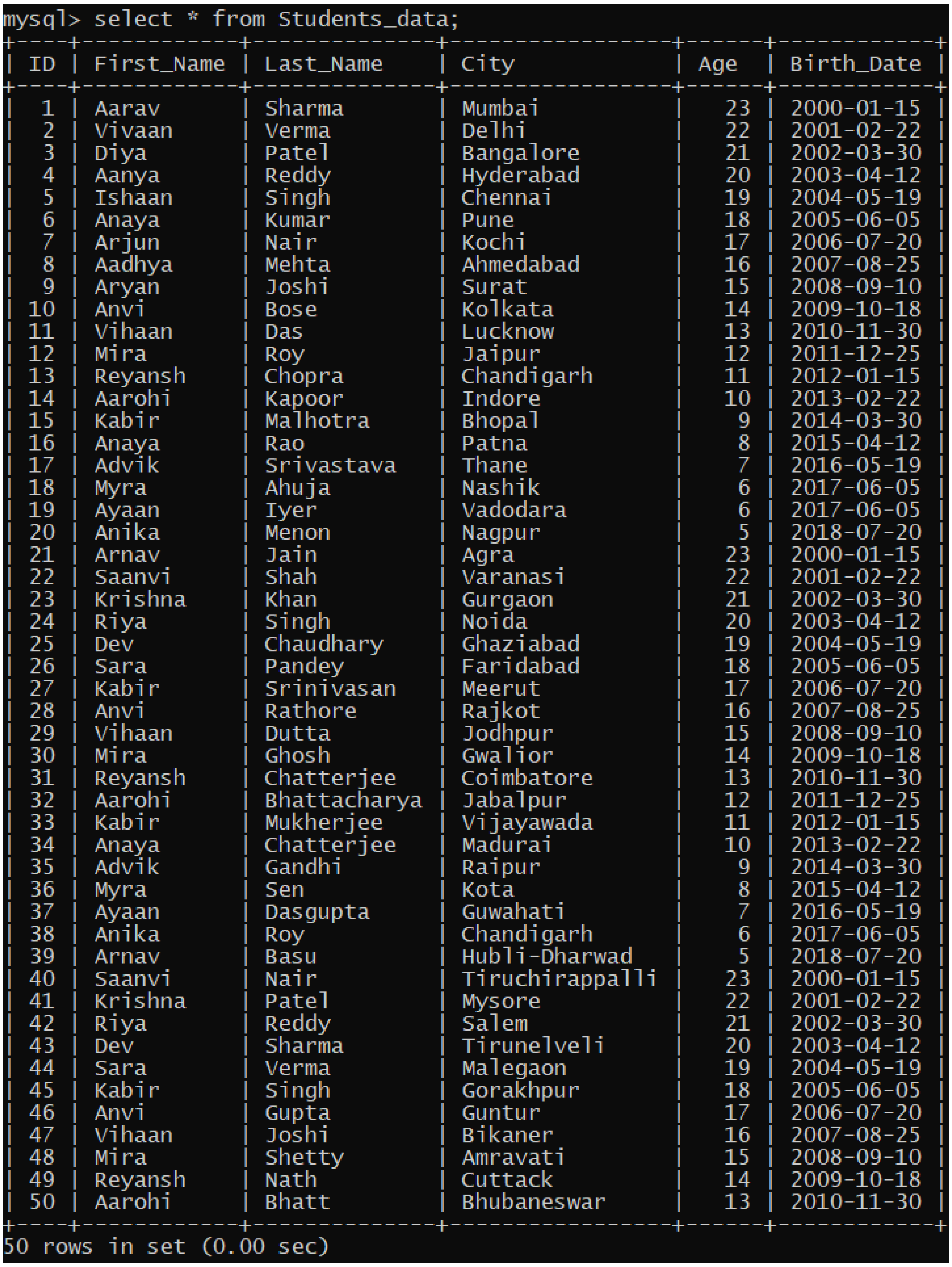
(50, 'Aarohi', 'Bhatt', 'Bhubaneswar', 13, '2010-11-30');

Output:



```
mysql> INSERT INTO Students_data (ID, First_Name, Last_Name, City, Age, Birth_Date)
    -> VALUES
    -> (1, 'Aarav', 'Sharma', 'Mumbai', 23, '2000-01-15'),
    -> (2, 'Vivaan', 'Verma', 'Delhi', 22, '2001-02-22'),
    -> (3, 'Diya', 'Patel', 'Bangalore', 21, '2002-03-30'),
    -> (4, 'Aanya', 'Reddy', 'Hyderabad', 20, '2003-04-12'),
    -> (5, 'Ishaan', 'Singh', 'Chennai', 19, '2004-05-19'),
    -> (6, 'Anaya', 'Kumar', 'Pune', 18, '2005-06-05'),
    -> (7, 'Arjun', 'Nair', 'Kochi', 17, '2006-07-20'),
    -> (8, 'Aadhya', 'Mehta', 'Ahmedabad', 16, '2007-08-25'),
    -> (9, 'Aryan', 'Joshi', 'Surat', 15, '2008-09-10'),
    -> (10, 'Anvi', 'Bose', 'Kolkata', 14, '2009-10-18'),
    -> (11, 'Vihaan', 'Das', 'Lucknow', 13, '2010-11-30'),
    -> (12, 'Mira', 'Roy', 'Jaipur', 12, '2011-12-25'),
    -> (13, 'Reyansh', 'Chopra', 'Chandigarh', 11, '2012-01-15'),
    -> (14, 'Aarohi', 'Kapoor', 'Indore', 10, '2013-02-22'),
    -> (15, 'Kabir', 'Malhotra', 'Bhopal', 9, '2014-03-30'),
    -> (16, 'Anaya', 'Rao', 'Patna', 8, '2015-04-12'),
    -> (17, 'Advik', 'Srivastava', 'Thane', 7, '2016-05-19'),
    -> (18, 'Myra', 'Ahuja', 'Nashik', 6, '2017-06-05'),
    -> (19, 'Ayaan', 'Iyer', 'Vadodara', 6, '2017-06-05'),
    -> (20, 'Anika', 'Menon', 'Nagpur', 5, '2018-07-20'),
    -> (21, 'Arnav', 'Jain', 'Agra', 23, '2000-01-15'),
    -> (22, 'Saanvi', 'Shah', 'Varanasi', 22, '2001-02-22'),
    -> (23, 'Krishna', 'Khan', 'Gurgaon', 21, '2002-03-30'),
    -> (24, 'Riya', 'Singh', 'Noida', 20, '2003-04-12'),
    -> (25, 'Dev', 'Chaudhary', 'Ghaziabad', 19, '2004-05-19'),
    -> (26, 'Sara', 'Pandey', 'Faridabad', 18, '2005-06-05'),
    -> (27, 'Kabir', 'Srinivasan', 'Meerut', 17, '2006-07-20'),
    -> (28, 'Anvi', 'Rathore', 'Rajkot', 16, '2007-08-25'),
    -> (29, 'Vihaan', 'Dutta', 'Jodhpur', 15, '2008-09-10'),
    -> (30, 'Mira', 'Ghosh', 'Gwalior', 14, '2009-10-18'),
    -> (31, 'Reyansh', 'Chatterjee', 'Coimbatore', 13, '2010-11-30'),
    -> (32, 'Aarohi', 'Bhattacharya', 'Jabalpur', 12, '2011-12-25'),
    -> (33, 'Kabir', 'Mukherjee', 'Vijayawada', 11, '2012-01-15'),
    -> (34, 'Anaya', 'Chatterjee', 'Madurai', 10, '2013-02-22'),
    -> (35, 'Advik', 'Gandhi', 'Raipur', 9, '2014-03-30'),
    -> (36, 'Myra', 'Sen', 'Kota', 8, '2015-04-12'),
    -> (37, 'Ayaan', 'Dasgupta', 'Guwahati', 7, '2016-05-19'),
    -> (38, 'Anika', 'Roy', 'Chandigarh', 6, '2017-06-05'),
    -> (39, 'Arnav', 'Basu', 'Hubli-Dharwad', 5, '2018-07-20'),
    -> (40, 'Saanvi', 'Nair', 'Tiruchirappalli', 23, '2000-01-15'),
    -> (41, 'Krishna', 'Patel', 'Mysore', 22, '2001-02-22'),
    -> (42, 'Riya', 'Reddy', 'Salem', 21, '2002-03-30'),
    -> (43, 'Dev', 'Sharma', 'Tirunelveli', 20, '2003-04-12'),
    -> (44, 'Sara', 'Verma', 'Malegaon', 19, '2004-05-19'),
    -> (45, 'Kabir', 'Singh', 'Gorakhpur', 18, '2005-06-05'),
    -> (46, 'Anvi', 'Gupta', 'Guntur', 17, '2006-07-20'),
    -> (47, 'Vihaan', 'Joshi', 'Bikaner', 16, '2007-08-25'),
    -> (48, 'Mira', 'Shetty', 'Amravati', 15, '2008-09-10'),
    -> (49, 'Reyansh', 'Nath', 'Cuttack', 14, '2009-10-18'),
    -> (50, 'Aarohi', 'Bhatt', 'Bhubaneswar', 13, '2010-11-30');
Query OK, 50 rows affected (0.21 sec)
Records: 50  Duplicates: 0  Warnings: 0
```

