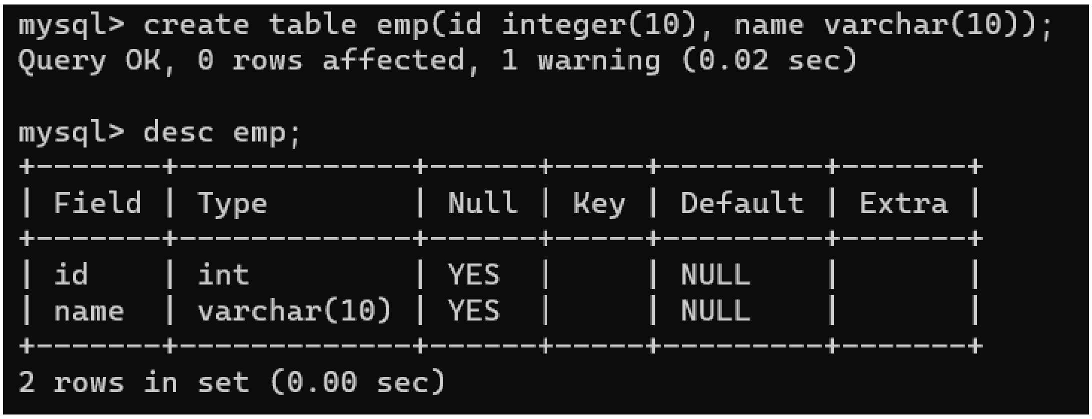
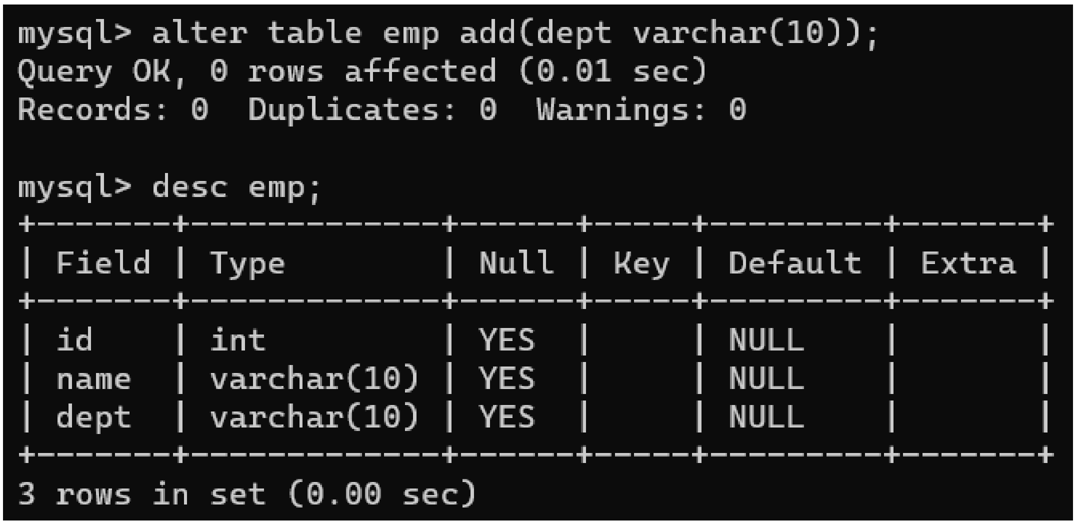
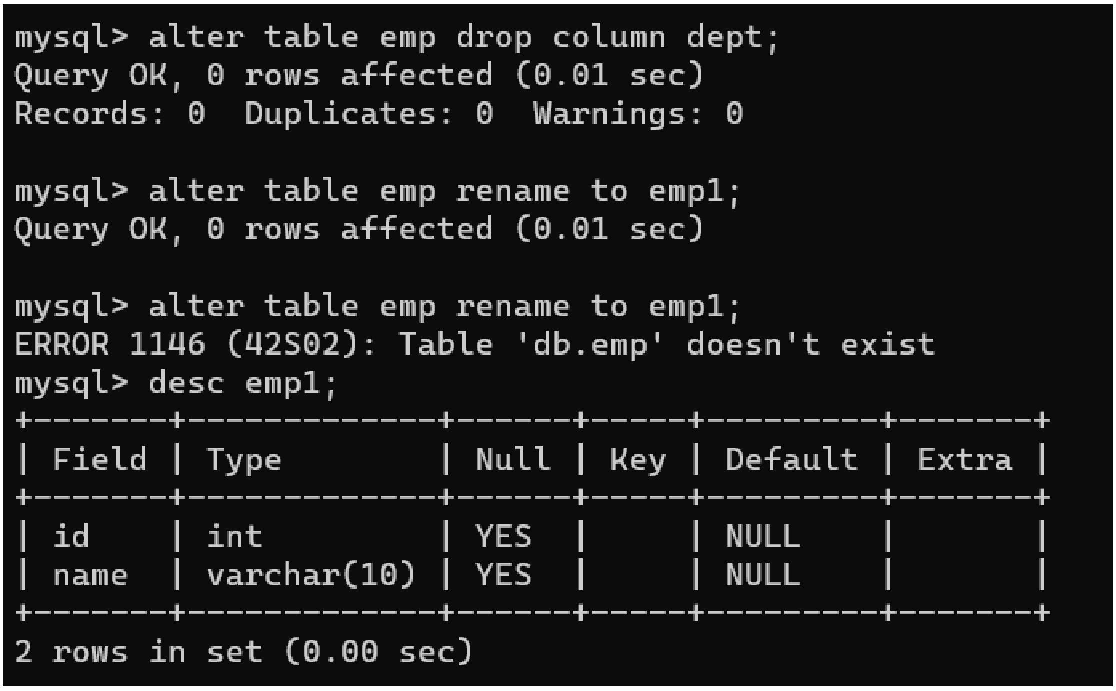


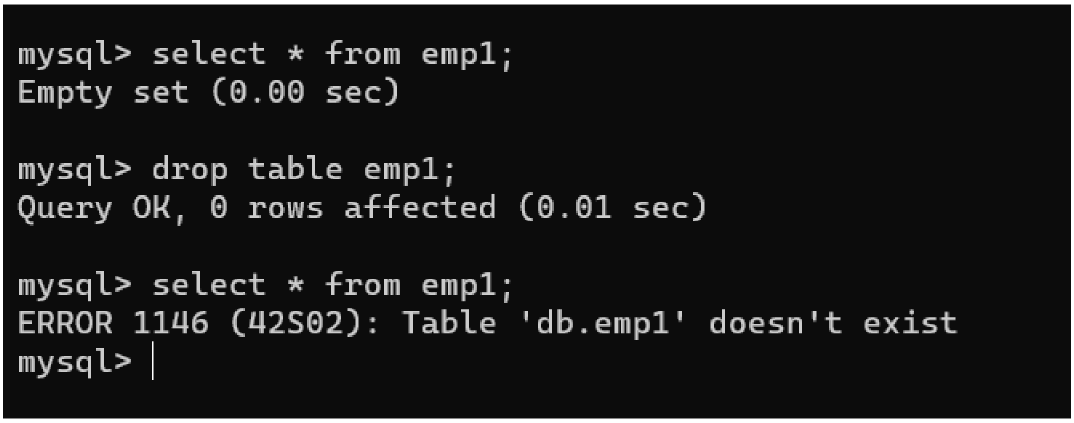
```
mysql> create table emp(id integer(10), name varchar(10));
Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> desc emp;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| id    | int         | YES  |     | NULL    |       |
| name  | varchar(10) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```



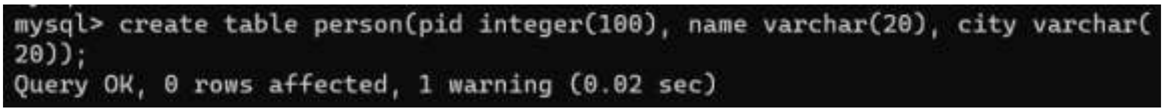
```
mysql> alter table emp add(dept varchar(10));
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> desc emp;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| id    | int         | YES  |     | NULL    |       |
| name  | varchar(10) | YES  |     | NULL    |       |
| dept  | varchar(10) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.00 sec)
```



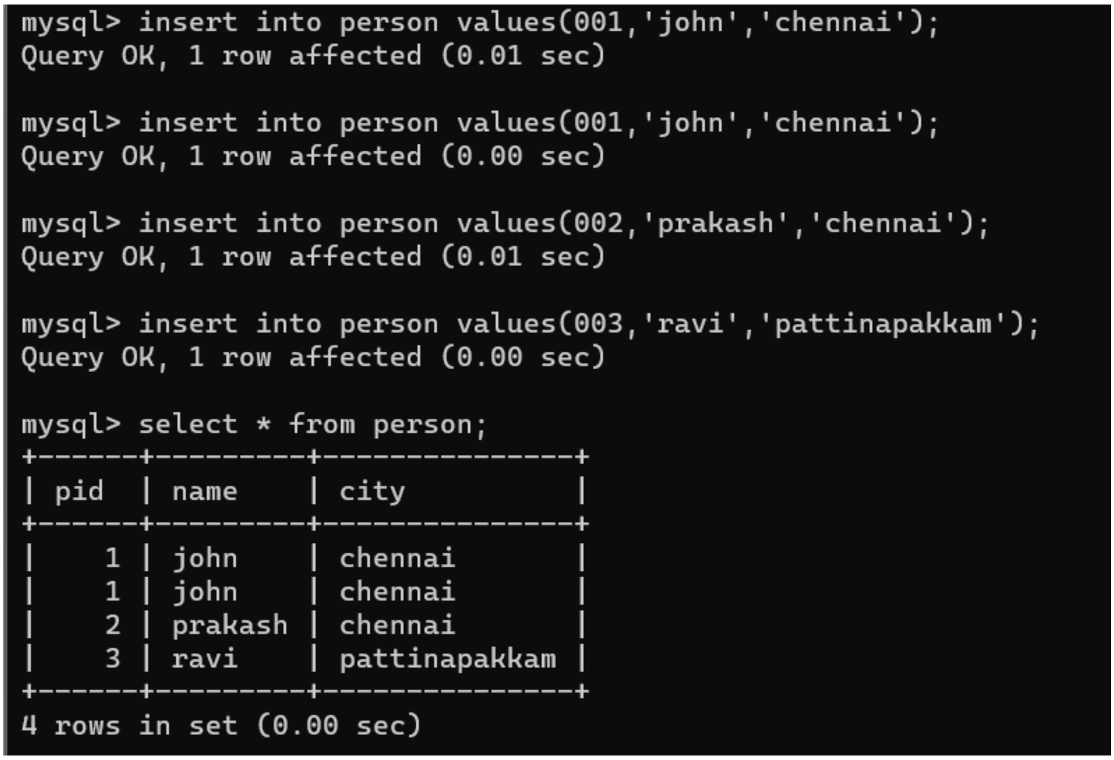
```
mysql> alter table emp drop column dept;
Query OK, 0 rows affected (0.01 sec)
Records: 0  Duplicates: 0  Warnings: 0

mysql> alter table emp rename to emp1;
Query OK, 0 rows affected (0.01 sec)

mysql> alter table emp rename to emp1;
ERROR 1146 (42S02): Table 'db.emp' doesn't exist
mysql> desc emp1;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| id    | int         | YES  |     | NULL    |       |
| name  | varchar(10) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)
```



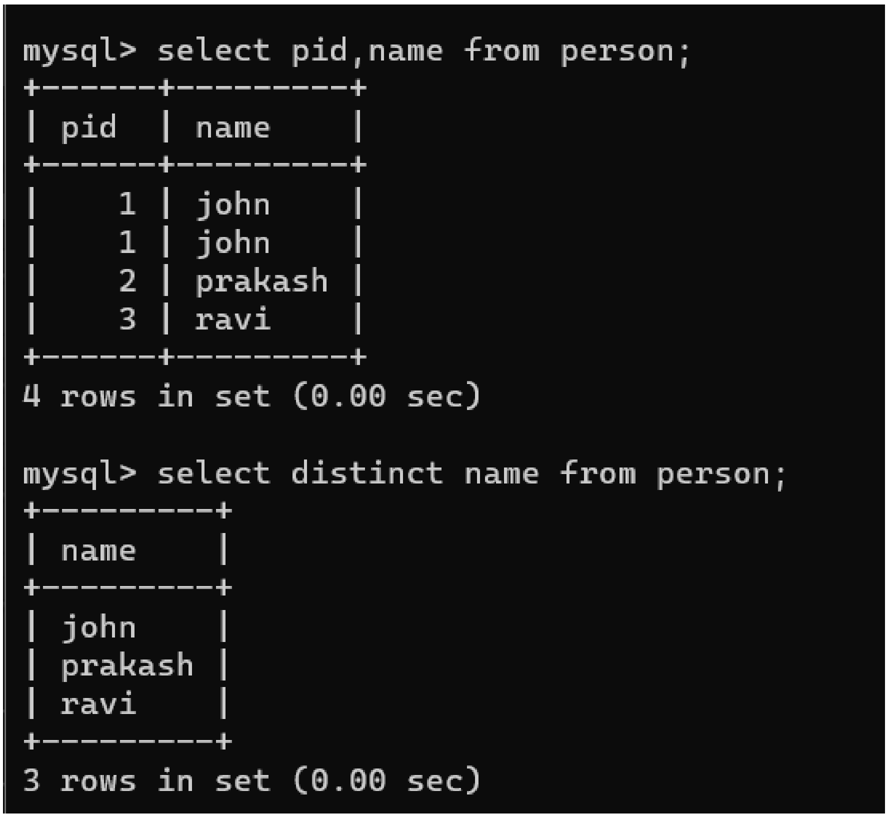
```
mysql> select * from emp1;
Empty set (0.00 sec)

mysql> drop table emp1;
Query OK, 0 rows affected (0.01 sec)

mysql> select * from emp1;
ERROR 1146 (42S02): Table 'db.emp1' doesn't exist
mysql>
```



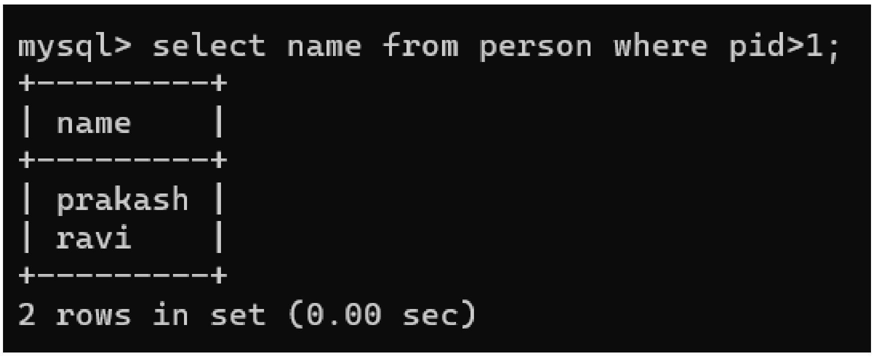
```
mysql> create table person(pid integer(100), name varchar(20), city varchar(
20));
Query OK, 0 rows affected, 1 warning (0.02 sec)
```



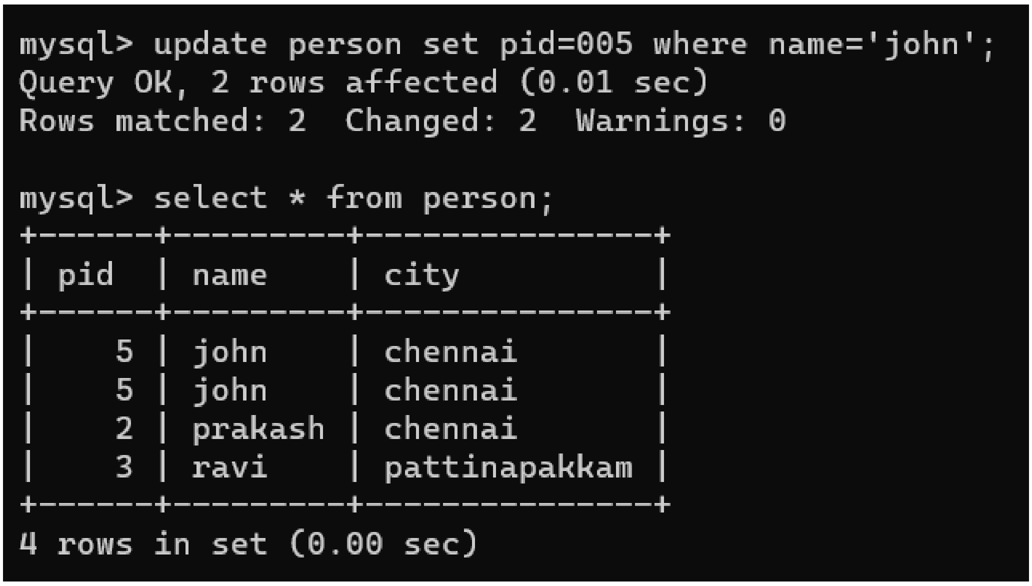
```
mysql> insert into person values(001,'john','chennai');
Query OK, 1 row affected (0.01 sec)

mysql> insert into person values(001,'john','chennai');
Query OK, 1 row affected (0.00 sec)

mysql> insert into person values(002,'prakash','chennai');
Query OK, 1 row affected (0.01 sec)

mysql> insert into person values(003,'ravi','pattinapakkam');
Query OK, 1 row affected (0.00 sec)

mysql> select * from person;
+------+---------+---------------+
| pid  | name    | city          |
+------+---------+---------------+
|    1 | john    | chennai       |
|    1 | john    | chennai       |
|    2 | prakash | chennai       |
|    3 | ravi    | pattinapakkam |
+------+---------+---------------+
4 rows in set (0.00 sec)
```



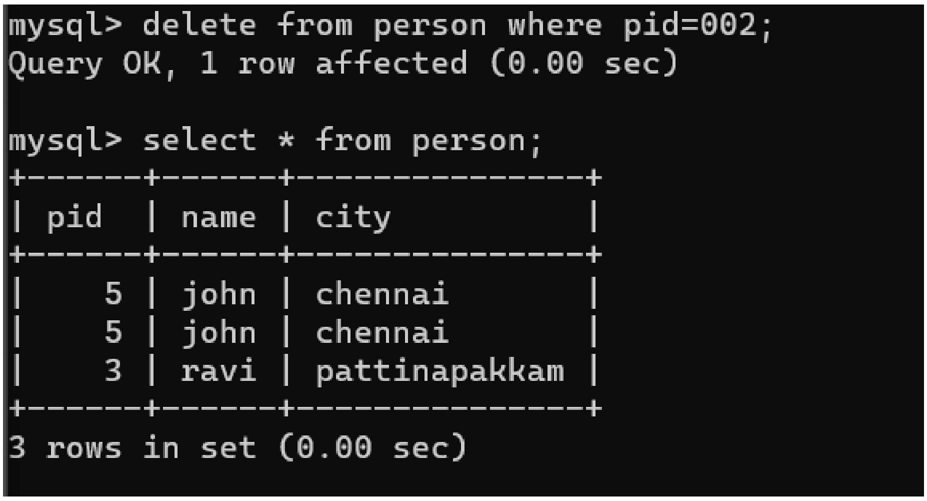
```
mysql> select pid,name from person;
+------+---------+
| pid  | name    |
+------+---------+
|    1 | john    |
|    1 | john    |
|    2 | prakash |
|    3 | ravi    |
+------+---------+
4 rows in set (0.00 sec)

