Indian Institute of Information Technology Surat

Lab Report on
Advanced Database Management (CS 604) Practical

Submitted by

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Lab No: 1

Aim: Perform basic SQL Query on three tables (Employee, Title, Bonus)

Description: Create a Database for an Organization and create the following tables in the Organization Database:

Employee(EMP_ID(PK), FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT)
Bonus (EMP_REF_ID(FK EMP_ID), BONUS_AMOUNT, BONUS_DATE)
Title (EMP_REF_ID(FKEMP_ID), EMP_TITLE, AFFECTED_FROM)

Insert a minimum of 50 records in each table. Retrieve the following information from the Organization database:

1. SQL query to print all Employee details from the Employee table order by FIRST_NAME Ascending and DEPARTMENT Descending.

2. SQL query to fetch the count of employees working in the department 'Admin'.

3. SQL query to fetch Employee names with salaries >= 50000 and <= 100000.

4. SQL query to print details of the Workers who are also Managers.

5. SQL query to fetch duplicate records having matching data in some fields of a table.

6. SQL query to show only even rows from a table.

7. SQL query to show records from one table that another table does not have. Find employees in employee table that do not exist in bonus table (i.e. who did not get bonus)

8. SQL query to show the to pn(say10) records of a table.

9. Find people who have the same salary

10. SQL query to fetch the first 50% records from a table.

11. Find the highest 2 salaries without LIMIT or TOP.

12. Create a trigger to ensure that no employee of age less than 18 can be inserted in the database.

13. Create a trigger which will work before deletion in the employee table and create a duplicate copy of the record in another table employee_backup.

14. Create a trigger to count the number of new tuples inserted using each insert statement.

Source Code:

Database Creation:

```
CREATE DATABASE IF NOT EXISTS Organization;
USE Organization;
```

Create the Employee table

```
CREATE TABLE IF NOT EXISTS Employee (
    EMP_ID INT PRIMARY KEY,
    FIRST_NAME VARCHAR(50),
    LAST_NAME VARCHAR(50),
    SALARY DECIMAL(10, 2),
    JOINING_DATE DATE,
    DEPARTMENT VARCHAR(50)
);
```

Create the Bonus table

```
CREATE TABLE IF NOT EXISTS Bonus (
    EMP_REF_ID INT,
    BONUS_AMOUNT DECIMAL(10, 2),
    BONUS_DATE DATE,
    FOREIGN KEY (EMP_REF_ID) REFERENCES Employee(EMP_ID)
);
```

Create the Title table

```
CREATE TABLE IF NOT EXISTS Title (
    EMP_REF_ID INT,
    EMP_TITLE VARCHAR(50),
    AFFECTED_FROM DATE,
    FOREIGN KEY (EMP_REF_ID) REFERENCES Employee(EMP_ID)
);
```

Task 1:

```
SELECT * FROM Employee ORDER BY FIRST_NAME ASC, DEPARTMENT DESC;
```

Task 2:

```
SELECT COUNT(*) FROM Employee WHERE DEPARTMENT = 'Admin';
```

Task 3:

```
SELECT FIRST_NAME, LAST_NAME FROM Employee WHERE SALARY BETWEEN 50000 AND
100000;
```

Task 4:

```
SELECT Employee.* FROM Employee INNER JOIN Title ON Employee.EMP_ID = Title.EMP_REF_ID
WHERE Title.EMP_TITLE = 'Manager';
```

Task 5:

```
SELECT SALARY, DEPARTMENT, COUNT(*) FROM Employee GROUP BY SALARY, DEPARTMENT
HAVING COUNT(*) > 1;
```

Task 6:

```
WITH RankedRows AS (SELECT  *,  ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS
RowNum FROM Employee) SELECT * FROM RankedRows WHERE RowNum % 2 = 0;
```

Task 7:

```
SELECT Employee.* FROM Employee LEFT JOIN Bonus ON Employee.EMP_ID = Bonus.EMP_REF_ID
WHERE Bonus.EMP_REF_ID IS NULL;
```

Task 8:

```
SELECT * FROM Employee LIMIT 10;
```

Task 9:

```
SELECT SALARY, COUNT(*) FROM Employee GROUP BY SALARY HAVING COUNT(*) > 1;
```

Task 10:

```
WITH RankedRows AS (SELECT  *,  ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS
RowNum FROM Employee) SELECT * FROM RankedRows WHERE RowNum <= (SELECT COUNT(*)/2
FROM Employee);
```

Task 11:

```
WITH RankedRows AS (SELECT  *,  ROW_NUMBER() OVER (ORDER BY Salary DESC) AS RowNum
FROM Employee) SELECT * FROM RankedRows WHERE RowNum <= 2;
```

Task 12:

```
DELIMITER //
CREATE TRIGGER age_insert_employee
BEFORE INSERT ON Employee
FOR EACH ROW
BEGIN
   DECLARE emp_age INT;
   SET emp_age = YEAR(CURDATE()) - YEAR(NEW.JOINING_DATE) - (DATE_FORMAT(CURDATE(),
'%m%d') < DATE_FORMAT(NEW.JOINING_DATE, '%m%d'));
   IF emp_age < 18 THEN
      SIGNAL SQLSTATE '45000'
      SET MESSAGE_TEXT = 'Cannot insert employee with age less than 18.';
   END IF;
END;
//
DELIMITER ;
```