Output:

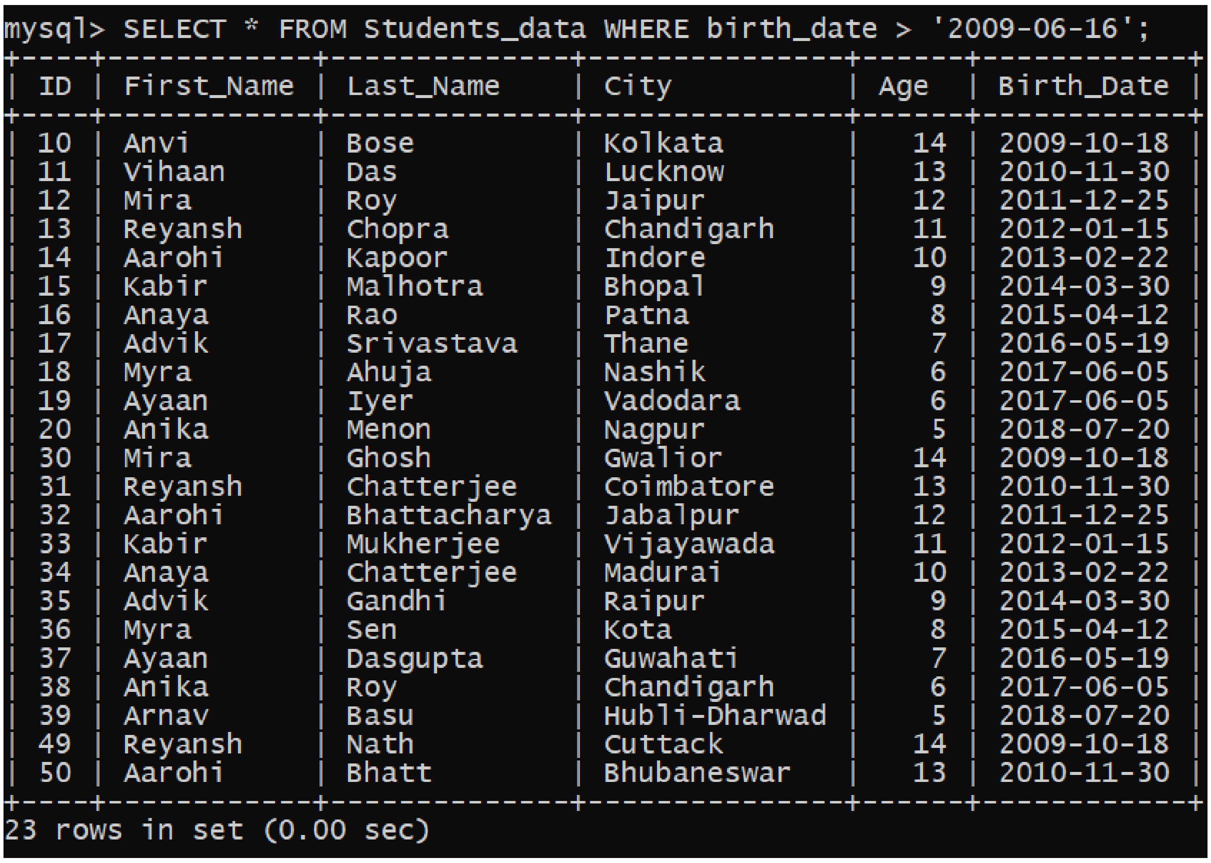


```
mysql> select * from Students_data;
+----+------------+--------------+-----------------+-----+------------+
| ID | First_Name | Last_Name    | City            | Age | Birth_Date |
+----+------------+--------------+-----------------+-----+------------+
|  1 | Aarav      | Sharma       | Mumbai          |  23 | 2000-01-15 |
|  2 | Vivaan     | Verma        | Delhi           |  22 | 2001-02-22 |
|  3 | Diya       | Patel        | Bangalore       |  21 | 2002-03-30 |
|  4 | Aanya      | Reddy        | Hyderabad       |  20 | 2003-04-12 |
|  5 | Ishaan     | Singh        | Chennai         |  19 | 2004-05-19 |
|  6 | Anaya      | Kumar        | Pune            |  18 | 2005-06-05 |
|  7 | Arjun      | Nair         | Kochi           |  17 | 2006-07-20 |
|  8 | Aadhya     | Mehta        | Ahmedabad       |  16 | 2007-08-25 |
|  9 | Aryan      | Joshi        | Surat           |  15 | 2008-09-10 |
| 10 | Anvi       | Bose         | Kolkata         |  14 | 2009-10-18 |
| 11 | Vihaan     | Das          | Lucknow         |  13 | 2010-11-30 |
| 12 | Mira       | Roy          | Jaipur          |  12 | 2011-12-25 |
| 13 | Reyansh    | Chopra       | Chandigarh      |  11 | 2012-01-15 |
| 14 | Aarohi     | Kapoor       | Indore          |  10 | 2013-02-22 |
| 15 | Kabir      | Malhotra     | Bhopal          |   9 | 2014-03-30 |
| 16 | Anaya      | Rao          | Patna           |   8 | 2015-04-12 |
| 17 | Advik      | Srivastava   | Thane           |   7 | 2016-05-19 |
| 18 | Myra       | Ahuja        | Nashik          |   6 | 2017-06-05 |
| 19 | Ayaan      | Iyer         | Vadodara        |   6 | 2017-06-05 |
| 20 | Anika      | Menon        | Nagpur          |   5 | 2018-07-20 |
| 21 | Arnav      | Jain         | Agra            |  23 | 2000-01-15 |
| 22 | Saanvi     | Shah         | Varanasi        |  22 | 2001-02-22 |
| 23 | Krishna    | Khan         | Gurgaon         |  21 | 2002-03-30 |
| 24 | Riya       | Singh        | Noida           |  20 | 2003-04-12 |
| 25 | Dev        | Chaudhary    | Ghaziabad       |  19 | 2004-05-19 |
| 26 | Sara       | Pandey       | Faridabad       |  18 | 2005-06-05 |
| 27 | Kabir      | Srinivasan   | Meerut          |  17 | 2006-07-20 |
| 28 | Anvi       | Rathore      | Rajkot          |  16 | 2007-08-25 |
| 29 | Vihaan     | Dutta        | Jodhpur         |  15 | 2008-09-10 |
| 30 | Mira       | Ghosh        | Gwalior         |  14 | 2009-10-18 |
| 31 | Reyansh    | Chatterjee   | Coimbatore      |  13 | 2010-11-30 |
| 32 | Aarohi     | Bhattacharya | Jabalpur        |  12 | 2011-12-25 |
| 33 | Kabir      | Mukherjee    | Vijayawada      |  11 | 2012-01-15 |
| 34 | Anaya      | Chatterjee   | Madurai         |  10 | 2013-02-22 |
| 35 | Advik      | Gandhi       | Raipur          |   9 | 2014-03-30 |
| 36 | Myra       | Sen          | Kota            |   8 | 2015-04-12 |
| 37 | Ayaan      | Dasgupta     | Guwahati        |   7 | 2016-05-19 |
| 38 | Anika      | Roy          | Chandigarh      |   6 | 2017-06-05 |
| 39 | Arnav      | Basu         | Hubli-Dharwad   |   5 | 2018-07-20 |
| 40 | Saanvi     | Nair         | Tiruchirappalli |  23 | 2000-01-15 |
| 41 | Krishna    | Patel        | Mysore          |  22 | 2001-02-22 |
| 42 | Riya       | Reddy        | Salem           |  21 | 2002-03-30 |
| 43 | Dev        | Sharma       | Tirunelveli     |  20 | 2003-04-12 |
| 44 | Sara       | Verma        | Malegaon        |  19 | 2004-05-19 |
| 45 | Kabir      | Singh        | Gorakhpur       |  18 | 2005-06-05 |
| 46 | Anvi       | Gupta        | Guntur          |  17 | 2006-07-20 |
| 47 | Vihaan     | Joshi        | Bikaner         |  16 | 2007-08-25 |
| 48 | Mira       | Shetty       | Amravati        |  15 | 2008-09-10 |
| 49 | Reyansh    | Nath         | Cuttack         |  14 | 2009-10-18 |
| 50 | Aarohi     | Bhatt        | Bhubaneswar     |  13 | 2010-11-30 |
+----+------------+--------------+-----------------+-----+------------+
50 rows in set (0.00 sec)
```