mysql> select distinct name from person;
+---------+
| name    |
+---------+
| john    |
| prakash |
| ravi    |
+---------+
3 rows in set (0.00 sec)
```



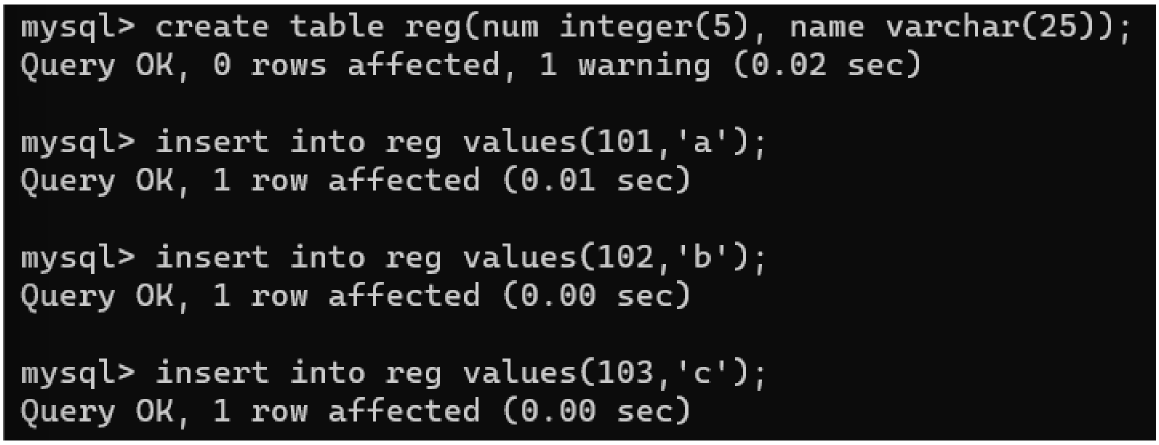
```
mysql> select name from person where pid>1;
+---------+
| name    |
+---------+
| prakash |
| ravi    |
+---------+
2 rows in set (0.00 sec)
```



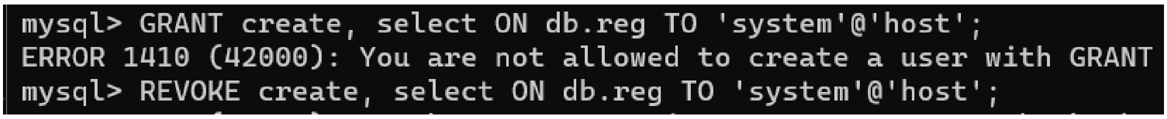
```
mysql> update person set pid=005 where name='john';
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> select * from person;
+------+---------+---------------+
| pid  | name    | city          |
+------+---------+---------------+
|    5 | john    | chennai       |
|    5 | john    | chennai       |
|    2 | prakash | chennai       |
|    3 | ravi    | pattinapakkam |
+------+---------+---------------+
4 rows in set (0.00 sec)
```



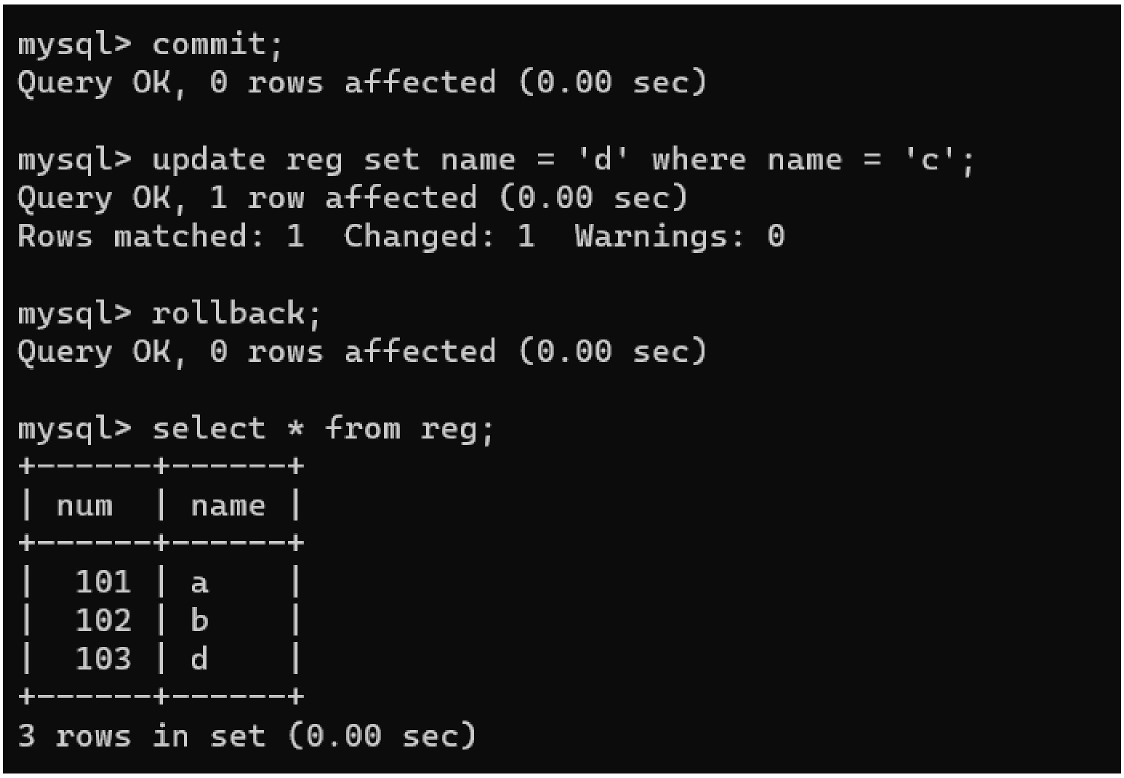
```
mysql> delete from person where pid=002;
Query OK, 1 row affected (0.00 sec)

mysql> select * from person;
+------+------+---------------+
| pid  | name | city          |
+------+------+---------------+
|    5 | john | chennai       |
|    5 | john | chennai       |
|    3 | ravi | pattinapakkam |
+------+------+---------------+
3 rows in set (0.00 sec)
```



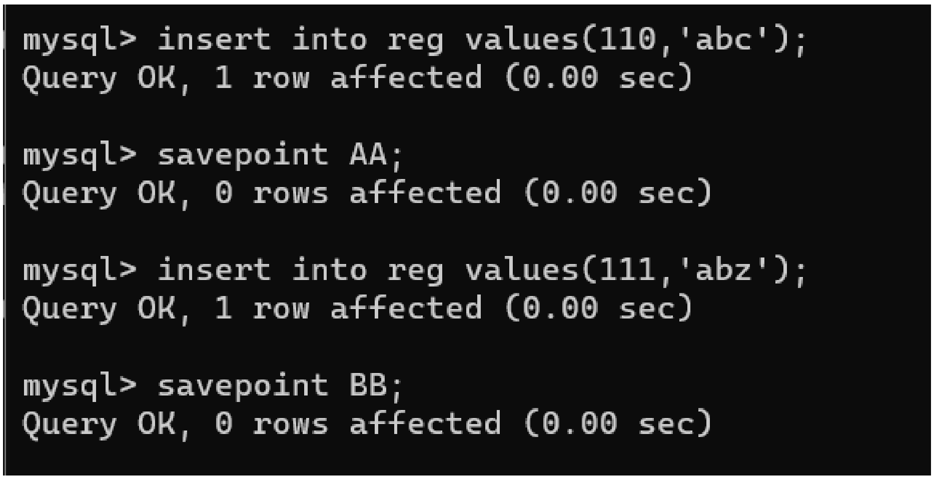
```
mysql> create table reg(num integer(5), name varchar(25));
Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> insert into reg values(101,'a');
Query OK, 1 row affected (0.01 sec)

mysql> insert into reg values(102,'b');
Query OK, 1 row affected (0.00 sec)

mysql> insert into reg values(103,'c');
Query OK, 1 row affected (0.00 sec)
```



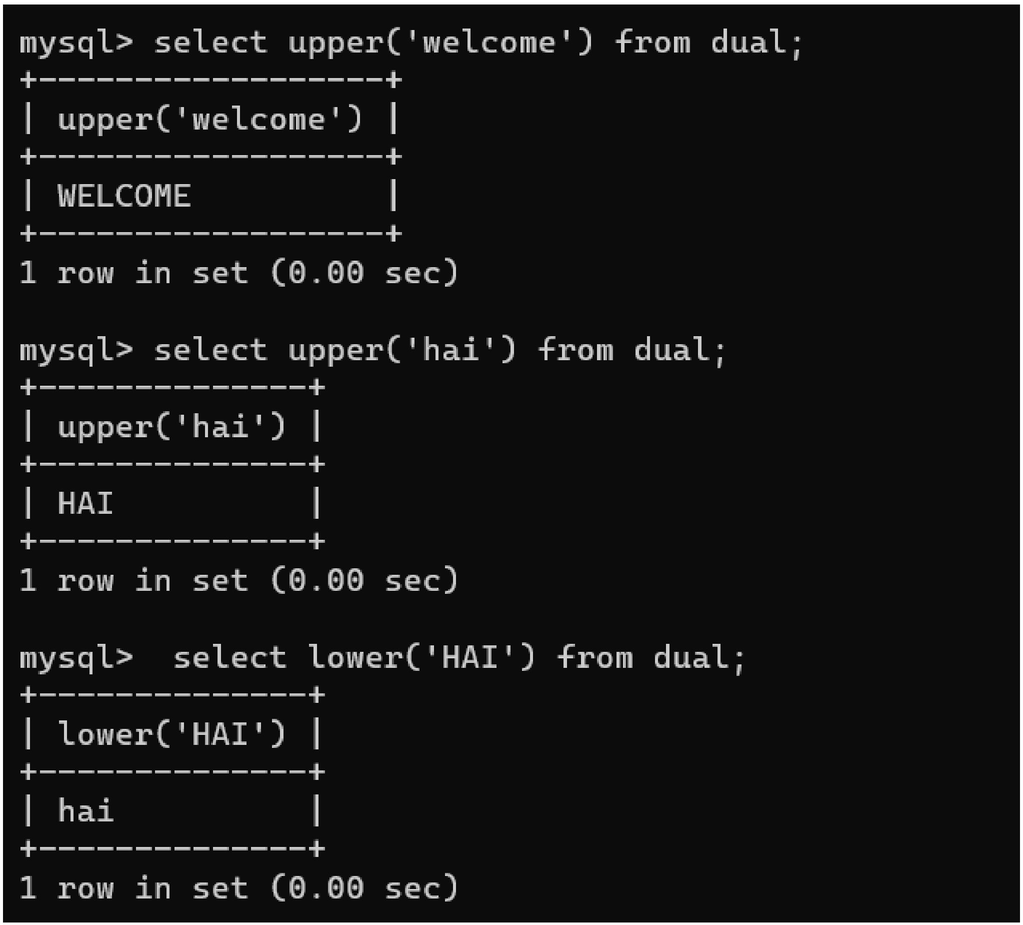
```
mysql> GRANT create, select ON db.reg TO 'system'@'host';
ERROR 1410 (42000): You are not allowed to create a user with GRANT
mysql> REVOKE create, select ON db.reg TO 'system'@'host';
```



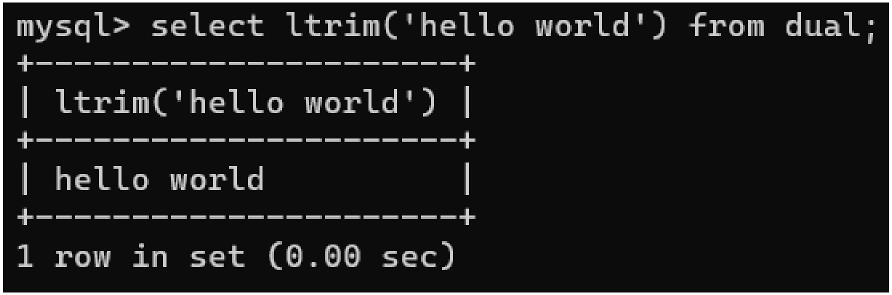
```
mysql> commit;
Query OK, 0 rows affected (0.00 sec)

mysql> update reg set name = 'd' where name = 'c';
Query OK, 1 row affected (0.00 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> rollback;
Query OK, 0 rows affected (0.00 sec)

mysql> select * from reg;
+------+------+
| num  | name |
+------+------+
|  101 | a    |
|  102 | b    |
|  103 | d    |
+------+------+
3 rows in set (0.00 sec)
```



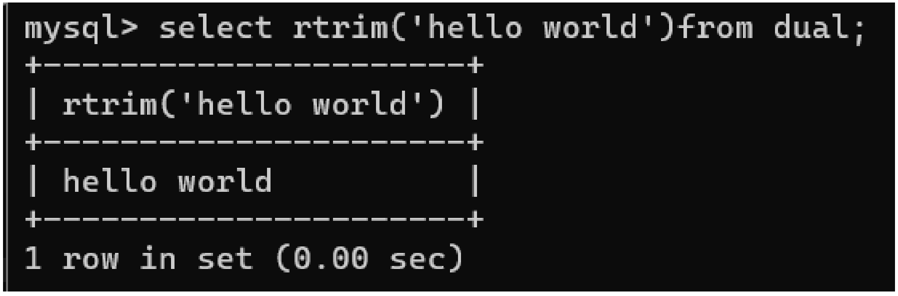
```
mysql> insert into reg values(110,'abc');
Query OK, 1 row affected (0.00 sec)

mysql> savepoint AA;
Query OK, 0 rows affected (0.00 sec)

mysql> insert into reg values(111,'abz');
Query OK, 1 row affected (0.00 sec)

mysql> savepoint BB;
Query OK, 0 rows affected (0.00 sec)
```



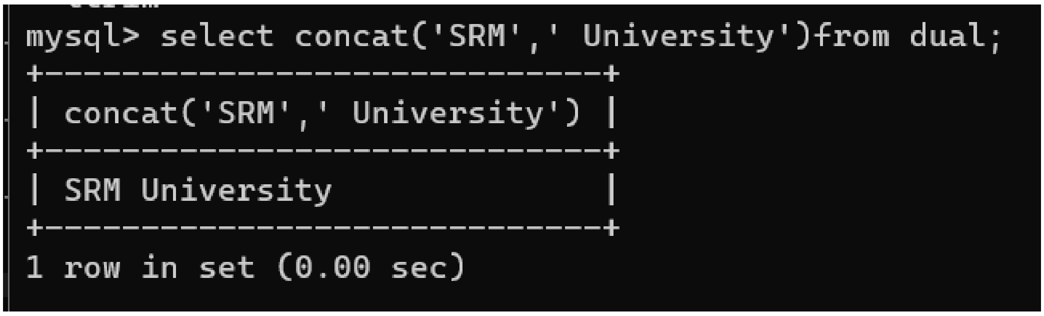
```
mysql> select upper('welcome') from dual;
+------------------+
| upper('welcome') |
+------------------+
| WELCOME          |
+------------------+
1 row in set (0.00 sec)

mysql> select upper('hai') from dual;
+--------------+
| upper('hai') |
+--------------+
| HAI          |
+--------------+
1 row in set (0.00 sec)

mysql>  select lower('HAI') from dual;
+--------------+
| lower('HAI') |
+--------------+
| hai          |
+--------------+
1 row in set (0.00 sec)
```



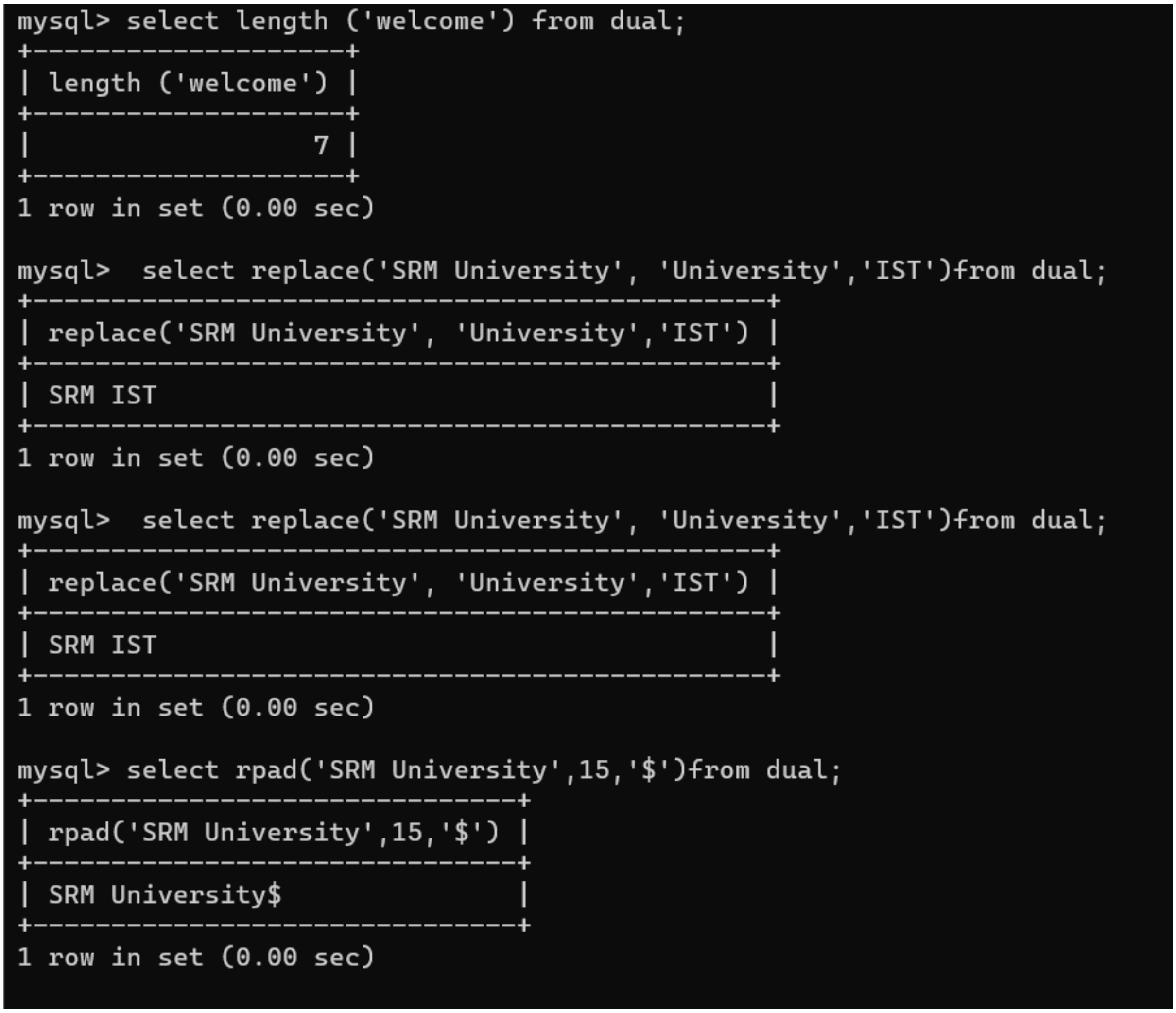
```
mysql> select ltrim('hello world') from dual;
+----------------------+
| ltrim('hello world') |
+----------------------+
| hello world          |
+----------------------+
1 row in set (0.00 sec)
```



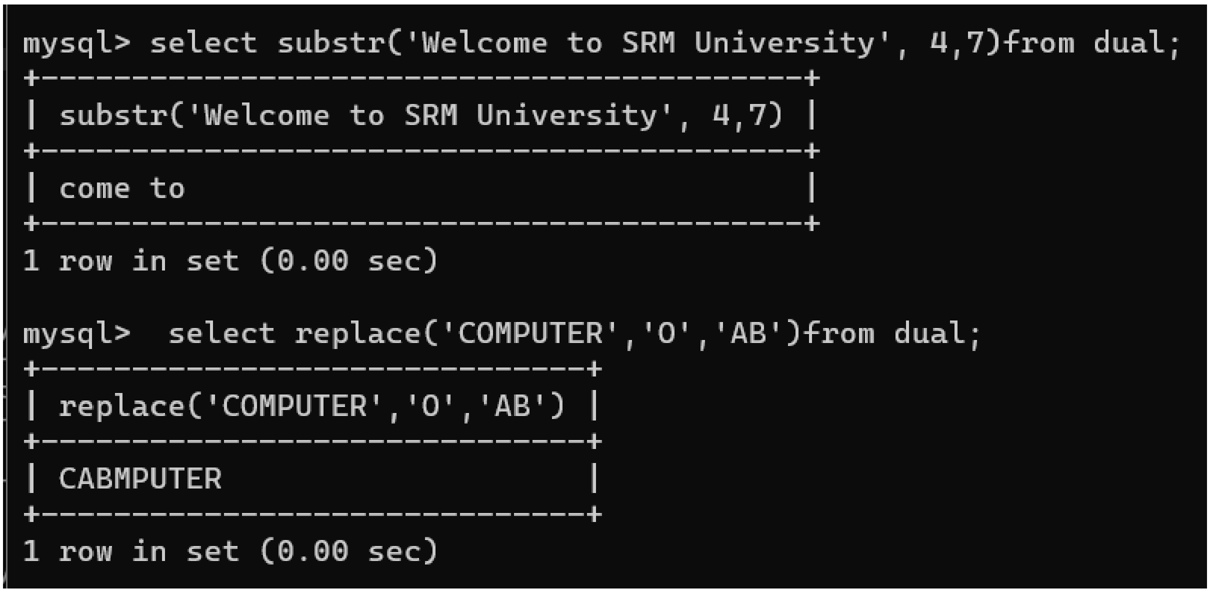
```
mysql> select rtrim('hello world')from dual;
+----------------------+
| rtrim('hello world') |
+----------------------+
| hello world          |
+----------------------+
1 row in set (0.00 sec)
```



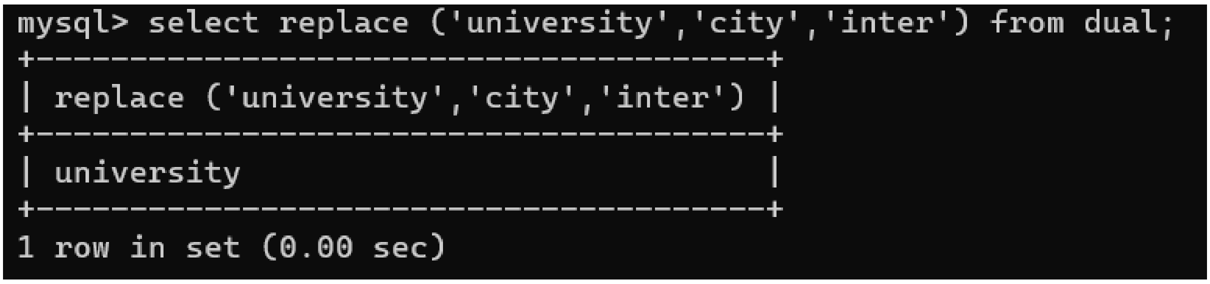
```
mysql> select concat('SRM',' University')from dual;
+-----------------------------+
| concat('SRM',' University') |
+-----------------------------+
| SRM University              |
+-----------------------------+
1 row in set (0.00 sec)
```



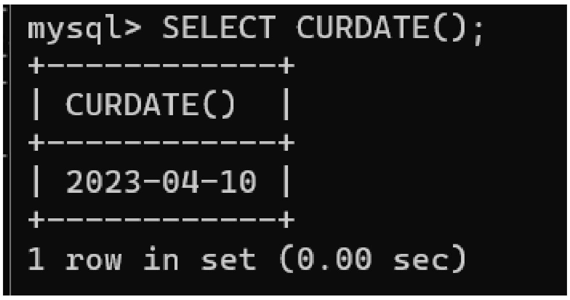
```
mysql> select length ('welcome') from dual;
+--------------------+
| length ('welcome') |
+--------------------+
|                  7 |
+--------------------+
1 row in set (0.00 sec)

mysql>  select replace('SRM University', 'University','IST')from dual;
+-----------------------------------------------+
| replace('SRM University', 'University','IST') |
+-----------------------------------------------+
| SRM IST                                       |
+-----------------------------------------------+
1 row in set (0.00 sec)

mysql>  select replace('SRM University', 'University','IST')from dual;
+-----------------------------------------------+
| replace('SRM University', 'University','IST') |
+-----------------------------------------------+
| SRM IST                                       |
+-----------------------------------------------+
1 row in set (0.00 sec)

mysql> select rpad('SRM University',15,'$')from dual;
+-------------------------------+
| rpad('SRM University',15,'$') |
+-------------------------------+
| SRM University$               |
+-------------------------------+
1 row in set (0.00 sec)
```



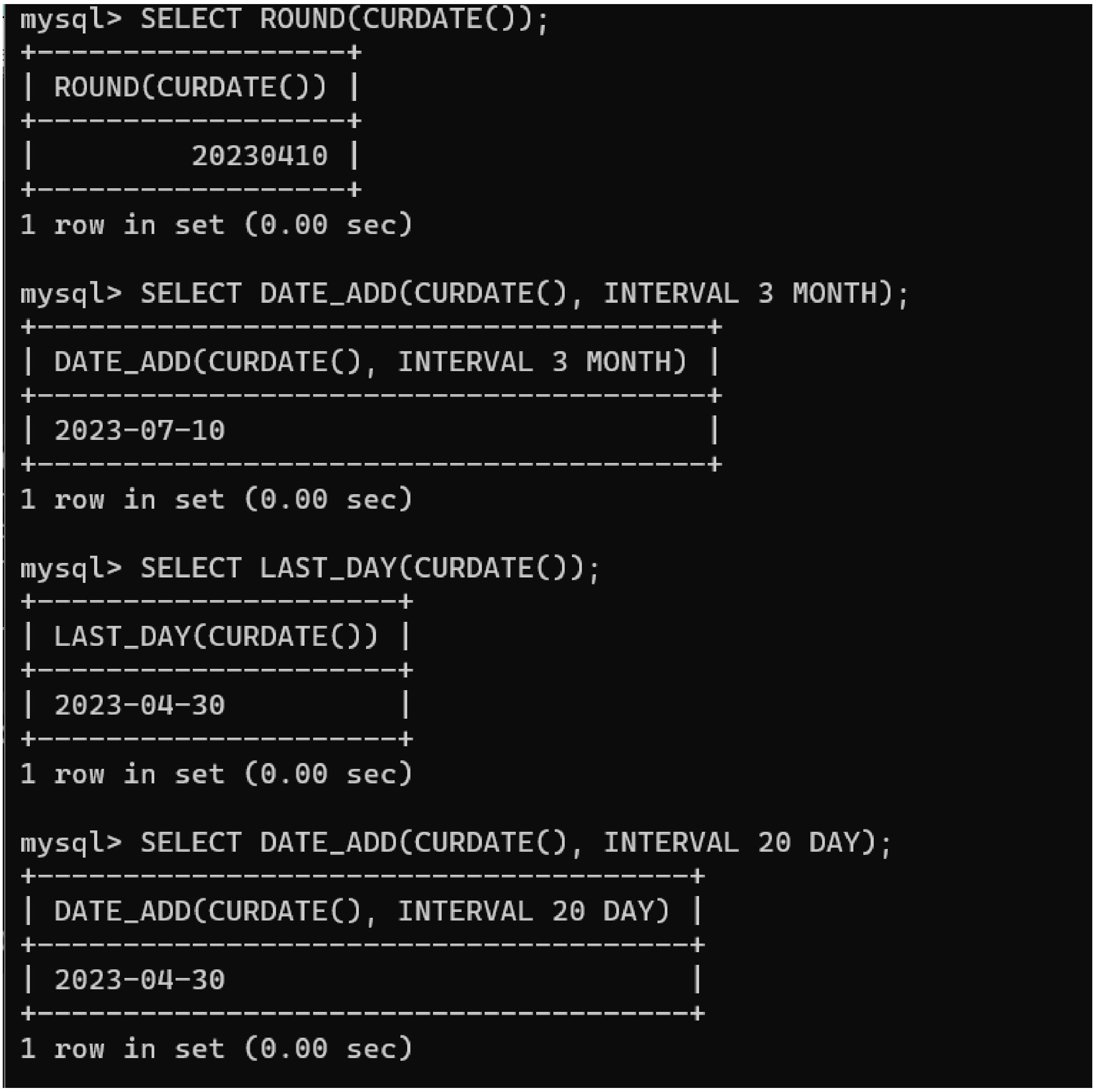
```
mysql> select substr('Welcome to SRM University', 4,7)from dual;
+------------------------------------------+
| substr('Welcome to SRM University', 4,7) |
+------------------------------------------+
| come to                                  |
+------------------------------------------+
1 row in set (0.00 sec)

mysql>  select replace('COMPUTER','O','AB')from dual;
+------------------------------+
| replace('COMPUTER','O','AB') |
+------------------------------+
| CABMPUTER                    |
+------------------------------+
1 row in set (0.00 sec)
```



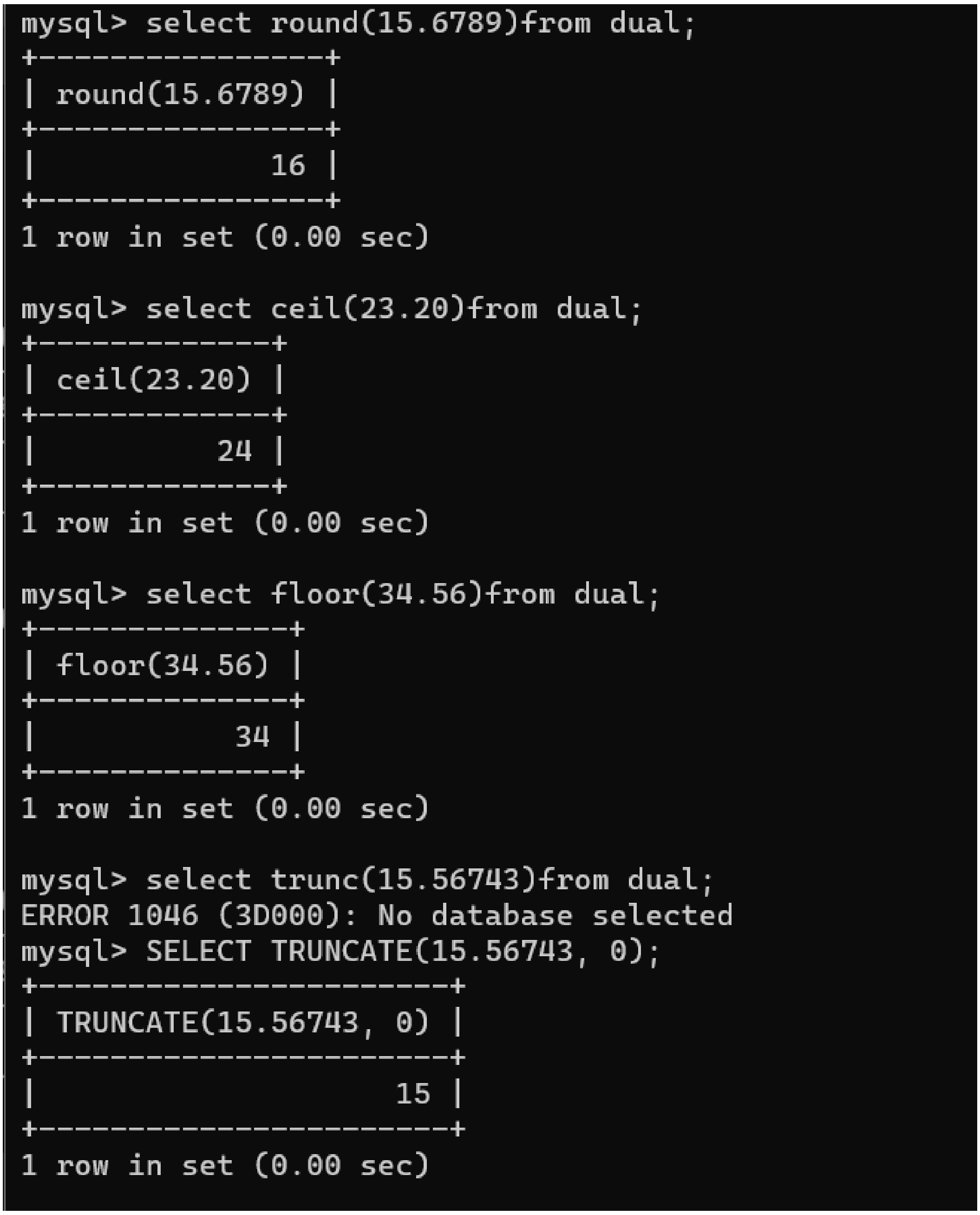
```
mysql> select replace ('university','city','inter') from dual;
+---------------------------------------+
| replace ('university','city','inter') |
+---------------------------------------+
| university                            |
+---------------------------------------+
1 row in set (0.00 sec)
```



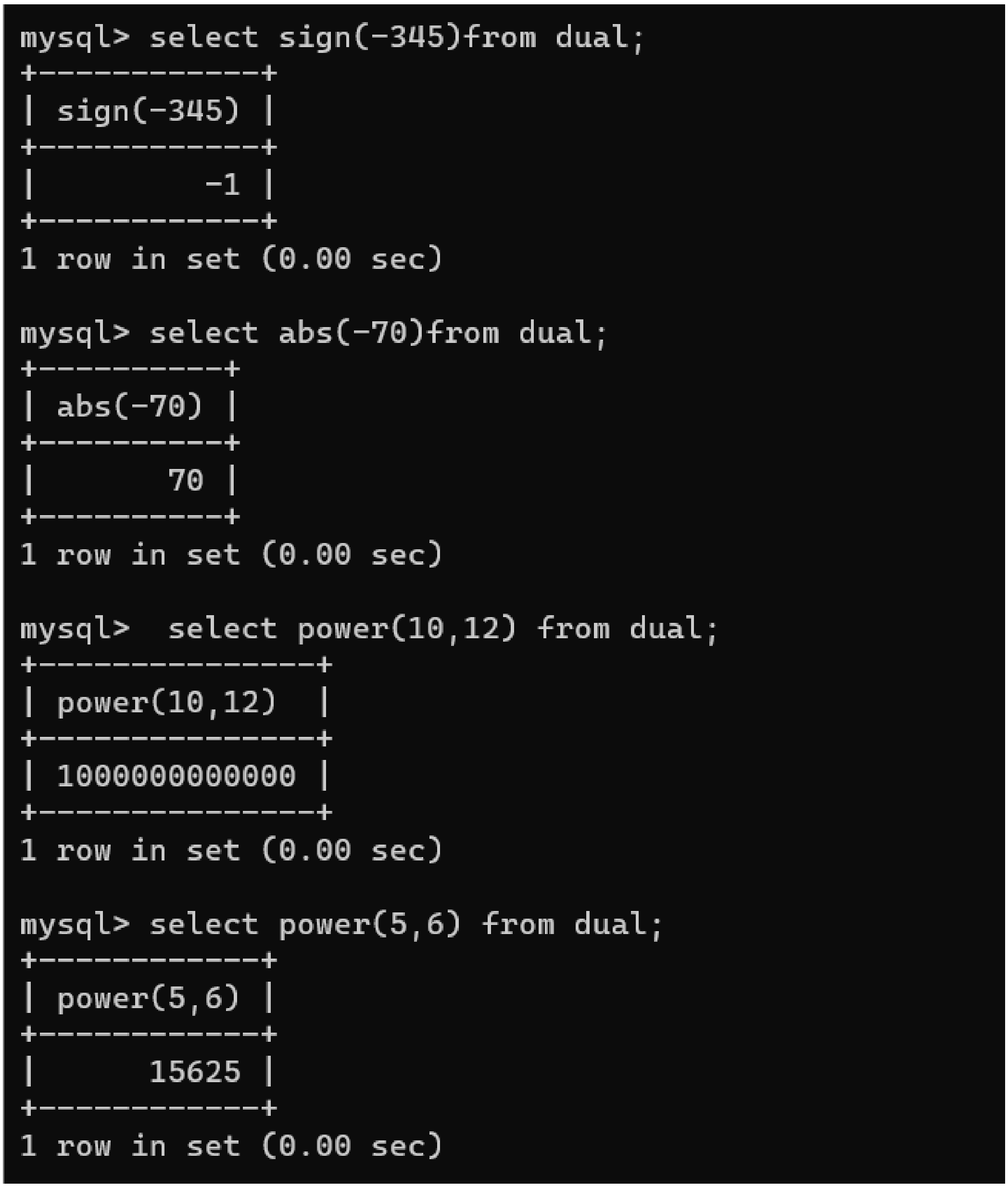
```
mysql> SELECT CURDATE();
+------------+
| CURDATE()  |
+------------+
| 2023-04-10 |
+------------+
1 row in set (0.00 sec)
```



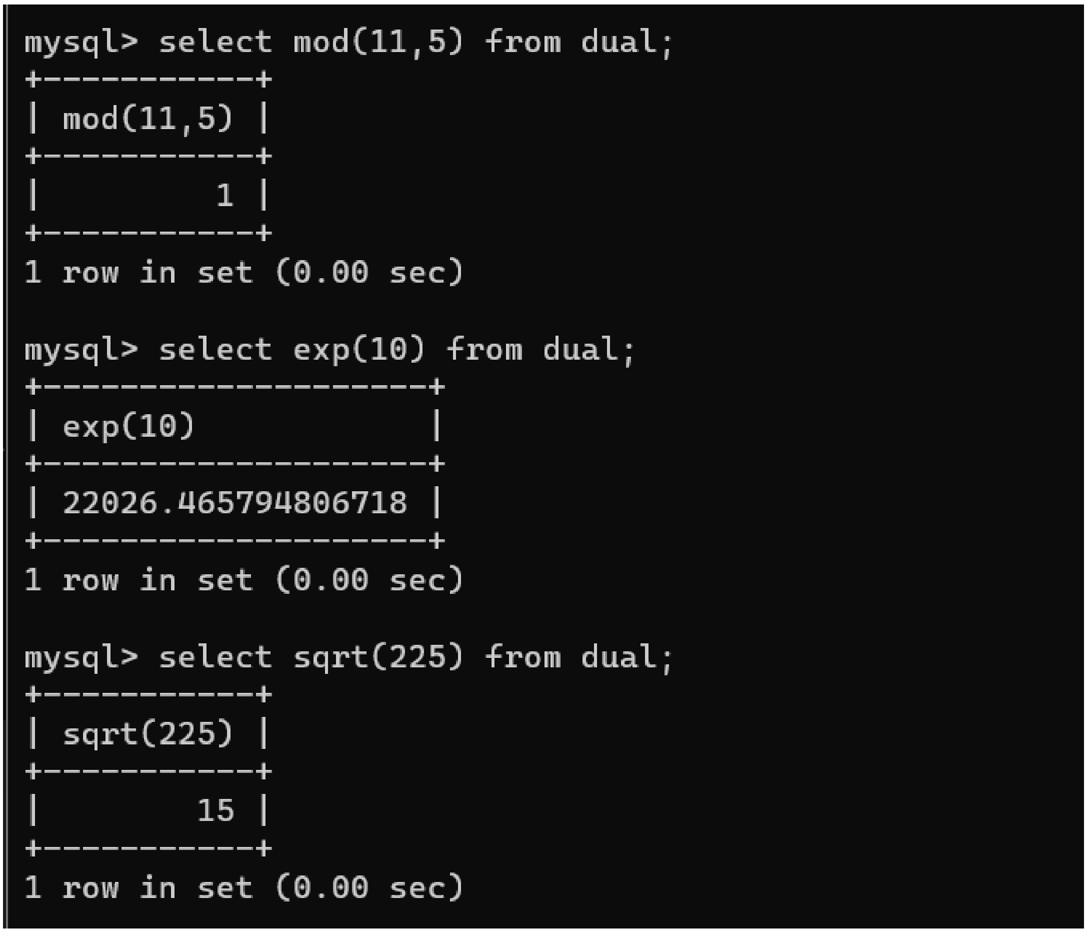
```
mysql> SELECT ROUND(CURDATE());
+------------------+
| ROUND(CURDATE()) |
+------------------+
|         20230410 |
+------------------+
1 row in set (0.00 sec)

mysql> SELECT DATE_ADD(CURDATE(), INTERVAL 3 MONTH);
+---------------------------------------+
| DATE_ADD(CURDATE(), INTERVAL 3 MONTH) |
+---------------------------------------+
| 2023-07-10                            |
+---------------------------------------+
1 row in set (0.00 sec)

mysql> SELECT LAST_DAY(CURDATE());
+---------------------+
| LAST_DAY(CURDATE()) |
+---------------------+
| 2023-04-30          |
+---------------------+
1 row in set (0.00 sec)

mysql> SELECT DATE_ADD(CURDATE(), INTERVAL 20 DAY);
+--------------------------------------+
| DATE_ADD(CURDATE(), INTERVAL 20 DAY) |
+--------------------------------------+
| 2023-04-30                           |
+--------------------------------------+
1 row in set (0.00 sec)
```