Code:

SELECT * FROM Students_data WHERE birth_date > '2009-06-16';

Output:



```
mysql> SELECT * FROM Students_data WHERE birth_date > '2009-06-16';
+----+------------+--------------+---------------+------+------------+
| ID | First_Name | Last_Name    | City          | Age  | Birth_Date |
+----+------------+--------------+---------------+------+------------+
| 10 | Anvi       | Bose         | Kolkata       |   14 | 2009-10-18 |
| 11 | Vihaan     | Das          | Lucknow       |   13 | 2010-11-30 |
| 12 | Mira       | Roy          | Jaipur        |   12 | 2011-12-25 |
| 13 | Reyansh    | Chopra       | Chandigarh    |   11 | 2012-01-15 |
| 14 | Aarohi     | Kapoor       | Indore        |   10 | 2013-02-22 |
| 15 | Kabir      | Malhotra     | Bhopal        |    9 | 2014-03-30 |
| 16 | Anaya      | Rao          | Patna         |    8 | 2015-04-12 |
| 17 | Advik      | Srivastava   | Thane         |    7 | 2016-05-19 |
| 18 | Myra       | Ahuja        | Nashik        |    6 | 2017-06-05 |
| 19 | Ayaan      | Iyer         | Vadodara      |    6 | 2017-06-05 |
| 20 | Anika      | Menon        | Nagpur        |    5 | 2018-07-20 |
| 30 | Mira       | Ghosh        | Gwalior       |   14 | 2009-10-18 |
| 31 | Reyansh    | Chatterjee   | Coimbatore    |   13 | 2010-11-30 |
| 32 | Aarohi     | Bhattacharya | Jabalpur      |   12 | 2011-12-25 |
| 33 | Kabir      | Mukherjee    | Vijayawada    |   11 | 2012-01-15 |
| 34 | Anaya      | Chatterjee   | Madurai       |   10 | 2013-02-22 |
| 35 | Advik      | Gandhi       | Raipur        |    9 | 2014-03-30 |
| 36 | Myra       | Sen          | Kota          |    8 | 2015-04-12 |
| 37 | Ayaan      | Dasgupta     | Guwahati      |    7 | 2016-05-19 |
| 38 | Anika      | Roy          | Chandigarh    |    6 | 2017-06-05 |
| 39 | Arnav      | Basu         | Hubli-Dharwad |    5 | 2018-07-20 |
| 49 | Reyansh    | Nath         | Cuttack       |   14 | 2009-10-18 |
| 50 | Aarohi     | Bhatt        | Bhubaneswar   |   13 | 2010-11-30 |
+----+------------+--------------+---------------+------+------------+
23 rows in set (0.00 sec)
```