```
mysql> select round(15.6789)from dual;
+----------------+
| round(15.6789) |
+----------------+
|             16 |
+----------------+
1 row in set (0.00 sec)

mysql> select ceil(23.20)from dual;
+-------------+
| ceil(23.20) |
+-------------+
|          24 |
+-------------+
1 row in set (0.00 sec)

mysql> select floor(34.56)from dual;
+--------------+
| floor(34.56) |
+--------------+
|           34 |
+--------------+
1 row in set (0.00 sec)

mysql> select trunc(15.56743)from dual;
ERROR 1046 (3D000): No database selected
mysql> SELECT TRUNCATE(15.56743, 0);
+----------------------+
| TRUNCATE(15.56743, 0) |
+----------------------+
|                   15 |
+----------------------+
1 row in set (0.00 sec)
```

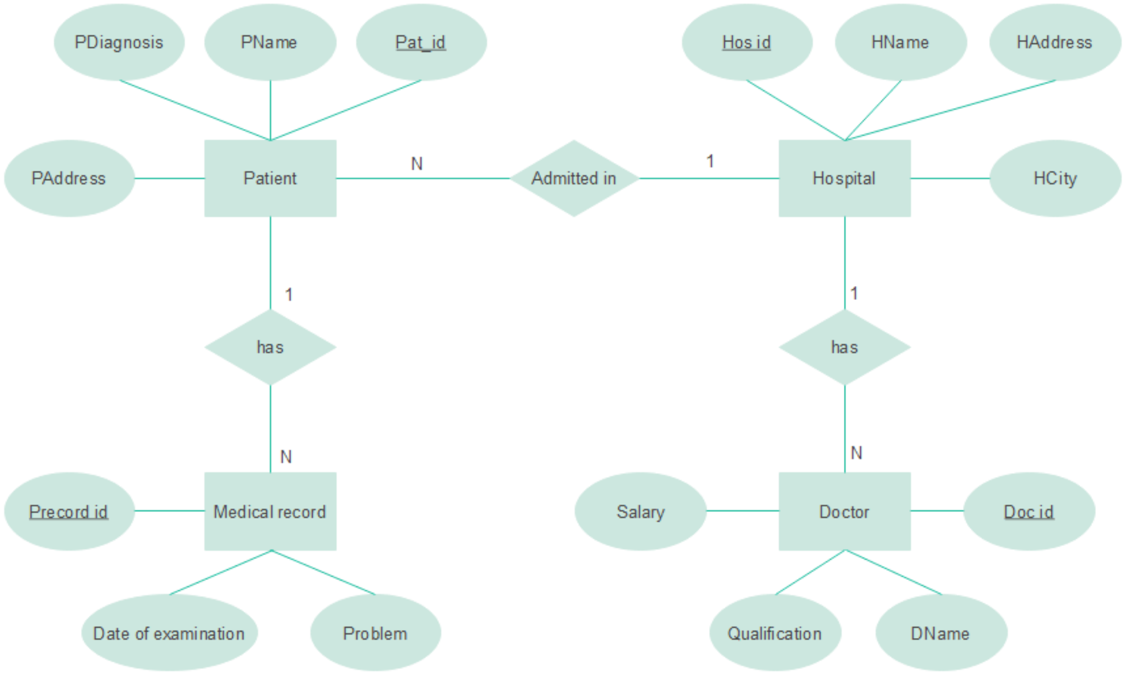


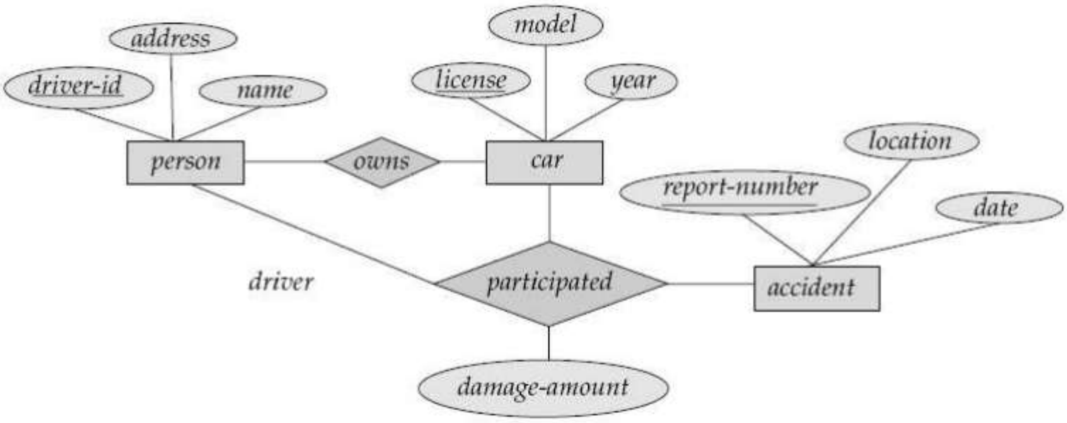
```
mysql> select sign(-345)from dual;
+------------+
| sign(-345) |
+------------+
|         -1 |
+------------+
1 row in set (0.00 sec)

mysql> select abs(-70)from dual;
+----------+
| abs(-70) |
+----------+
|       70 |
+----------+
1 row in set (0.00 sec)

mysql>  select power(10,12) from dual;
+---------------+
| power(10,12)  |
+---------------+
| 1000000000000 |
+---------------+
1 row in set (0.00 sec)

mysql> select power(5,6) from dual;
+------------+
| power(5,6) |
+------------+
|      15625 |
+------------+
1 row in set (0.00 sec)
```

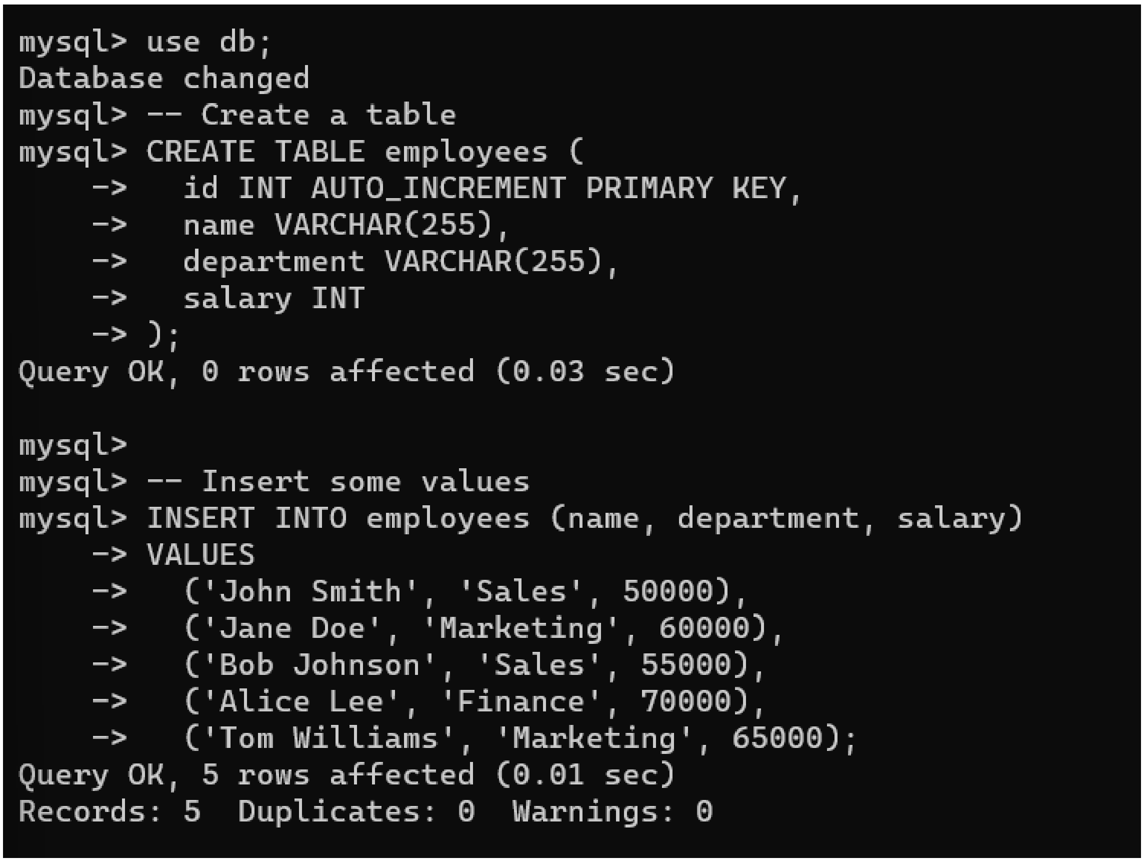


```
mysql> select mod(11,5) from dual;
+-----------+
| mod(11,5) |
+-----------+
|         1 |
+-----------+
1 row in set (0.00 sec)

mysql> select exp(10) from dual;
+--------------------+
| exp(10)            |
+--------------------+
| 22026.465794806718 |
+--------------------+
1 row in set (0.00 sec)

mysql> select sqrt(225) from dual;
+-----------+
| sqrt(225) |
+-----------+
|        15 |
+-----------+
1 row in set (0.00 sec)
```

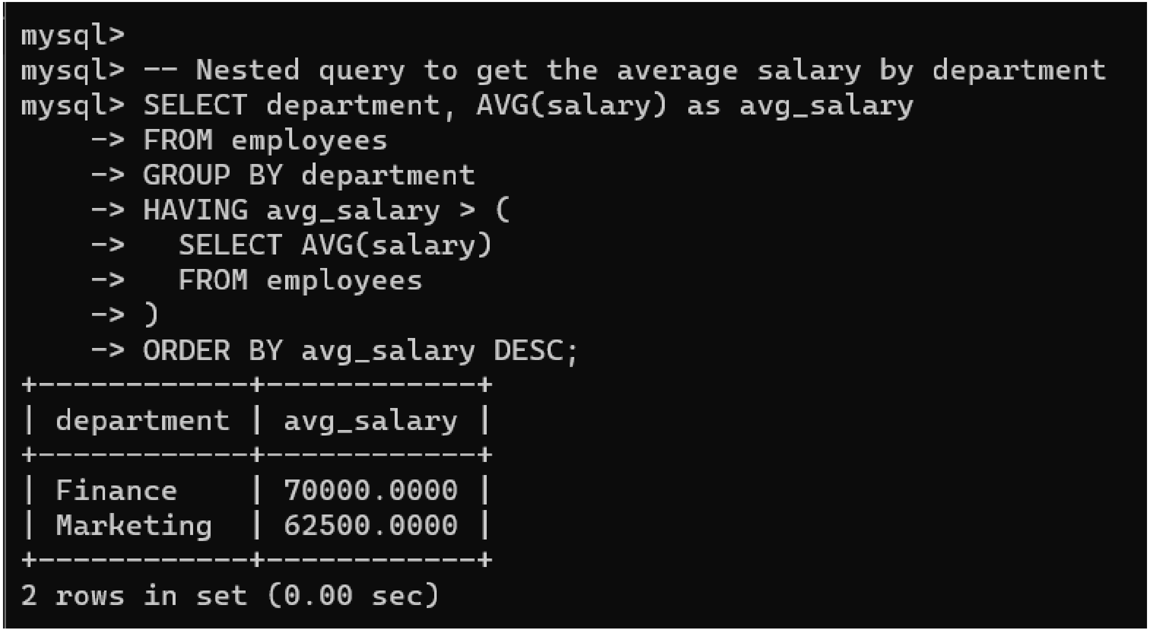
## ER Diagrams of Hospital Management System



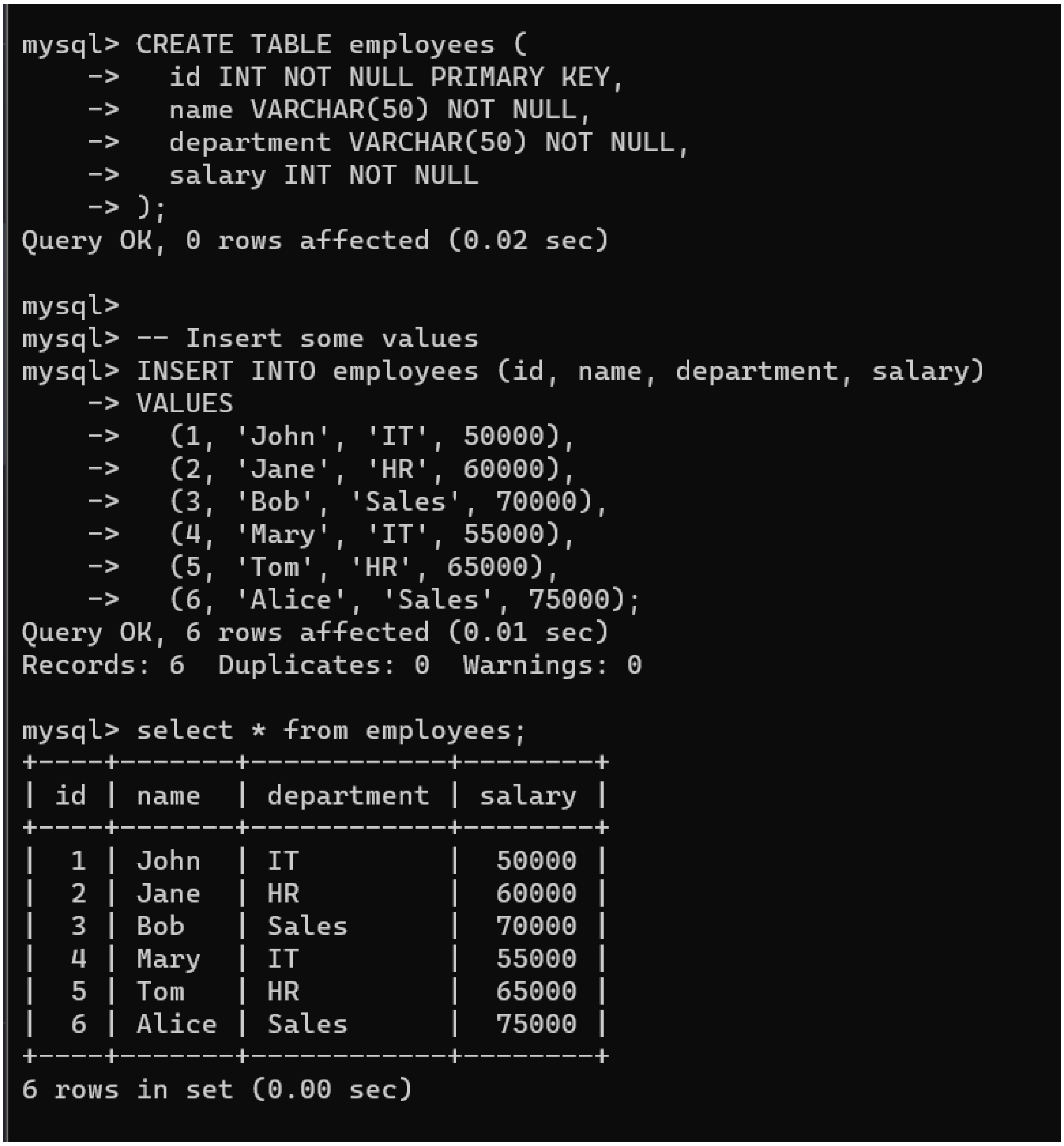

address
driver-id
name
person
owns
car
model
license
year
location
report-number
date
driver
participated
accident
damage-amount



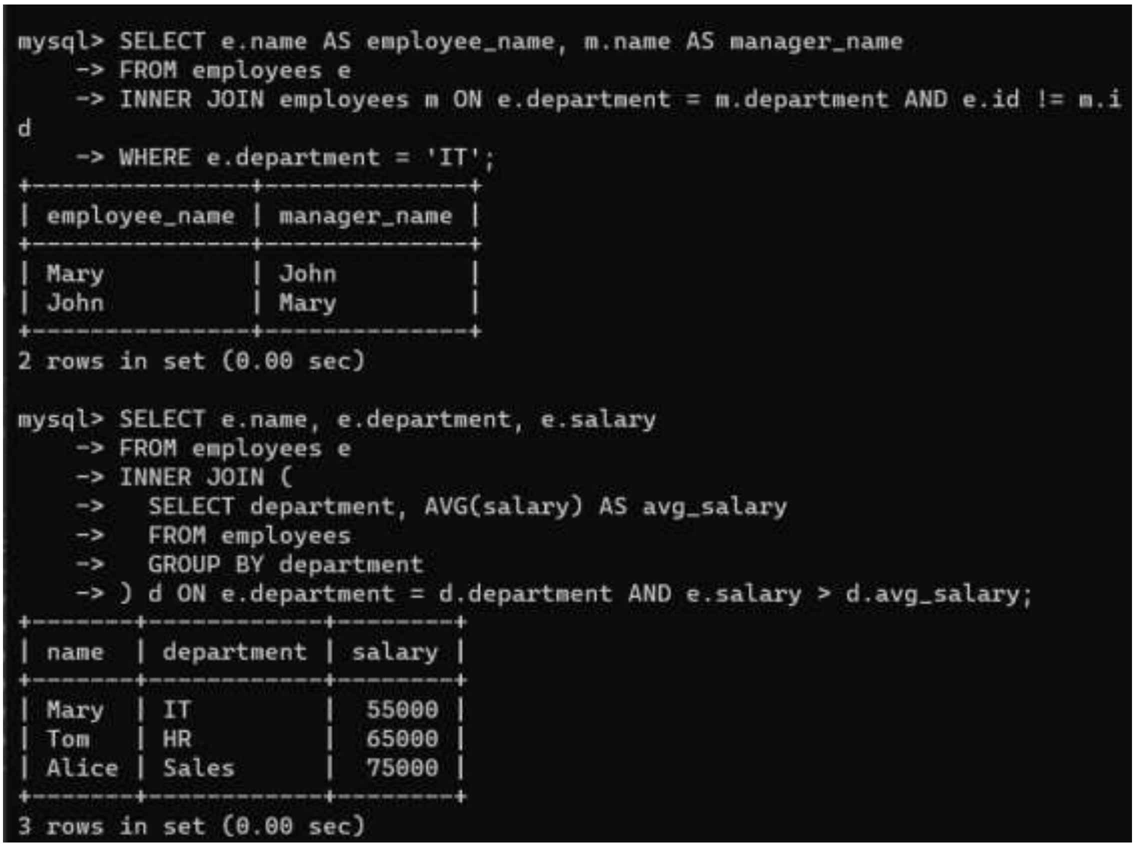
```
mysql> use db;
Database changed
mysql> -- Create a table
mysql> CREATE TABLE employees (
    ->   id INT AUTO_INCREMENT PRIMARY KEY,
    ->   name VARCHAR(255),
    ->   department VARCHAR(255),
    ->   salary INT
    -> );
Query OK, 0 rows affected (0.03 sec)

mysql>
mysql> -- Insert some values
mysql> INSERT INTO employees (name, department, salary)
    -> VALUES
    ->   ('John Smith', 'Sales', 50000),
    ->   ('Jane Doe', 'Marketing', 60000),
    ->   ('Bob Johnson', 'Sales', 55000),
    ->   ('Alice Lee', 'Finance', 70000),
    ->   ('Tom Williams', 'Marketing', 65000);
Query OK, 5 rows affected (0.01 sec)
Records: 5  Duplicates: 0  Warnings: 0
```



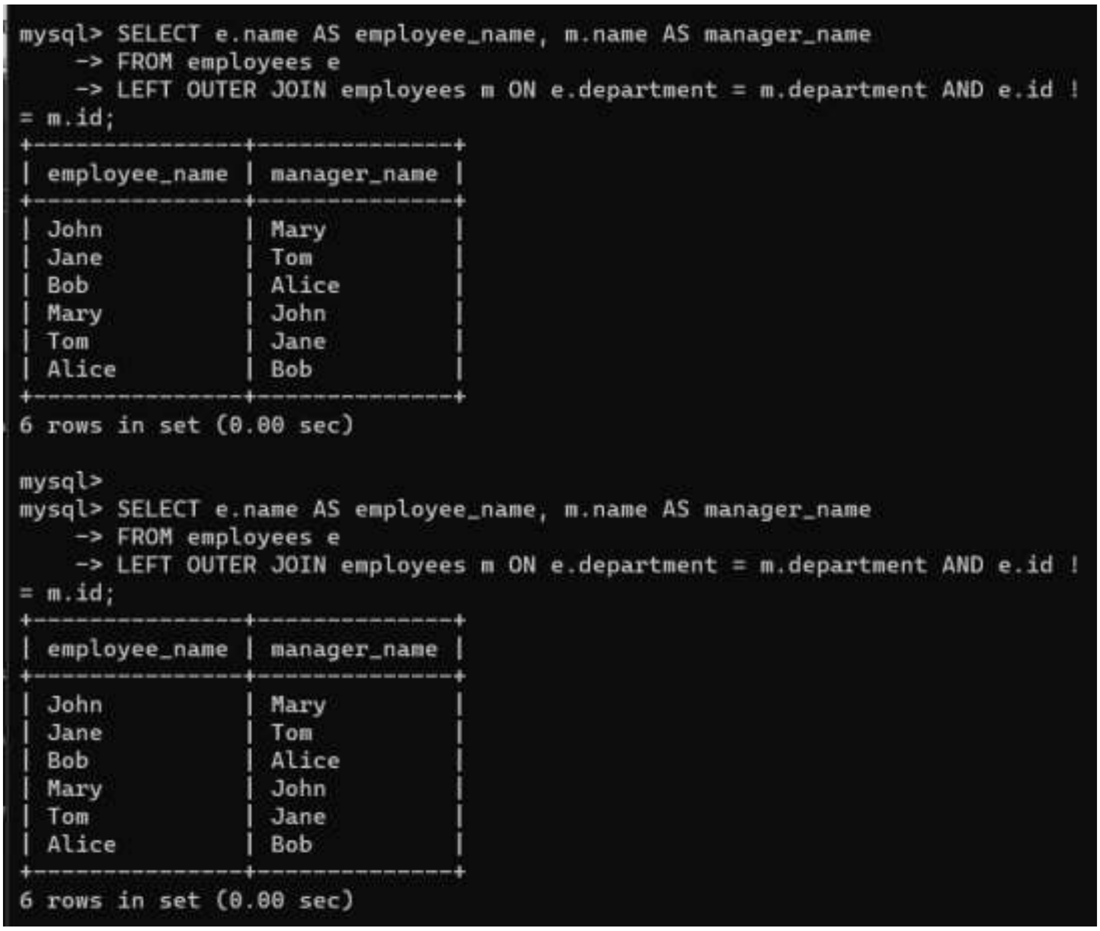
```
mysql>
mysql> -- Nested query to get the average salary by department
mysql> SELECT department, AVG(salary) as avg_salary
    -> FROM employees
    -> GROUP BY department
    -> HAVING avg_salary > (
    ->   SELECT AVG(salary)
    ->   FROM employees
    -> )
    -> ORDER BY avg_salary DESC;
+------------+------------+
| department | avg_salary |
+------------+------------+
| Finance    | 70000.0000 |
| Marketing  | 62500.0000 |
+------------+------------+
2 rows in set (0.00 sec)
```



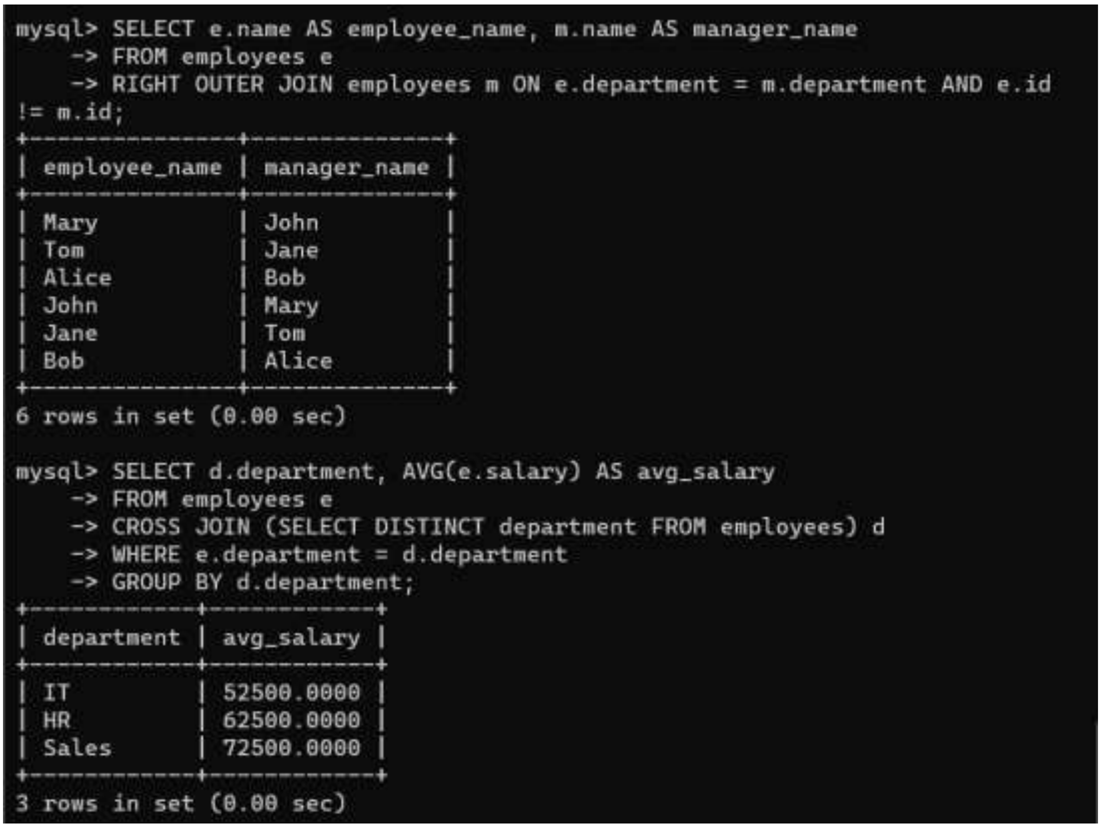
```
mysql> CREATE TABLE employees (
    ->   id INT NOT NULL PRIMARY KEY,
    ->   name VARCHAR(50) NOT NULL,
    ->   department VARCHAR(50) NOT NULL,
    ->   salary INT NOT NULL
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> -- Insert some values
mysql> INSERT INTO employees (id, name, department, salary)
    -> VALUES
    ->   (1, 'John', 'IT', 50000),
    ->   (2, 'Jane', 'HR', 60000),
    ->   (3, 'Bob', 'Sales', 70000),
    ->   (4, 'Mary', 'IT', 55000),
    ->   (5, 'Tom', 'HR', 65000),
    ->   (6, 'Alice', 'Sales', 75000);
Query OK, 6 rows affected (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> select * from employees;
+----+-------+------------+--------+
| id | name  | department | salary |
+----+-------+------------+--------+
|  1 | John  | IT         |  50000 |
|  2 | Jane  | HR         |  60000 |
|  3 | Bob   | Sales      |  70000 |
|  4 | Mary  | IT         |  55000 |
|  5 | Tom   | HR         |  65000 |
|  6 | Alice | Sales      |  75000 |
+----+-------+------------+--------+
6 rows in set (0.00 sec)
```



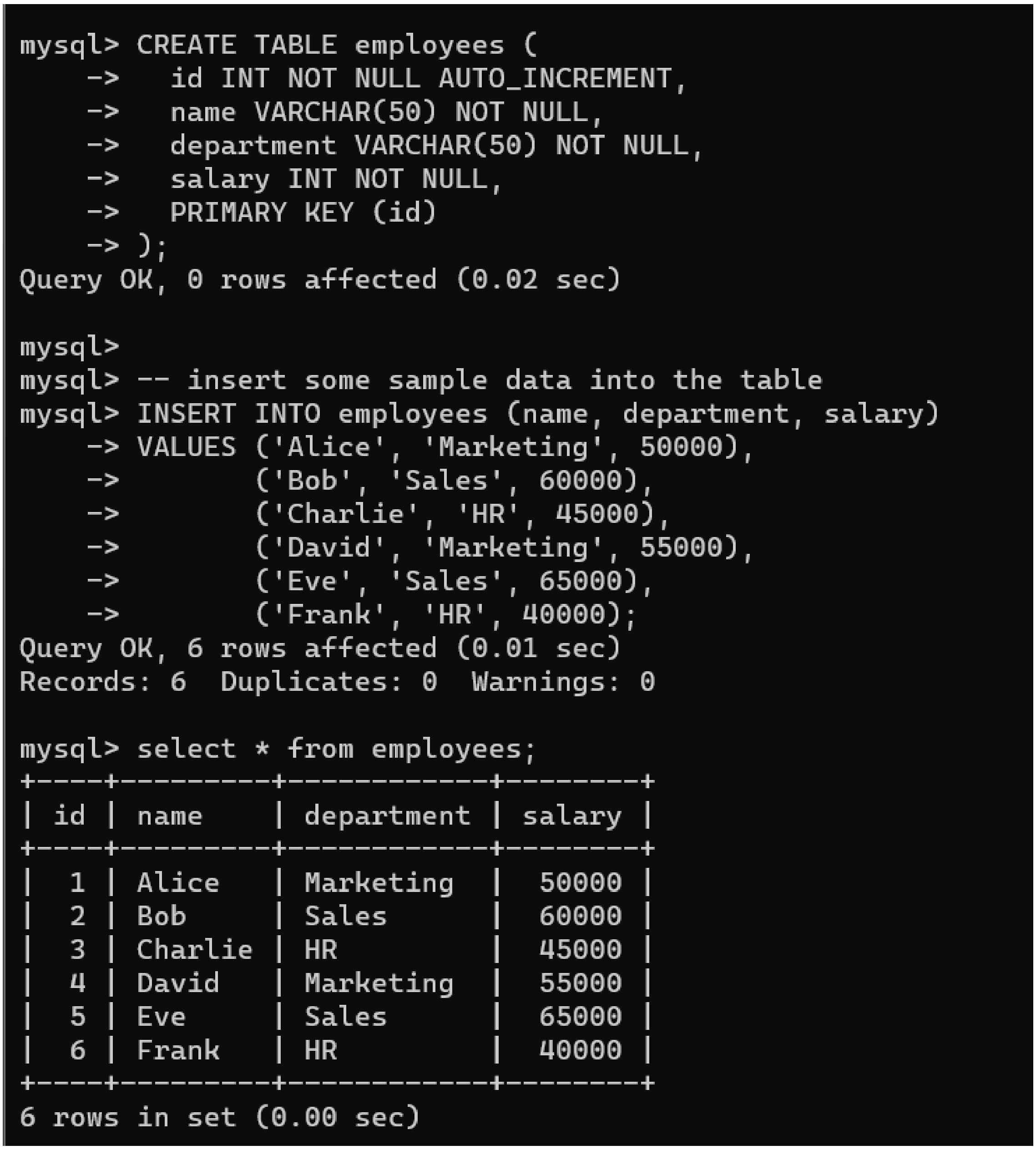
```
mysql> SELECT e.name AS employee_name, m.name AS manager_name
    -> FROM employees e
    -> INNER JOIN employees m ON e.department = m.department AND e.id != m.i
d
    -> WHERE e.department = 'IT';
+---------------+--------------+
| employee_name | manager_name |
+---------------+--------------+
| Mary          | John         |
| John          | Mary         |
+---------------+--------------+
2 rows in set (0.00 sec)

mysql> SELECT e.name, e.department, e.salary
    -> FROM employees e
    -> INNER JOIN (
    ->   SELECT department, AVG(salary) AS avg_salary
    ->   FROM employees
    ->   GROUP BY department
    -> ) d ON e.department = d.department AND e.salary > d.avg_salary;
+-------+------------+--------+
| name  | department | salary |
+-------+------------+--------+
| Mary  | IT         |  55000 |
| Tom   | HR         |  65000 |
| Alice | Sales      |  75000 |
+-------+------------+--------+
3 rows in set (0.00 sec)
```



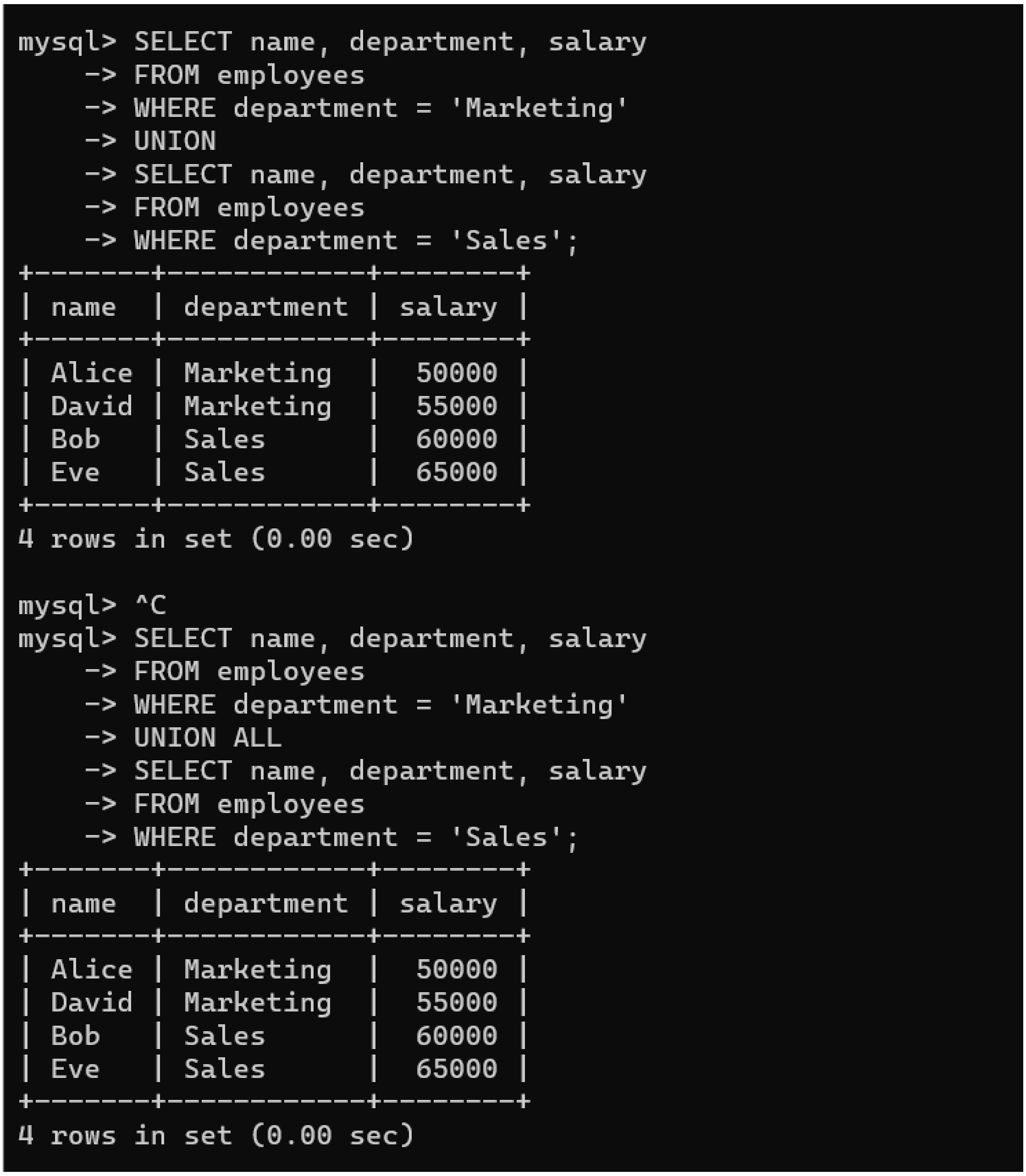
```
mysql> SELECT e.name AS employee_name, m.name AS manager_name
    -> FROM employees e
    -> LEFT OUTER JOIN employees m ON e.department = m.department AND e.id !
= m.id;
+---------------+--------------+
| employee_name | manager_name |
+---------------+--------------+
| John          | Mary         |
| Jane          | Tom          |
| Bob           | Alice        |
| Mary          | John         |
| Tom           | Jane         |
| Alice         | Bob          |
+---------------+--------------+
6 rows in set (0.00 sec)