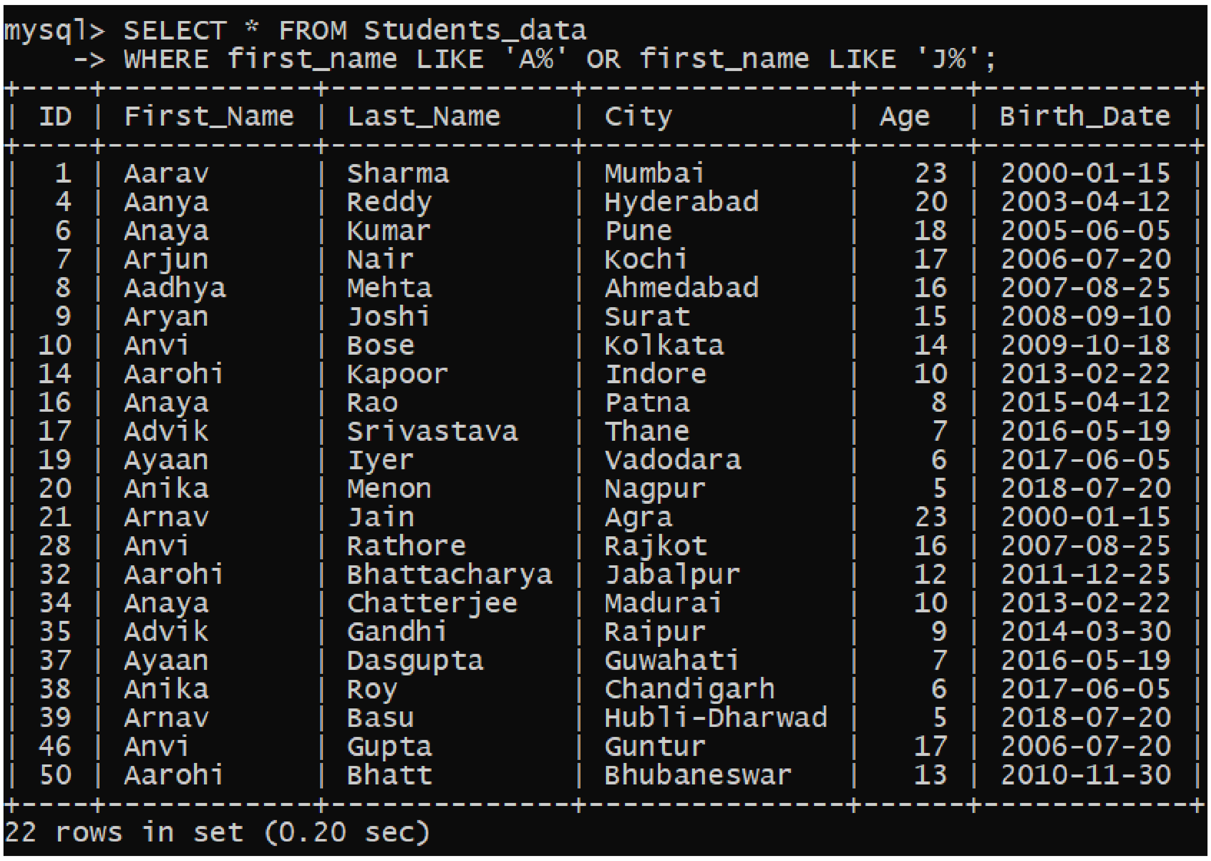
Task 2: Assume you have a database containing a "Student" table with information about students, including their first names. You want to retrieve records of students whose first names start with either 'A' or 'J'. To achieve this, what will be your SQL query?

Code:

SELECT * FROM Students_data

WHERE first_name LIKE 'A%' OR first_name LIKE 'J%';

Output:



```
mysql> SELECT * FROM Students_data
    -> WHERE first_name LIKE 'A%' OR first_name LIKE 'J%';
+----+------------+--------------+---------------+------+------------+
| ID | First_Name | Last_Name    | City          | Age  | Birth_Date |
+----+------------+--------------+---------------+------+------------+
|  1 | Aarav      | Sharma       | Mumbai        |   23 | 2000-01-15 |
|  4 | Aanya      | Reddy        | Hyderabad     |   20 | 2003-04-12 |
|  6 | Anaya      | Kumar        | Pune          |   18 | 2005-06-05 |
|  7 | Arjun      | Nair         | Kochi         |   17 | 2006-07-20 |
|  8 | Aadhya     | Mehta        | Ahmedabad     |   16 | 2007-08-25 |
|  9 | Aryan      | Joshi        | Surat         |   15 | 2008-09-10 |
| 10 | Anvi       | Bose         | Kolkata       |   14 | 2009-10-18 |
| 14 | Aarohi     | Kapoor       | Indore        |   10 | 2013-02-22 |
| 16 | Anaya      | Rao          | Patna         |    8 | 2015-04-12 |
| 17 | Advik      | Srivastava   | Thane         |    7 | 2016-05-19 |
| 19 | Ayaan      | Iyer         | Vadodara      |    6 | 2017-06-05 |
| 20 | Anika      | Menon        | Nagpur        |    5 | 2018-07-20 |
| 21 | Arnav      | Jain         | Agra          |   23 | 2000-01-15 |
| 28 | Anvi       | Rathore      | Rajkot        |   16 | 2007-08-25 |
| 32 | Aarohi     | Bhattacharya | Jabalpur      |   12 | 2011-12-25 |
| 34 | Anaya      | Chatterjee   | Madurai       |   10 | 2013-02-22 |
| 35 | Advik      | Gandhi       | Raipur        |    9 | 2014-03-30 |
| 37 | Ayaan      | Dasgupta     | Guwahati      |    7 | 2016-05-19 |
| 38 | Anika      | Roy          | Chandigarh    |    6 | 2017-06-05 |
| 39 | Arnav      | Basu         | Hubli-Dharwad |    5 | 2018-07-20 |
| 46 | Anvi       | Gupta        | Guntur        |   17 | 2006-07-20 |
| 50 | Aarohi     | Bhatt        | Bhubaneswar   |   13 | 2010-11-30 |
+----+------------+--------------+---------------+------+------------+
22 rows in set (0.20 sec)
```

Task 3. Let's consider a scenario where you have a database with a "Student" table that contains information about students, including their first names and email addresses. You want to retrieve records of students whose first name is not 'Alice' and whose email addresses contain the domain '@example.com'. To achieve this, what will be your SQL query?

Code:

CREATE TABLE Student (

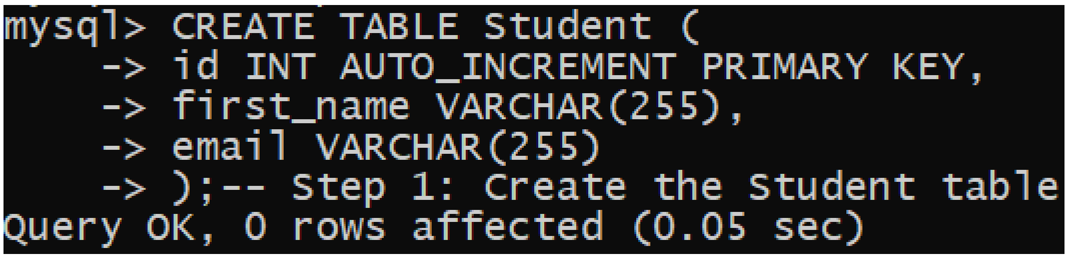
id INT AUTO_INCREMENT PRIMARY KEY,

first_name VARCHAR(255),

email VARCHAR(255)

);

Output:



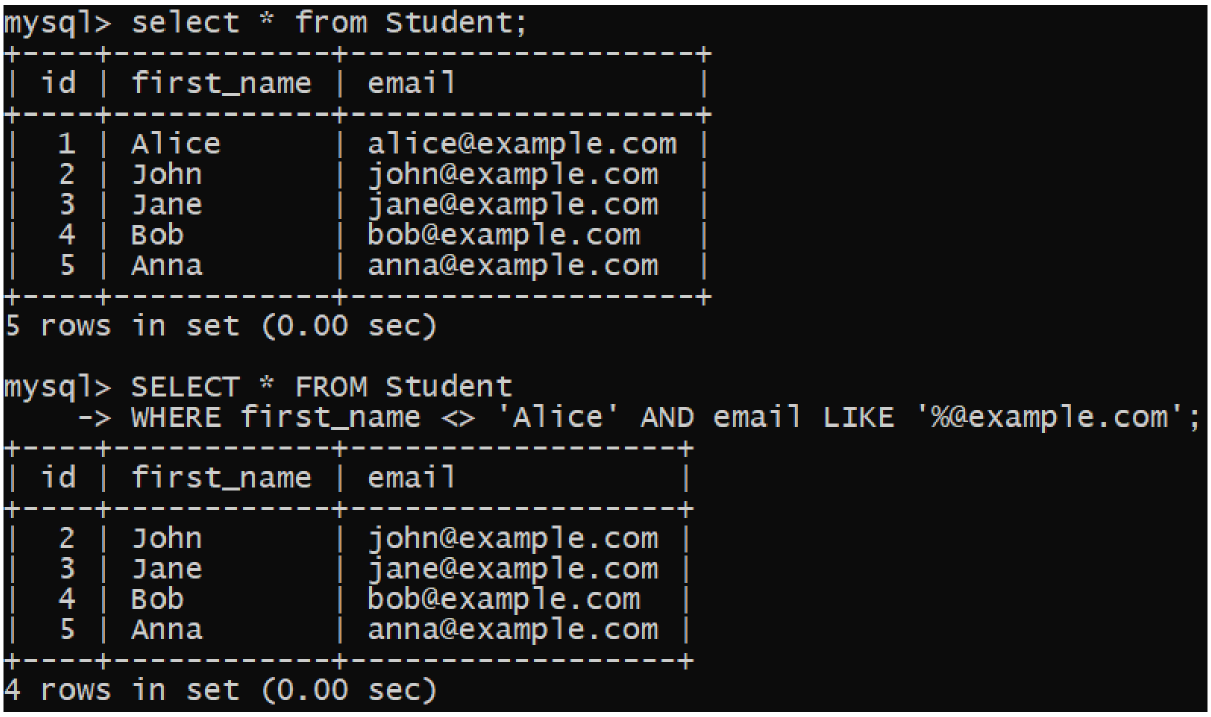
```
mysql> CREATE TABLE Student (
    -> id INT AUTO_INCREMENT PRIMARY KEY,
    -> first_name VARCHAR(255),
    -> email VARCHAR(255)
    -> );-- Step 1: Create the Student table
Query OK, 0 rows affected (0.05 sec)
```

Code:

SELECT * FROM Student

WHERE first_name <> 'Alice' AND email LIKE '%@example.com';

Output:



```
mysql> select * from Student;
+----+------------+-------------------+
| id | first_name | email             |
+----+------------+-------------------+
|  1 | Alice      | alice@example.com |
|  2 | John       | john@example.com  |
|  3 | Jane       | jane@example.com  |
|  4 | Bob        | bob@example.com   |
|  5 | Anna       | anna@example.com  |
+----+------------+-------------------+
5 rows in set (0.00 sec)

mysql> SELECT * FROM Student
    -> WHERE first_name <> 'Alice' AND email LIKE '%@example.com';
+----+------------+------------------+
| id | first_name | email            |
+----+------------+------------------+
|  2 | John       | john@example.com |
|  3 | Jane       | jane@example.com |
|  4 | Bob        | bob@example.com  |
|  5 | Anna       | anna@example.com |
+----+------------+------------------+
4 rows in set (0.00 sec)
```

Submission:

Create an SQL script file containing your solutions for all tasks (queries). Name the file "lab_assignment1.sql" Provide comments above each query to indicate the query's

purpose.

Assignment 2:

Task1: Create a table Person with PersonID int, FirstName varchar(255),

LastName varchar(255) and age (int). Make PersonID PRIMARY KEY.

Code:

CREATE TABLE Person (

PersonID INT AUTO_INCREMENT PRIMARY KEY,

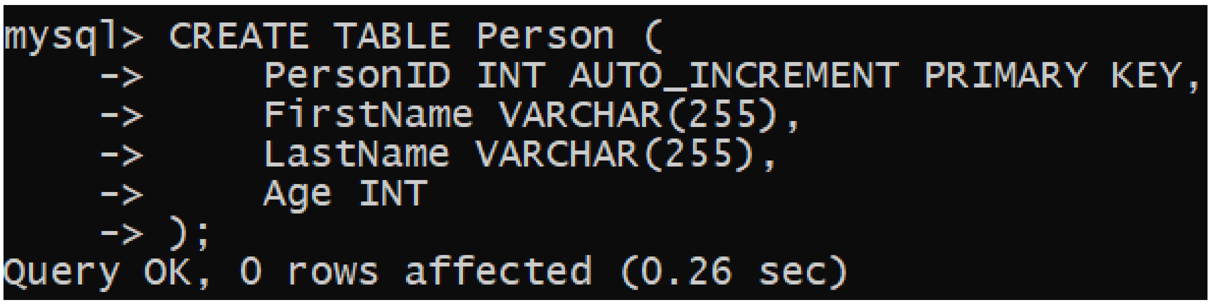
FirstName VARCHAR(255),

LastName VARCHAR(255),

Age INT

);

Output:



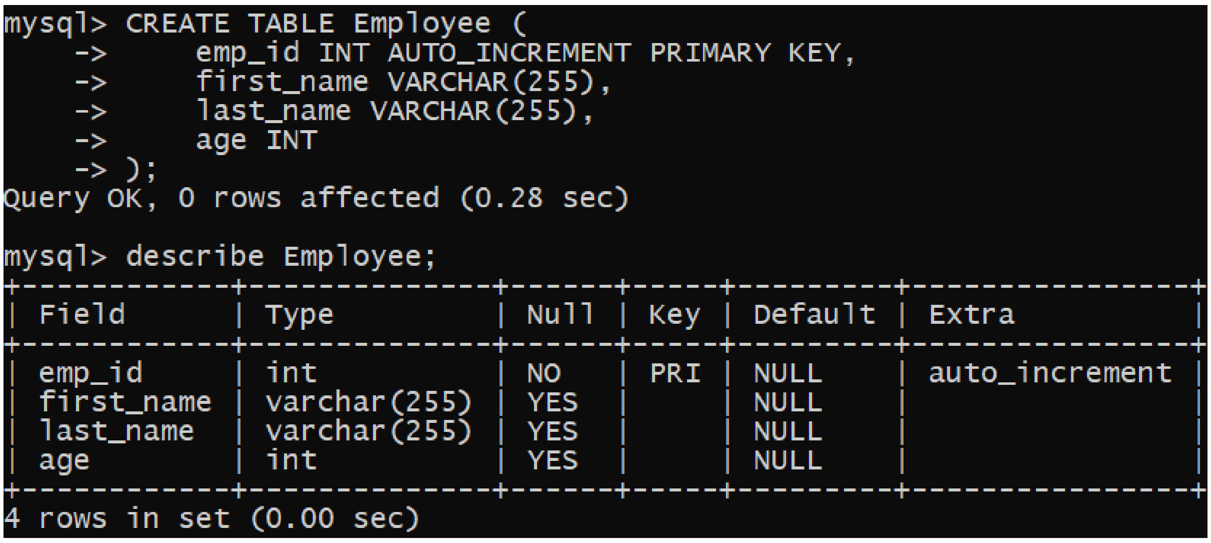
```
mysql> CREATE TABLE Person (
    ->     PersonID INT AUTO_INCREMENT PRIMARY KEY,
    ->     FirstName VARCHAR(255),
    ->     LastName VARCHAR(255),
    ->     Age INT
    -> );
Query OK, 0 rows affected (0.26 sec)
```