mysql>
mysql> SELECT e.name AS employee_name, m.name AS manager_name
    -> FROM employees e
    -> LEFT OUTER JOIN employees m ON e.department = m.department AND e.id !
= m.id;
+---------------+--------------+
| employee_name | manager_name |
+---------------+--------------+
| John          | Mary         |
| Jane          | Tom          |
| Bob           | Alice        |
| Mary          | John         |
| Tom           | Jane         |
| Alice         | Bob          |
+---------------+--------------+
6 rows in set (0.00 sec)
```



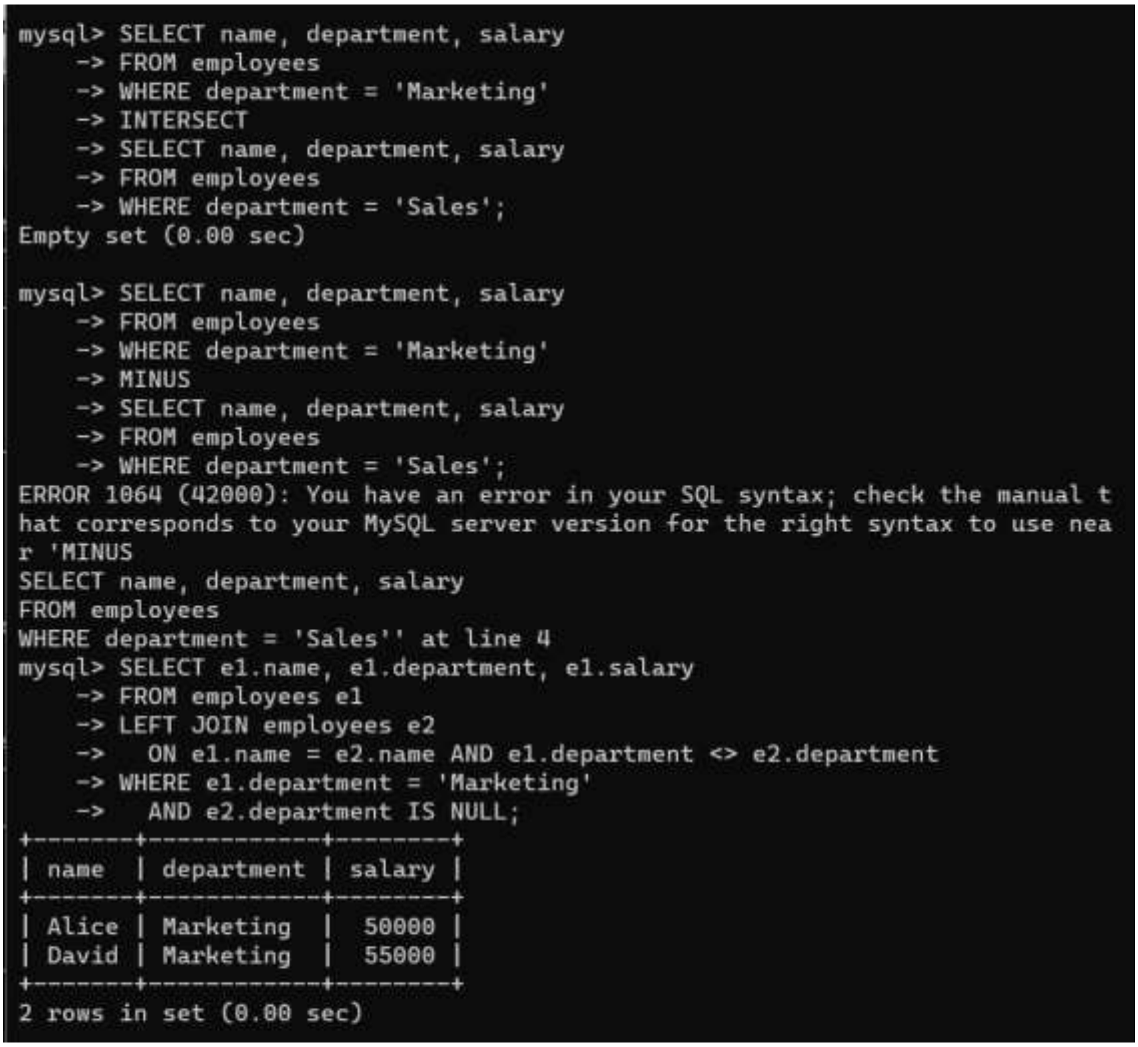
```
mysql> SELECT e.name AS employee_name, m.name AS manager_name
    -> FROM employees e
    -> RIGHT OUTER JOIN employees m ON e.department = m.department AND e.id
!= m.id;
+---------------+--------------+
| employee_name | manager_name |
+---------------+--------------+
| Mary          | John         |
| Tom           | Jane         |
| Alice         | Bob          |
| John          | Mary         |
| Jane          | Tom          |
| Bob           | Alice        |
+---------------+--------------+
6 rows in set (0.00 sec)

mysql> SELECT d.department, AVG(e.salary) AS avg_salary
    -> FROM employees e
    -> CROSS JOIN (SELECT DISTINCT department FROM employees) d
    -> WHERE e.department = d.department
    -> GROUP BY d.department;
+------------+------------+
| department | avg_salary |
+------------+------------+
| IT         | 52500.0000 |
| HR         | 62500.0000 |
| Sales      | 72500.0000 |
+------------+------------+
3 rows in set (0.00 sec)
```



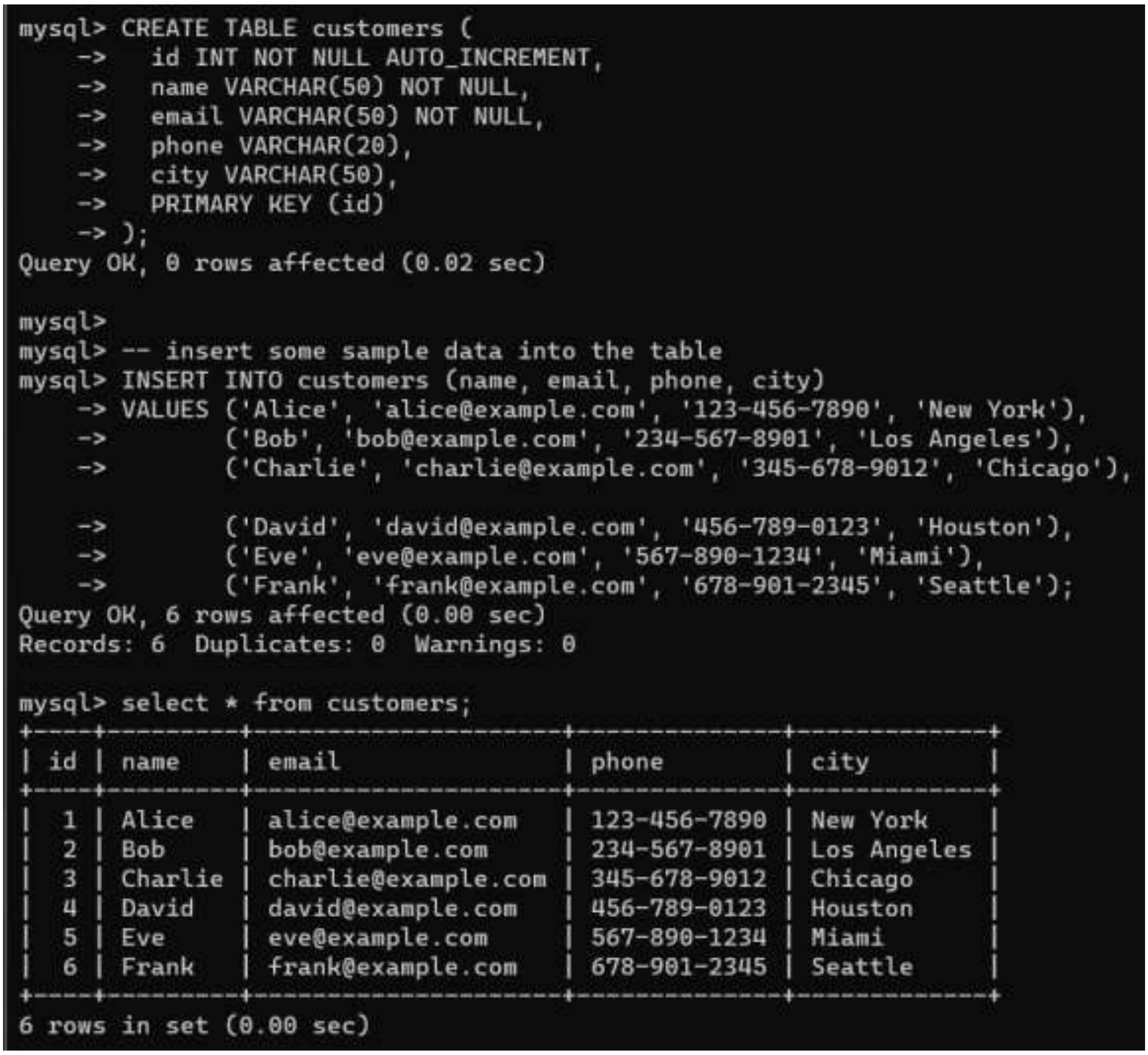
```
mysql> CREATE TABLE employees (
    ->   id INT NOT NULL AUTO_INCREMENT,
    ->   name VARCHAR(50) NOT NULL,
    ->   department VARCHAR(50) NOT NULL,
    ->   salary INT NOT NULL,
    ->   PRIMARY KEY (id)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> -- insert some sample data into the table
mysql> INSERT INTO employees (name, department, salary)
    -> VALUES ('Alice', 'Marketing', 50000),
    ->        ('Bob', 'Sales', 60000),
    ->        ('Charlie', 'HR', 45000),
    ->        ('David', 'Marketing', 55000),
    ->        ('Eve', 'Sales', 65000),
    ->        ('Frank', 'HR', 40000);
Query OK, 6 rows affected (0.01 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> select * from employees;
+----+---------+------------+--------+
| id | name    | department | salary |
+----+---------+------------+--------+
|  1 | Alice   | Marketing  |  50000 |
|  2 | Bob     | Sales      |  60000 |
|  3 | Charlie | HR         |  45000 |
|  4 | David   | Marketing  |  55000 |
|  5 | Eve     | Sales      |  65000 |
|  6 | Frank   | HR         |  40000 |
+----+---------+------------+--------+
6 rows in set (0.00 sec)
```



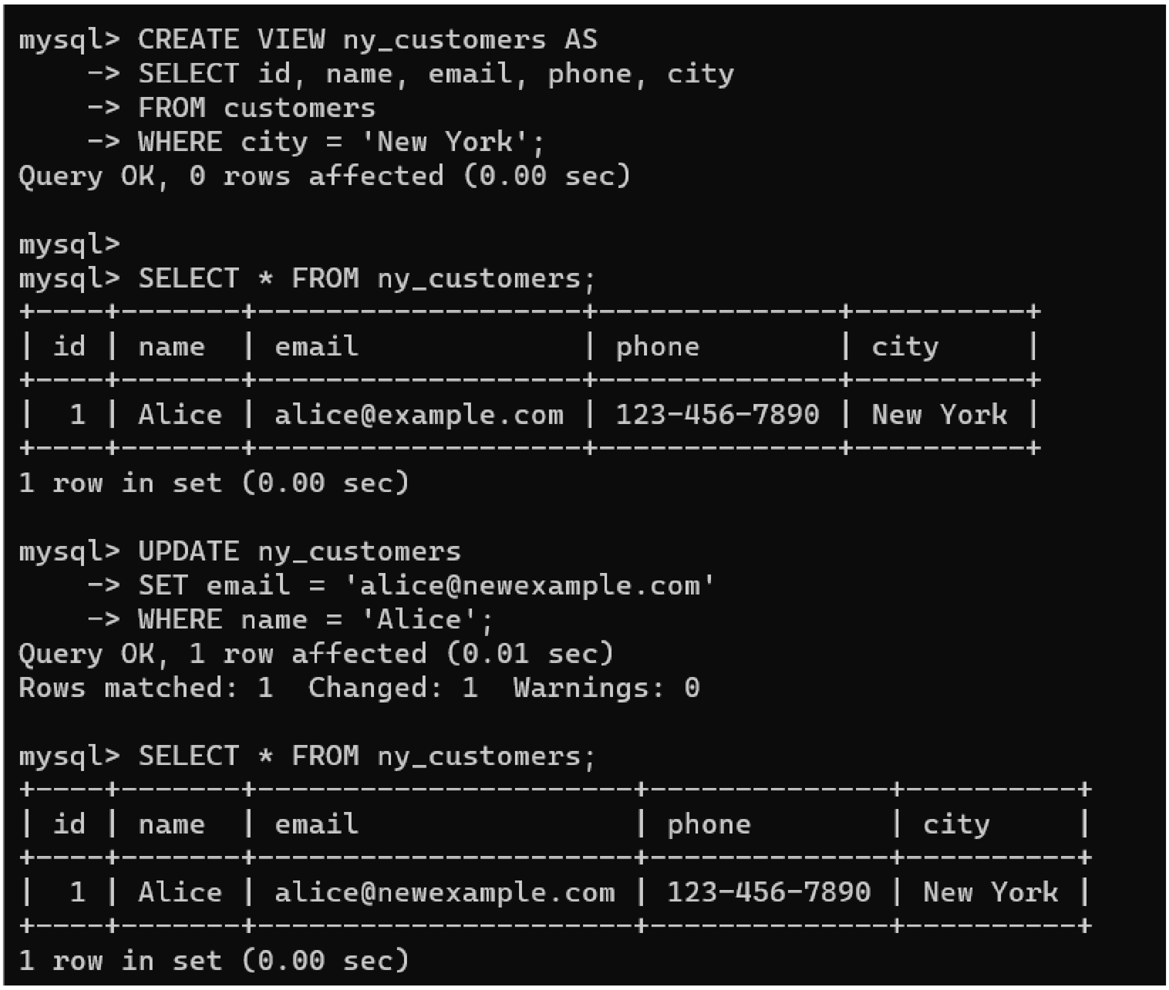
```
mysql> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Marketing'
    -> UNION
    -> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Sales';
+-------+------------+--------+
| name  | department | salary |
+-------+------------+--------+
| Alice | Marketing  |  50000 |
| David | Marketing  |  55000 |
| Bob   | Sales      |  60000 |
| Eve   | Sales      |  65000 |
+-------+------------+--------+
4 rows in set (0.00 sec)

mysql> ^C
mysql> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Marketing'
    -> UNION ALL
    -> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Sales';
+-------+------------+--------+
| name  | department | salary |
+-------+------------+--------+
| Alice | Marketing  |  50000 |
| David | Marketing  |  55000 |
| Bob   | Sales      |  60000 |
| Eve   | Sales      |  65000 |
+-------+------------+--------+
4 rows in set (0.00 sec)
```



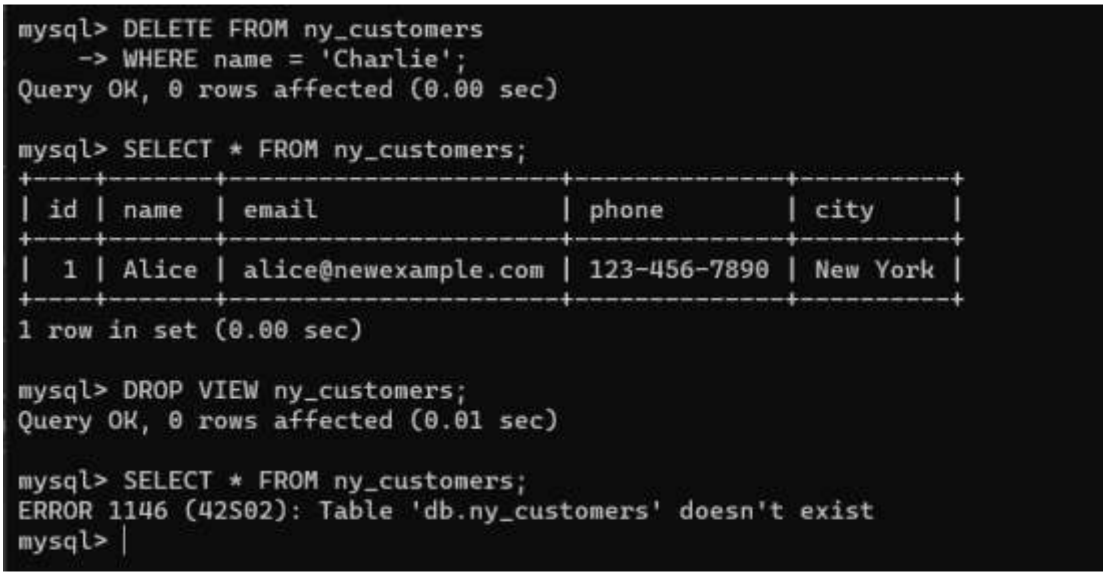
```
mysql> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Marketing'
    -> INTERSECT
    -> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Sales';
Empty set (0.00 sec)

mysql> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Marketing'
    -> MINUS
    -> SELECT name, department, salary
    -> FROM employees
    -> WHERE department = 'Sales';
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual t
hat corresponds to your MySQL server version for the right syntax to use nea
r 'MINUS
SELECT name, department, salary
FROM employees
WHERE department = 'Sales'' at line 4
mysql> SELECT e1.name, e1.department, e1.salary
    -> FROM employees e1
    -> LEFT JOIN employees e2
    ->   ON e1.name = e2.name AND e1.department <> e2.department
    -> WHERE e1.department = 'Marketing'
    ->   AND e2.department IS NULL;
+-------+------------+--------+
| name  | department | salary |
+-------+------------+--------+
| Alice | Marketing  |  50000 |
| David | Marketing  |  55000 |
+-------+------------+--------+
2 rows in set (0.00 sec)
```



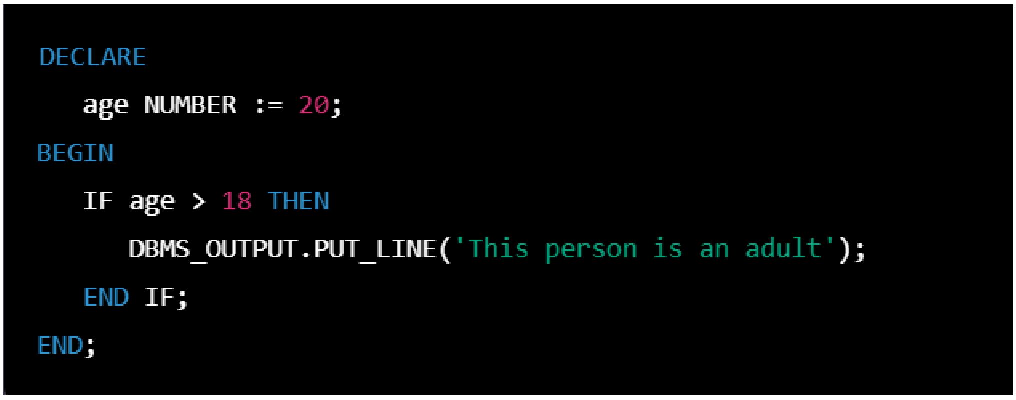
```
mysql> CREATE TABLE customers (
    ->   id INT NOT NULL AUTO_INCREMENT,
    ->   name VARCHAR(50) NOT NULL,
    ->   email VARCHAR(50) NOT NULL,
    ->   phone VARCHAR(20),
    ->   city VARCHAR(50),
    ->   PRIMARY KEY (id)
    -> );
Query OK, 0 rows affected (0.02 sec)

mysql>
mysql> -- insert some sample data into the table
mysql> INSERT INTO customers (name, email, phone, city)
    -> VALUES ('Alice', 'alice@example.com', '123-456-7890', 'New York'),
    ->        ('Bob', 'bob@example.com', '234-567-8901', 'Los Angeles'),
    ->        ('Charlie', 'charlie@example.com', '345-678-9012', 'Chicago'),

    ->        ('David', 'david@example.com', '456-789-0123', 'Houston'),
    ->        ('Eve', 'eve@example.com', '567-890-1234', 'Miami'),
    ->        ('Frank', 'frank@example.com', '678-901-2345', 'Seattle');
Query OK, 6 rows affected (0.00 sec)
Records: 6  Duplicates: 0  Warnings: 0

mysql> select * from customers;
+----+---------+---------------------+--------------+-------------+
| id | name    | email               | phone        | city        |
+----+---------+---------------------+--------------+-------------+
|  1 | Alice   | alice@example.com   | 123-456-7890 | New York    |
|  2 | Bob     | bob@example.com     | 234-567-8901 | Los Angeles |
|  3 | Charlie | charlie@example.com | 345-678-9012 | Chicago     |
|  4 | David   | david@example.com   | 456-789-0123 | Houston     |
|  5 | Eve     | eve@example.com     | 567-890-1234 | Miami       |
|  6 | Frank   | frank@example.com   | 678-901-2345 | Seattle     |
+----+---------+---------------------+--------------+-------------+
6 rows in set (0.00 sec)
```