Task2: Create a table Employee with emp_id int, first_name varchar(255) last_name varchar(255) and age (int ) Make emp_id PRIMARY KEY.

Code:

```
CREATE TABLE Employee (
emp_id INT AUTO_INCREMENT PRIMARY KEY,
first_name VARCHAR(255),
last_name VARCHAR(255),
age INT
);
```

Output:



```
mysql> CREATE TABLE Employee (
    ->     emp_id INT AUTO_INCREMENT PRIMARY KEY,
    ->     first_name VARCHAR(255),
    ->     last_name VARCHAR(255),
    ->     age INT
    -> );
Query OK, 0 rows affected (0.28 sec)

mysql> describe Employee;
+------------+--------------+------+-----+---------+----------------+
| Field      | Type         | Null | Key | Default | Extra          |
+------------+--------------+------+-----+---------+----------------+
| emp_id     | int          | NO   | PRI | NULL    | auto_increment |
| first_name | varchar(255) | YES  |     | NULL    |                |
| last_name  | varchar(255) | YES  |     | NULL    |                |
| age        | int          | YES  |     | NULL    |                |
+------------+--------------+------+-----+---------+----------------+
4 rows in set (0.00 sec)
```

Task 3: Insert data to the Person table

Code:

-- Insert data into the Person table

('John', 'Doe', 30),

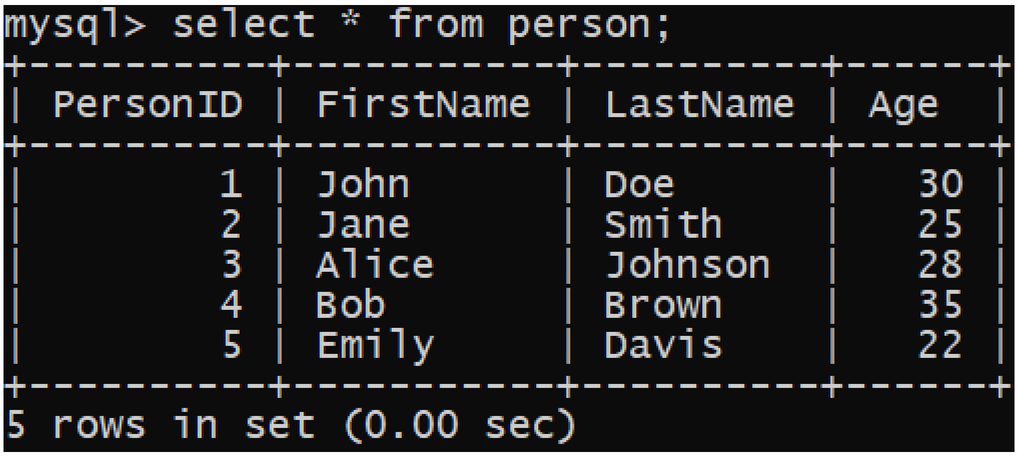
('Jane', 'Smith', 25),

('Alice', 'Johnson', 28),

('Bob', 'Brown', 35),

('Emily', 'Davis', 22);

Output:



```
mysql> select * from person;
+----------+-----------+----------+------+
| PersonID | FirstName | LastName | Age  |
+----------+-----------+----------+------+
|        1 | John      | Doe      |   30 |
|        2 | Jane      | Smith    |   25 |
|        3 | Alice     | Johnson  |   28 |
|        4 | Bob       | Brown    |   35 |
|        5 | Emily     | Davis    |   22 |
+----------+-----------+----------+------+
5 rows in set (0.00 sec)
```

## Task 4: Insert data to Employee table

Code:

-- Insert data into the Employee table

INSERT INTO Employee (first_name, last_name, age)

VALUES

('Michael', 'Scott', 45);

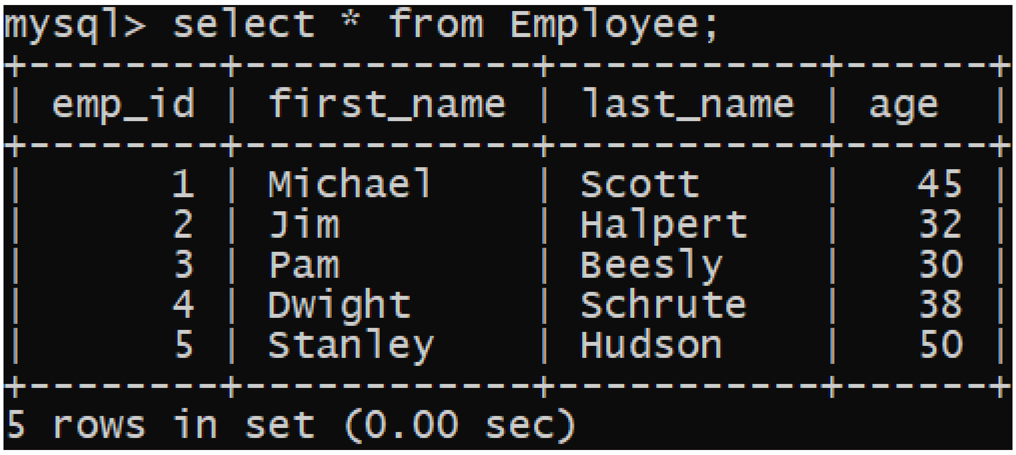
('Jim', 'Halpert', 32);

('Pam', 'Beesly', 30);

('Dwight', 'Schrute', 38);

('Stanley', 'Hudson', 50);

Output:



```
mysql> select * from Employee;
+--------+------------+-----------+------+
| emp_id | first_name | last_name | age  |
+--------+------------+-----------+------+
|      1 | Michael    | Scott     |   45 |
|      2 | Jim        | Halpert   |   32 |
|      3 | Pam        | Beesly    |   30 |
|      4 | Dwight     | Schrute   |   38 |
|      5 | Stanley    | Hudson    |   50 |
+--------+------------+-----------+------+
5 rows in set (0.00 sec)
```