```
mysql> CREATE VIEW ny_customers AS
    -> SELECT id, name, email, phone, city
    -> FROM customers
    -> WHERE city = 'New York';
Query OK, 0 rows affected (0.00 sec)

mysql>
mysql> SELECT * FROM ny_customers;
+----+-------+-------------------+--------------+----------+
| id | name  | email             | phone        | city     |
+----+-------+-------------------+--------------+----------+
|  1 | Alice | alice@example.com | 123-456-7890 | New York |
+----+-------+-------------------+--------------+----------+
1 row in set (0.00 sec)

mysql> UPDATE ny_customers
    -> SET email = 'alice@newexample.com'
    -> WHERE name = 'Alice';
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> SELECT * FROM ny_customers;
+----+-------+----------------------+--------------+----------+
| id | name  | email                | phone        | city     |
+----+-------+----------------------+--------------+----------+
|  1 | Alice | alice@newexample.com | 123-456-7890 | New York |
+----+-------+----------------------+--------------+----------+
1 row in set (0.00 sec)
```

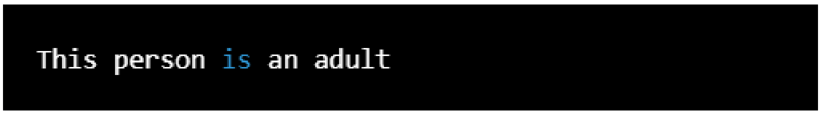


```
mysql> DELETE FROM ny_customers
    -> WHERE name = 'Charlie';
Query OK, 0 rows affected (0.00 sec)

mysql> SELECT * FROM ny_customers;
+----+-------+----------------------+--------------+----------+
| id | name  | email                | phone        | city     |
+----+-------+----------------------+--------------+----------+
|  1 | Alice | alice@newexample.com | 123-456-7890 | New York |
+----+-------+----------------------+--------------+----------+
1 row in set (0.00 sec)

mysql> DROP VIEW ny_customers;
Query OK, 0 rows affected (0.01 sec)

mysql> SELECT * FROM ny_customers;
ERROR 1146 (42S02): Table 'db.ny_customers' doesn't exist
mysql> 
```

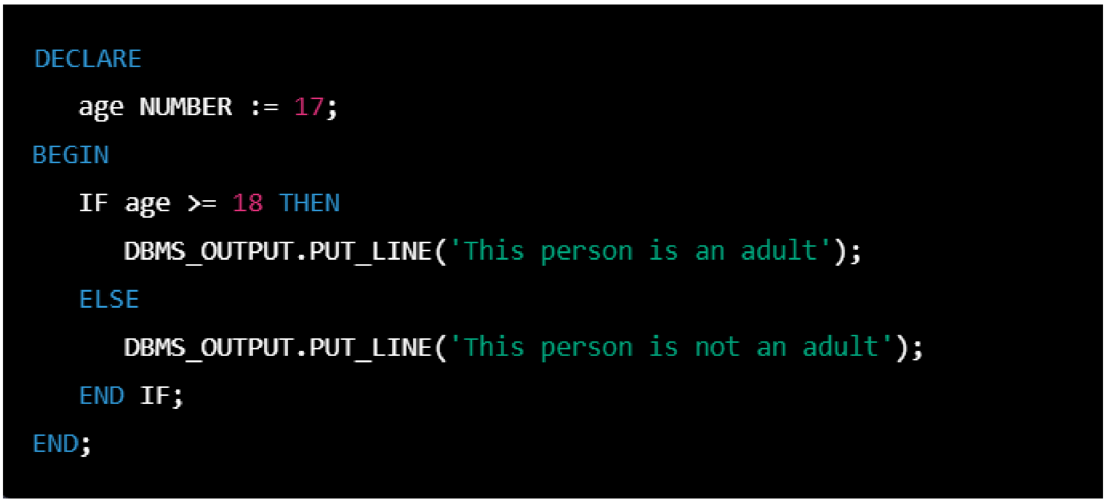


```
DECLARE
   age NUMBER := 20;
BEGIN
   IF age > 18 THEN
      DBMS_OUTPUT.PUT_LINE('This person is an adult');
   END IF;
END;
```

OUTPUT:

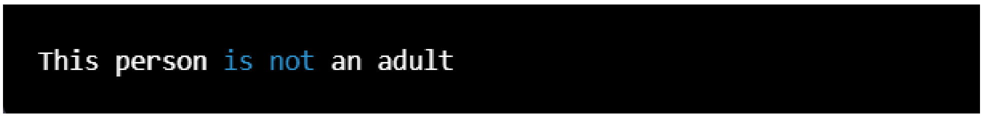


```
This person is an adult
```

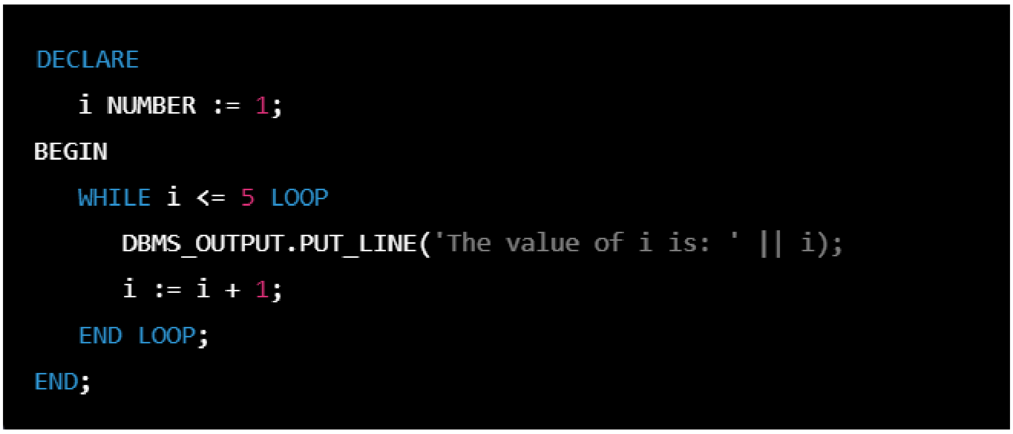


```
DECLARE
   age NUMBER := 17;
BEGIN
   IF age >= 18 THEN
      DBMS_OUTPUT.PUT_LINE('This person is an adult');
   ELSE
      DBMS_OUTPUT.PUT_LINE('This person is not an adult');
   END IF;
END;
```

OUTPUT:

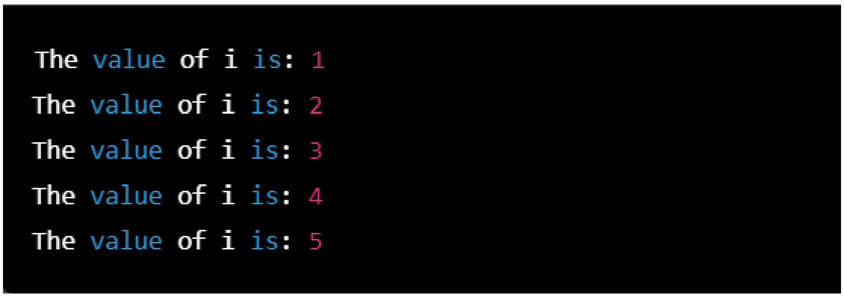


```
This person is not an adult
```

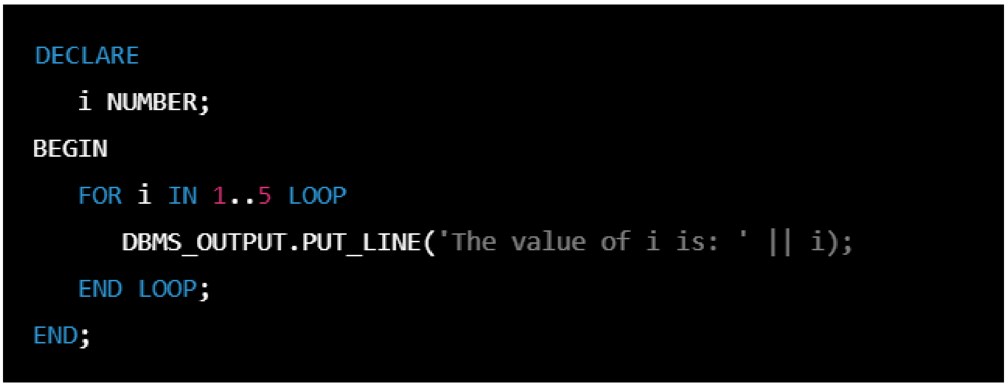


```
DECLARE
   i NUMBER := 1;
BEGIN
   WHILE i <= 5 LOOP
      DBMS_OUTPUT.PUT_LINE('The value of i is: ' || i);
      i := i + 1;
   END LOOP;
END;
```

OUTPUT:

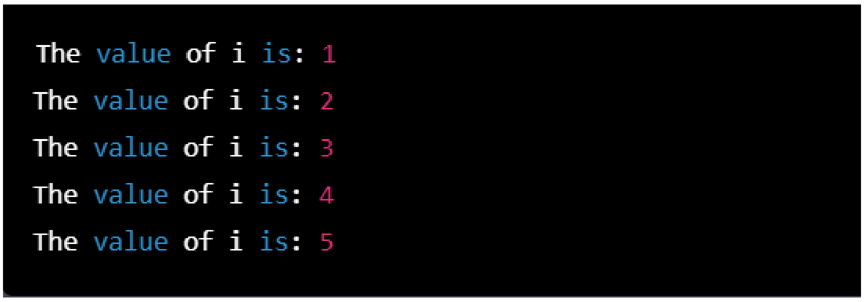


```
The value of i is: 1
The value of i is: 2
The value of i is: 3
The value of i is: 4
The value of i is: 5
```

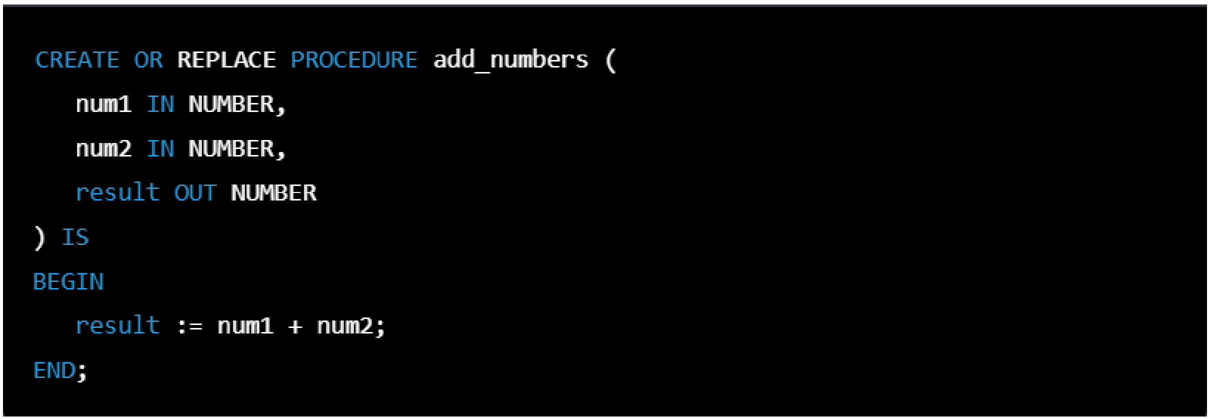


```
DECLARE
   i NUMBER;
BEGIN
   FOR i IN 1..5 LOOP
      DBMS_OUTPUT.PUT_LINE('The value of i is: ' || i);
   END LOOP;
END;
```

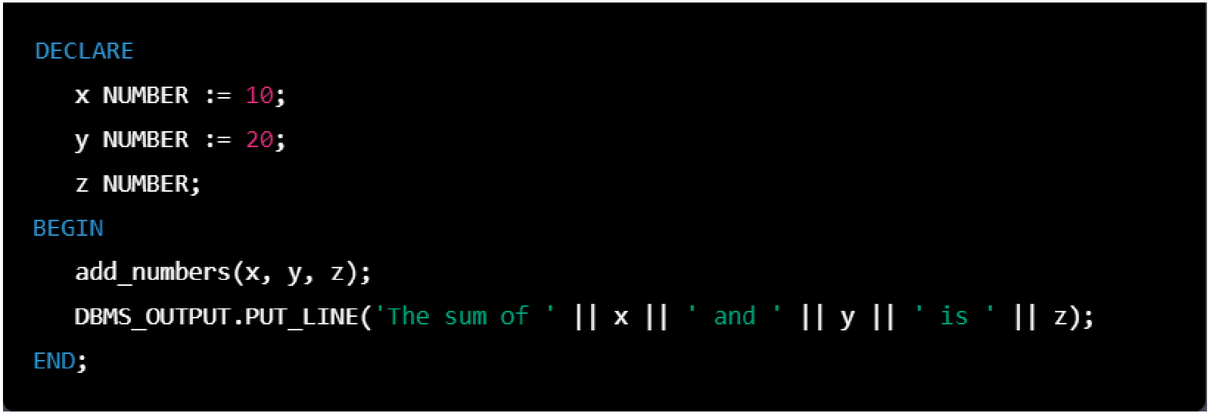
OUTPUT:



```
The value of i is: 1
The value of i is: 2
The value of i is: 3
The value of i is: 4
The value of i is: 5
```

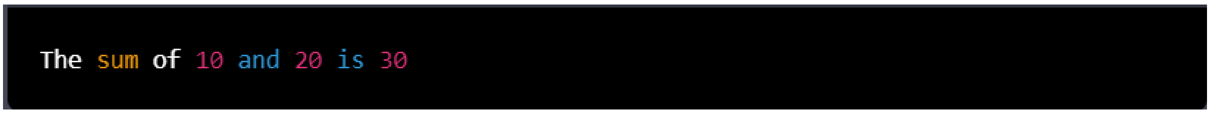


```
CREATE OR REPLACE PROCEDURE add_numbers (
   num1 IN NUMBER,
   num2 IN NUMBER,
   result OUT NUMBER
) IS
BEGIN
   result := num1 + num2;
END;
```

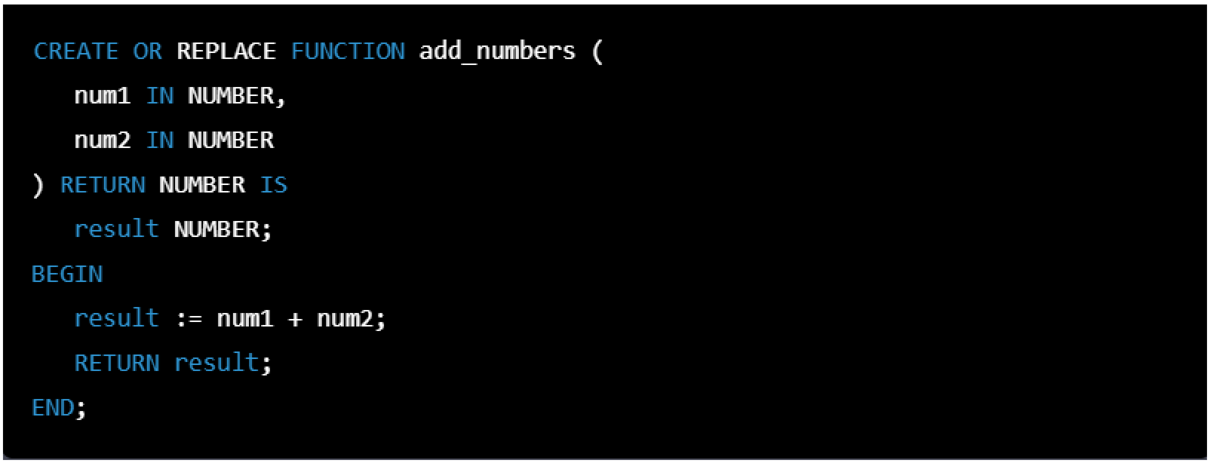


```
DECLARE
   x NUMBER := 10;
   y NUMBER := 20;
   z NUMBER;
BEGIN
   add_numbers(x, y, z);
   DBMS_OUTPUT.PUT_LINE('The sum of ' || x || ' and ' || y || ' is ' || z);
END;
```

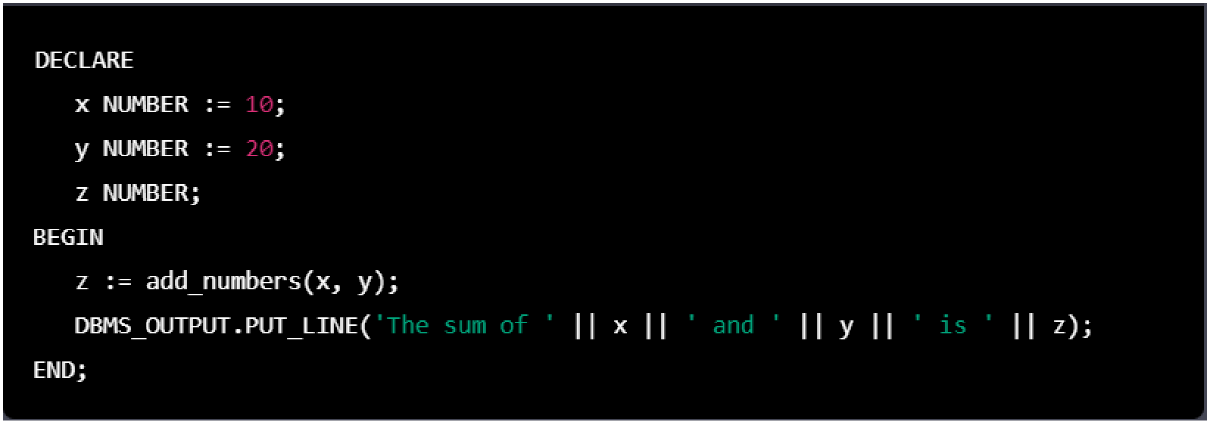
OUTPUT:



```
The sum of 10 and 20 is 30
```

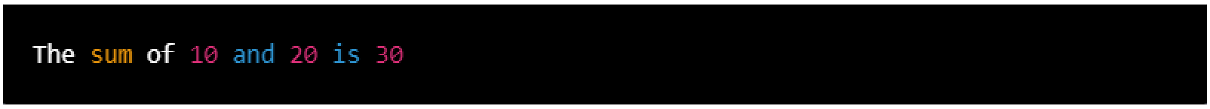


```
CREATE OR REPLACE FUNCTION add_numbers (
   num1 IN NUMBER,
   num2 IN NUMBER
) RETURN NUMBER IS
   result NUMBER;
BEGIN
   result := num1 + num2;
   RETURN result;
END;
```

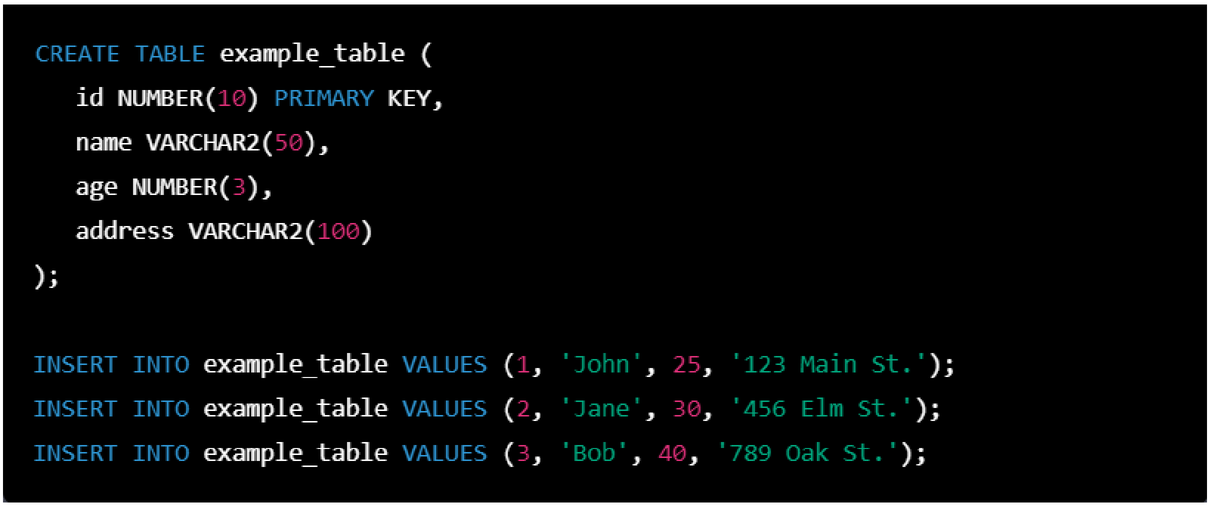


```
DECLARE
   x NUMBER := 10;
   y NUMBER := 20;
   z NUMBER;
BEGIN
   z := add_numbers(x, y);
   DBMS_OUTPUT.PUT_LINE('The sum of ' || x || ' and ' || y || ' is ' || z);
END;
```

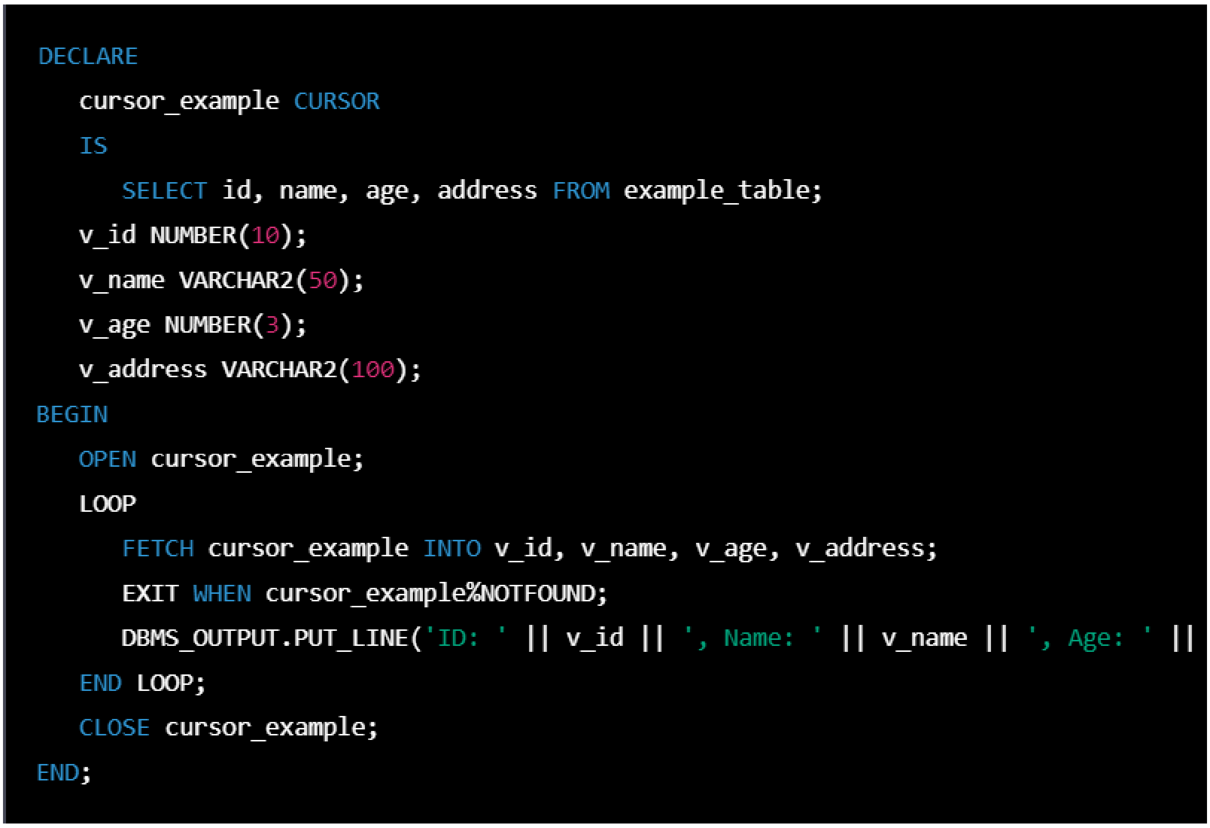
OUTPUT:



```
The sum of 10 and 20 is 30
```

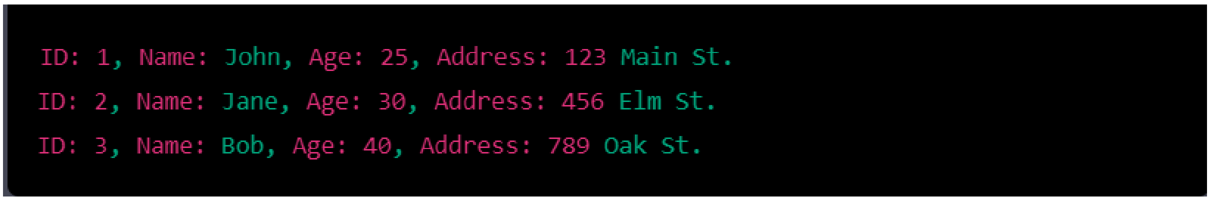


```
CREATE TABLE example_table (
   id NUMBER(10) PRIMARY KEY,
   name VARCHAR2(50),
   age NUMBER(3),
   address VARCHAR2(100)
);

INSERT INTO example_table VALUES (1, 'John', 25, '123 Main St.');
INSERT INTO example_table VALUES (2, 'Jane', 30, '456 Elm St.');
INSERT INTO example_table VALUES (3, 'Bob', 40, '789 Oak St.');
```

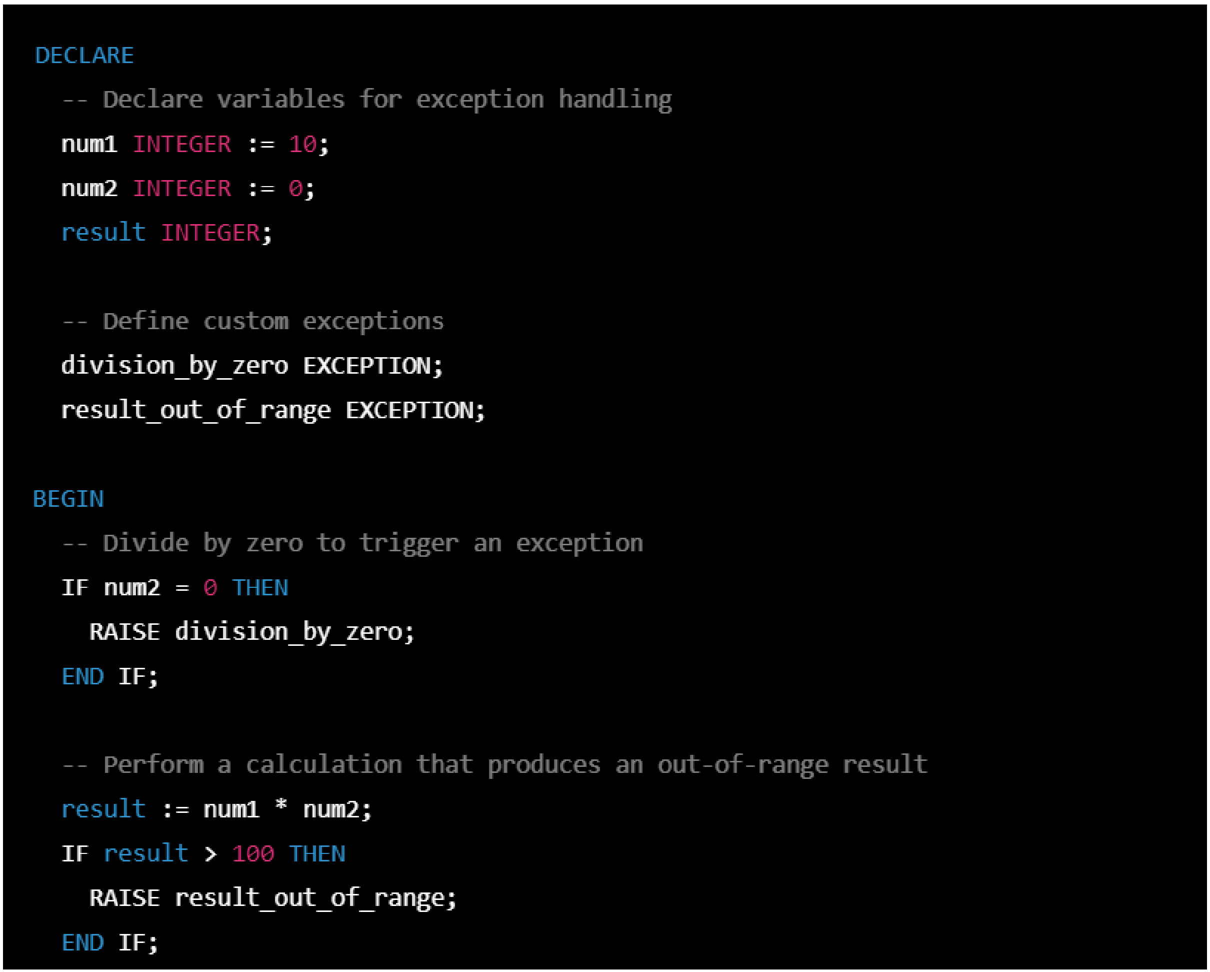


```
DECLARE
   cursor_example CURSOR
   IS
      SELECT id, name, age, address FROM example_table;
   v_id NUMBER(10);
   v_name VARCHAR2(50);
   v_age NUMBER(3);
   v_address VARCHAR2(100);
BEGIN
   OPEN cursor_example;
   LOOP
      FETCH cursor_example INTO v_id, v_name, v_age, v_address;
      EXIT WHEN cursor_example%NOTFOUND;
      DBMS_OUTPUT.PUT_LINE('ID: ' || v_id || ', Name: ' || v_name || ', Age: ' ||
   END LOOP;
   CLOSE cursor_example;
END;
```

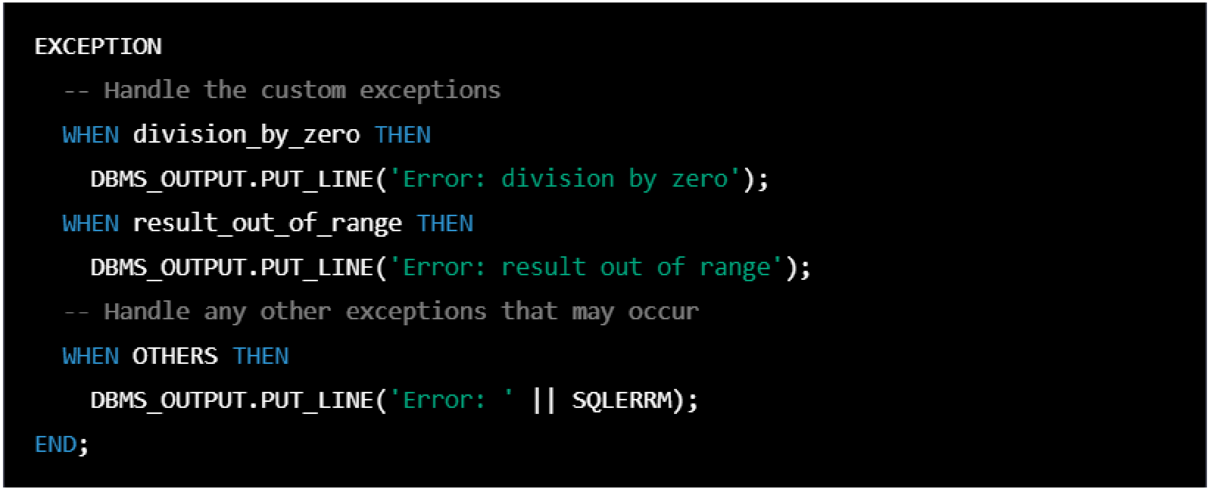
OUTPUT:



```
ID: 1, Name: John, Age: 25, Address: 123 Main St.
ID: 2, Name: Jane, Age: 30, Address: 456 Elm St.
ID: 3, Name: Bob, Age: 40, Address: 789 Oak St.
```

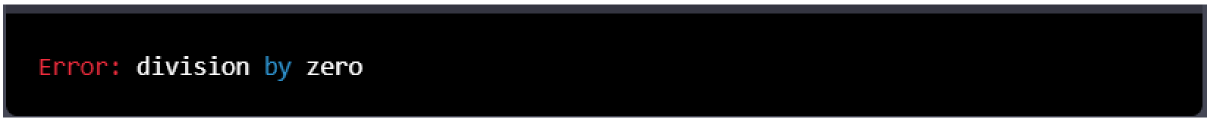


```
DECLARE
  -- Declare variables for exception handling
  num1 INTEGER := 10;
  num2 INTEGER := 0;
  result INTEGER;

  -- Define custom exceptions
  division_by_zero EXCEPTION;
  result_out_of_range EXCEPTION;

BEGIN
  -- Divide by zero to trigger an exception
  IF num2 = 0 THEN
    RAISE division_by_zero;
  END IF;

  -- Perform a calculation that produces an out-of-range result
  result := num1 * num2;
  IF result > 100 THEN
    RAISE result_out_of_range;
  END IF;
```

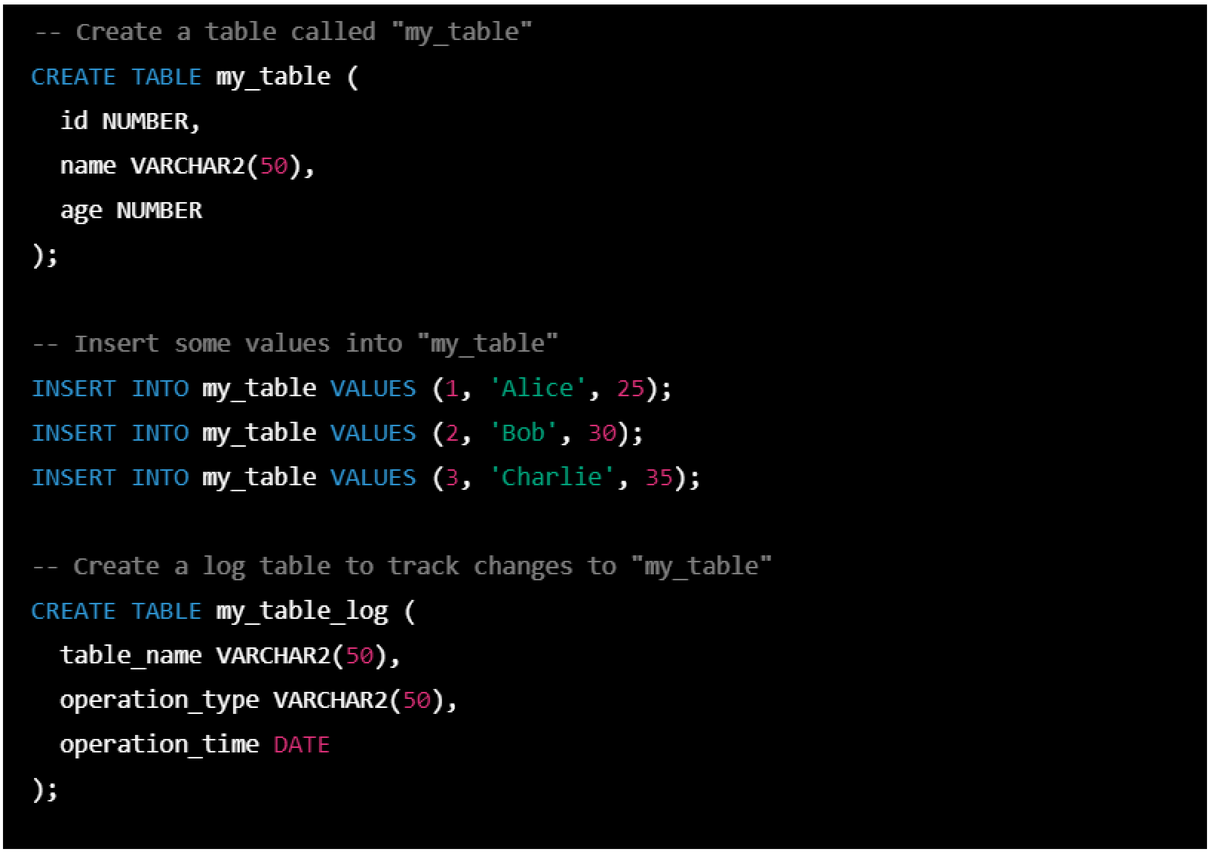


```
EXCEPTION
  -- Handle the custom exceptions
  WHEN division_by_zero THEN
    DBMS_OUTPUT.PUT_LINE('Error: division by zero');
  WHEN result_out_of_range THEN
    DBMS_OUTPUT.PUT_LINE('Error: result out of range');
  -- Handle any other exceptions that may occur
  WHEN OTHERS THEN
    DBMS_OUTPUT.PUT_LINE('Error: ' || SQLERRM);
END;
```

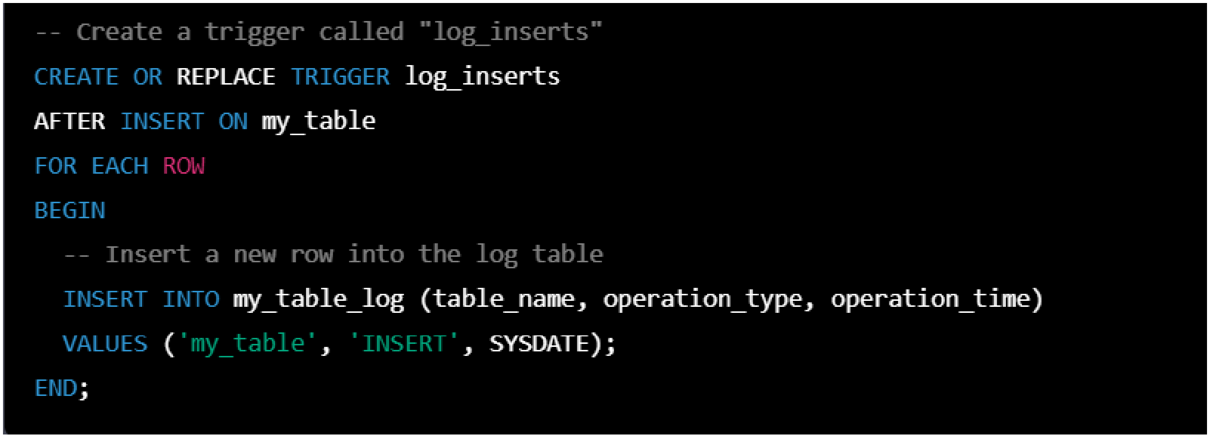
OUTPUT:



```
Error: division by zero
```



```sql
-- Create a table called "my_table"
CREATE TABLE my_table (
  id NUMBER,
  name VARCHAR2(50),
  age NUMBER
);

-- Insert some values into "my_table"
INSERT INTO my_table VALUES (1, 'Alice', 25);
INSERT INTO my_table VALUES (2, 'Bob', 30);
INSERT INTO my_table VALUES (3, 'Charlie', 35);

-- Create a log table to track changes to "my_table"
CREATE TABLE my_table_log (
  table_name VARCHAR2(50),
  operation_type VARCHAR2(50),
  operation_time DATE
);
```



```sql
-- Create a trigger called "log_inserts"
CREATE OR REPLACE TRIGGER log_inserts
AFTER INSERT ON my_table
FOR EACH ROW
BEGIN
  -- Insert a new row into the log table
  INSERT INTO my_table_log (table_name, operation_type, operation_time)
  VALUES ('my_table', 'INSERT', SYSDATE);
END;
```