Task 5: Create Union of two tables

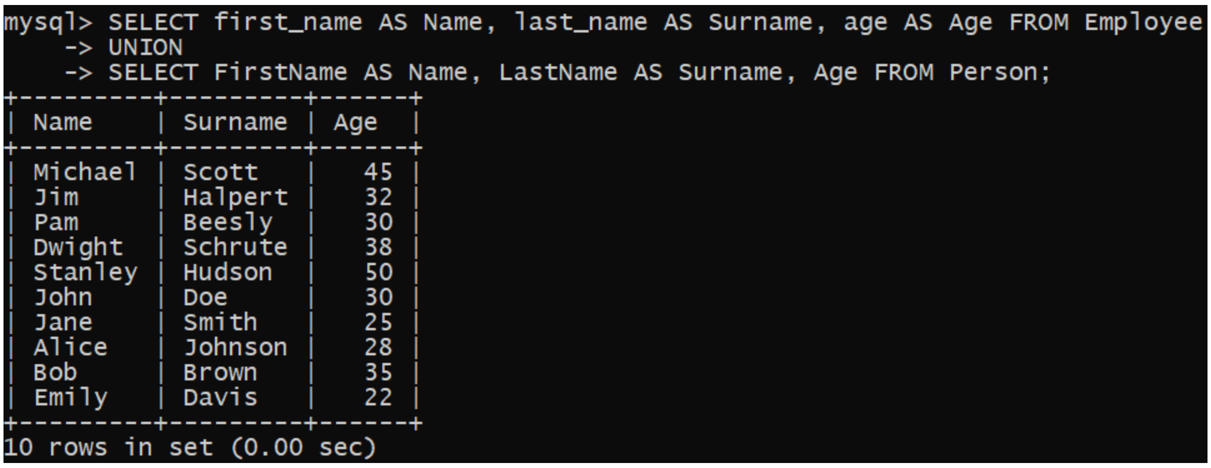
Code:

SELECT first_name AS Name, last_name AS Surname, age AS Age FROM Employee

UNION

SELECT FirstName AS Name, LastName AS Surname, Age FROM Person;

Output:



```
mysql> SELECT first_name AS Name, last_name AS Surname, age AS Age FROM Employee
    -> UNION
    -> SELECT FirstName AS Name, LastName AS Surname, Age FROM Person;
+---------+---------+------+
| Name    | Surname | Age  |
+---------+---------+------+
| Michael | Scott   |   45 |
| Jim     | Halpert |   32 |
| Pam     | Beesly  |   30 |
| Dwight  | Schrute |   38 |
| Stanley | Hudson  |   50 |
| John    | Doe     |   30 |
| Jane    | Smith   |   25 |
| Alice   | Johnson |   28 |
| Bob     | Brown   |   35 |
| Emily   | Davis   |   22 |
+---------+---------+------+
10 rows in set (0.00 sec)
```

Submission:

Create an SQL script file containing your solutions for the task. Name the file

"lab_assignment2.sql" Provide comments above the query to indicate the query's

purpose.

ChatGPT Exercise

Using ChatGPT generate SQL queries of the below problem.

Scenario 1: In a student grades database with tables for courses and grades, find the courses where the average grade is below a 'C' (consider 'C' as a passing grade).

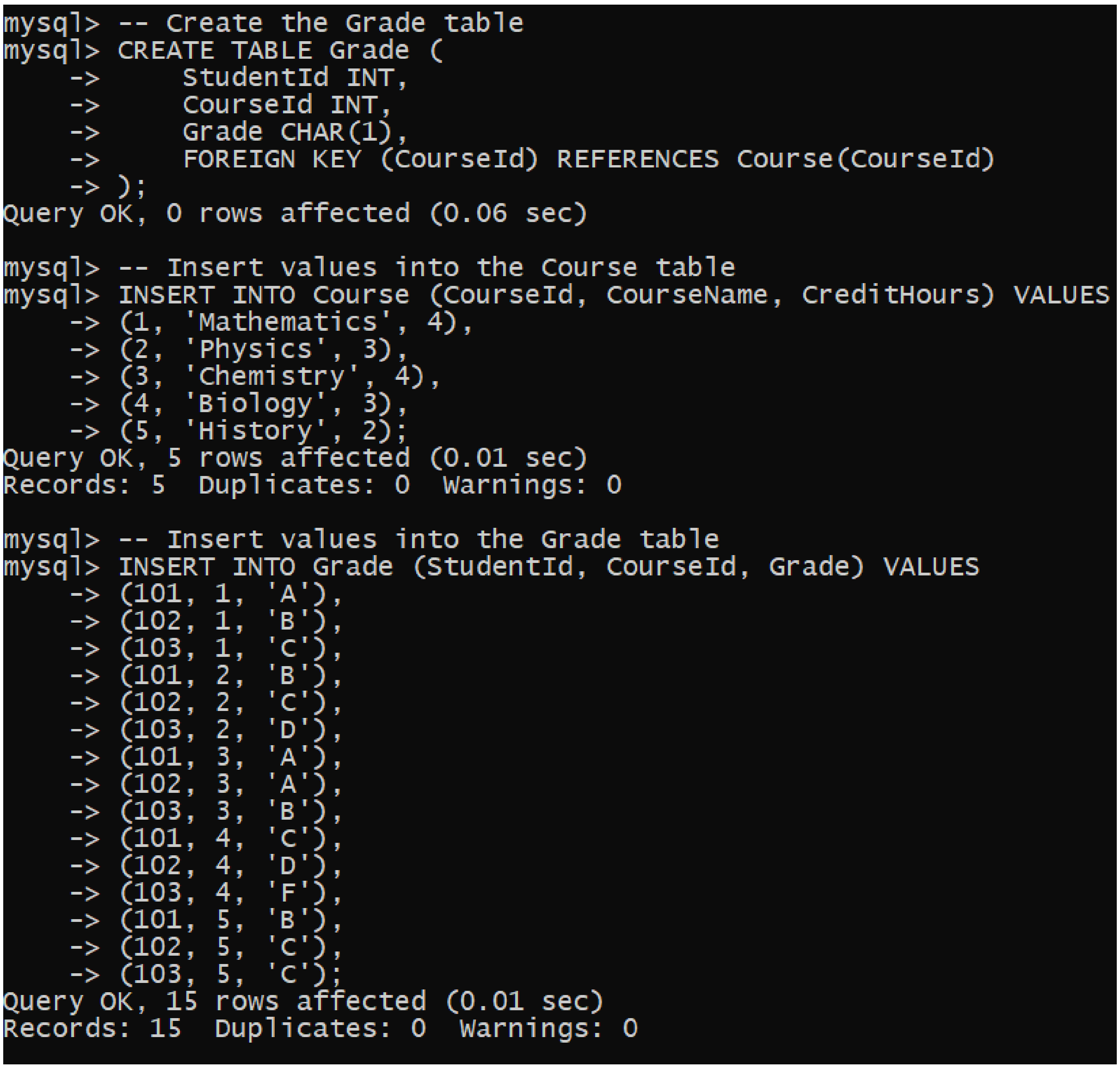
We have a "Course" table with the following columns:

CourseId, CourseName, CreditHours, and "Grade" table with the following columns: StudentId(Foreign Key), CourseID((Foreign Key),Grade. you want to find courses where the average grade is below a "C". Generate the ChatGPT prompt for creating the queries for the above requirement.

Code:

```sql
-- Create the Course table
CREATE TABLE Course (
CourseId INT PRIMARY KEY,
CourseName VARCHAR(100),
CreditHours INT
);

-- Create the Grade table
CREATE TABLE Grade (
StudentId INT,
CourseId INT,
Grade CHAR(1),
FOREIGN KEY (CourseId) REFERENCES Course(CourseId)
);
```

Output:



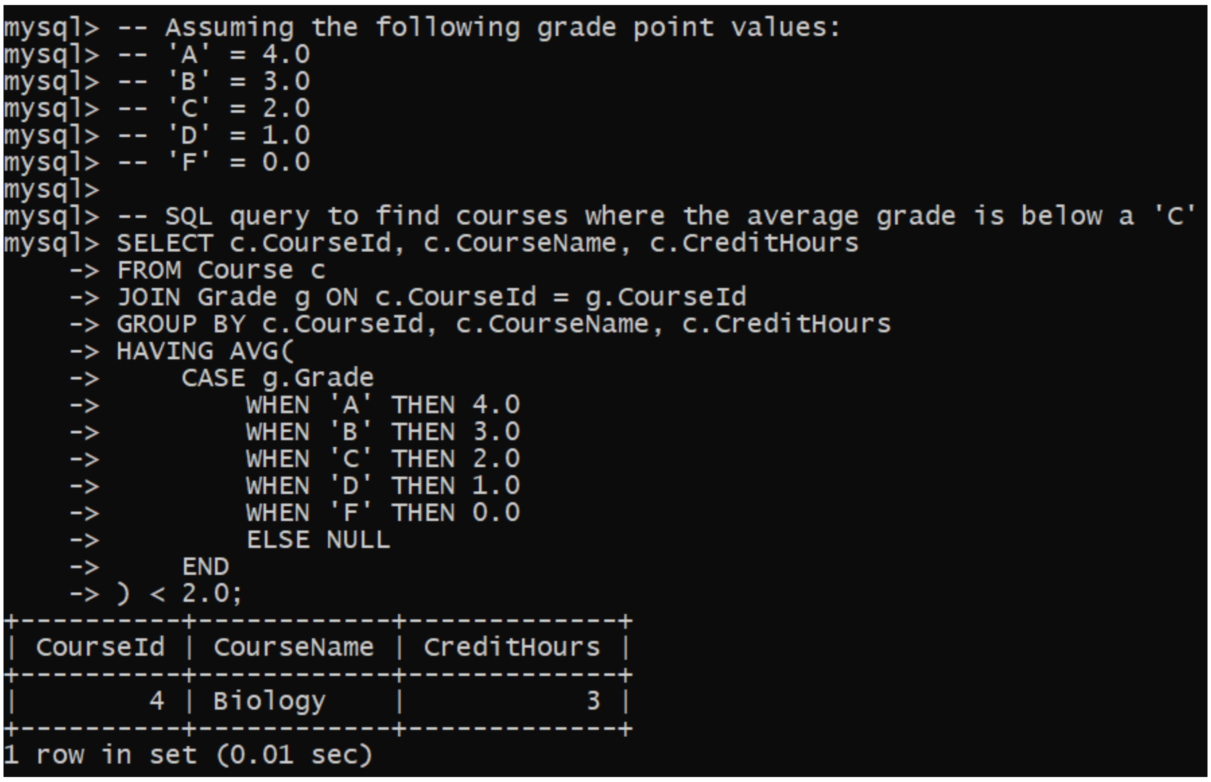
```
mysql> -- Create the Grade table
mysql> CREATE TABLE Grade (
    ->     StudentId INT,
    ->     CourseId INT,
    ->     Grade CHAR(1),
    ->     FOREIGN KEY (CourseId) REFERENCES Course(CourseId)
    -> );
Query OK, 0 rows affected (0.06 sec)

mysql> -- Insert values into the Course table
mysql> INSERT INTO Course (CourseId, CourseName, CreditHours) VALUES
    -> (1, 'Mathematics', 4),
    -> (2, 'Physics', 3),
    -> (3, 'Chemistry', 4),
    -> (4, 'Biology', 3),
    -> (5, 'History', 2);
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> -- Insert values into the Grade table
mysql> INSERT INTO Grade (StudentId, CourseId, Grade) VALUES
    -> (101, 1, 'A'),
    -> (102, 1, 'B'),
    -> (103, 1, 'C'),
    -> (101, 2, 'B'),
    -> (102, 2, 'C'),
    -> (103, 2, 'D'),
    -> (101, 3, 'A'),
    -> (102, 3, 'A'),
    -> (103, 3, 'B'),
    -> (101, 4, 'C'),
    -> (102, 4, 'D'),
    -> (103, 4, 'F'),
    -> (101, 5, 'B'),
    -> (102, 5, 'C'),
    -> (103, 5, 'C');
Query OK, 15 rows affected (0.01 sec)
Records: 15  Duplicates: 0  Warnings: 0
```

Code:

```
-- Assuming the following grade point values:

-- 'A' = 4.0

-- 'B' = 3.0

-- 'C' = 2.0

-- 'D' = 1.0

-- 'F' = 0.0
```

```sql
-- SQL query to find courses where the average grade is below a 'C'
SELECT c.CourseId, c.CourseName, c.CreditHours
FROM Course c
JOIN Grade g ON c.CourseId = g.CourseId
GROUP BY c.CourseId, c.CourseName, c.CreditHours
HAVING AVG(
CASE g.Grade
WHEN 'A' THEN 4.0
WHEN 'B' THEN 3.0
WHEN 'C' THEN 2.0
WHEN 'D' THEN 1.0
WHEN 'F' THEN 0.0
ELSE NULL
END
) < 2.0;
```

Output:



```
mysql> -- Assuming the following grade point values:
mysql> -- 'A' = 4.0
mysql> -- 'B' = 3.0
mysql> -- 'C' = 2.0
mysql> -- 'D' = 1.0
mysql> -- 'F' = 0.0
mysql>
mysql> -- SQL query to find courses where the average grade is below a 'C'
mysql> SELECT c.CourseId, c.CourseName, c.CreditHours
    -> FROM Course c
    -> JOIN Grade g ON c.CourseId = g.CourseId
    -> GROUP BY c.CourseId, c.CourseName, c.CreditHours
    -> HAVING AVG(
    ->     CASE g.Grade
    ->         WHEN 'A' THEN 4.0
    ->         WHEN 'B' THEN 3.0
    ->         WHEN 'C' THEN 2.0
    ->         WHEN 'D' THEN 1.0
    ->         WHEN 'F' THEN 0.0
    ->         ELSE NULL
    ->     END
    -> ) < 2.0;
+----------+------------+-------------+
| CourseId | CourseName | CreditHours |
+----------+------------+-------------+
|        4 | Biology    |           3 |
+----------+------------+-------------+
1 row in set (0.01 sec)
```

**THANK YOU, SIR**