Task 13:

```
CREATE TABLE IF NOT EXISTS Employee_backup (
   EMP_ID INT PRIMARY KEY,
   FIRST_NAME VARCHAR(50),
   LAST_NAME VARCHAR(50),
   SALARY DECIMAL(10, 2),
   JOINING_DATE DATE,
   DEPARTMENT VARCHAR(50)
);

DELIMITER //
CREATE TRIGGER before_delete_employee BEFORE DELETE ON Employee FOR EACH ROW
BEGIN
   INSERT INTO employee_backup (EMP_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE,
DEPARTMENT) VALUES (OLD.EMP_ID, OLD.FIRST_NAME, OLD.LAST_NAME, OLD.SALARY,
OLD.JOINING_DATE, OLD.DEPARTMENT);
END;
//
DELIMITER ;
```

Task 14:

```
CREATE TABLE insert_count (
   table_name VARCHAR(255) PRIMARY KEY,
   insert_count INT DEFAULT 0
);

DELIMITER //
CREATE TRIGGER after_insert_count_employee
AFTER INSERT ON Employee
FOR EACH ROW
BEGIN
   INSERT INTO insert_count (table_name, insert_count) VALUES ('Employee', 1) ON DUPLICATE KEY
UPDATE insert_count = insert_count + 1;
END;
//
DELIMITER ;
```

Output:

Task 1:

```
mysql> SELECT * FROM Employee ORDER BY FIRST_NAME ASC, DEPARTMENT DESC;
+------------+------------+-------------+-------------+--------------+------------------+
| EMP_ID     | FIRST_NAME | LAST_NAME   | SALARY      | JOINING_DATE | DEPARTMENT       |
+------------+------------+-------------+-------------+--------------+------------------+
|       9925 | Alanis     | Murphy      |      625.25 | 1982-02-14   | IT               |
|   29876816 | Anthony    | Ritchie     |    17591.97 | 1986-05-30   | Admin            |
| 2147483647 | Ari        | Schamberger |      984.90 | 2000-10-07   | Site Reliability |
|   65392242 | Arnoldo    | Beatty      | 18320386.20 | 1977-11-08   | Site Reliability |
|          6 | Assunta    | Paucek      |     5732.16 | 2016-05-10   | Admin            |
|        272 | Astrid     | Reilly      |   411176.20 | 2012-09-03   | Site Reliability |
|          9 | Blanca     | O'Conner    |        0.00 | 2015-09-28   | Finance          |
|         51 | Christiana | Ernser      |   208561.10 | 1996-01-06   | Admin            |
|          0 | Dalton     | Kilback     |      996.08 | 1997-09-10   | IT               |
|        120 | Delmer     | Tremblay    |    51420.77 | 2020-03-13   | IT               |
|         63 | Demond     | Mayert      |    12693.70 | 2016-01-23   | Sales            |
|          7 | Einar      | Hyatt       |        0.00 | 1985-09-05   | Site Reliability |
|          8 | Elisa      | Effertz     |     1256.37 | 2010-10-10   | Sales            |
|          2 | Emilio     | Fay         |        0.00 | 2007-03-22   | Site Reliability |
|        830 | Esteban    | Kuhic       |       24.47 | 1992-02-26   | IT               |
|         73 | Fernando   | Fisher      |    11979.81 | 1993-10-26   | Sales            |
|         60 | Fiona      | Gutkowski   |  4100378.98 | 1973-12-19   | IT               |
|         49 | Florine    | Reynolds    |        3.00 | 2012-03-23   | Finance          |
|    5806210 | Hermina    | Satterfield |      683.51 | 1982-03-13   | IT               |
|        569 | Hildegard  | Goldner     |        0.00 | 1986-11-10   | Finance          |
|       6288 | Hillary    | O'Kon       | 24164568.77 | 1978-03-06   | Sales            |
|         12 | Ismael     | Schneider   |        0.00 | 1976-02-08   | Site Reliability |
|       3828 | Jacinto    | Mosciski    |    13324.64 | 2006-10-30   | Sales            |
|          5 | Jaiden     | Hermann     |       12.66 | 1989-08-20   | IT               |
|        891 | Janis      | Bednar      | 99999999.99 | 2012-11-11   | Admin            |
|   59625769 | Jaren      | Dooley      |        0.00 | 2010-01-02   | Finance          |
|         81 | Jorge      | Powlowski   | 99999999.99 | 1981-11-22   | Admin            |
|        302 | Kennith    | D'Amore     |     1384.29 | 2014-11-22   | Site Reliability |
|        787 | Kian       | Gorczany    |   682896.00 | 2022-05-28   | Site Reliability |
|         56 | Kim        | Hayes       |       32.08 | 1972-10-02   | Admin            |
|      57880 | Laura      | Schmidt     |        2.18 | 2008-08-26   | IT               |
|        754 | Leonor     | White       |        0.00 | 1979-01-30   | Finance          |
|         31 | Lou        | Price       |   112791.61 | 2007-08-10   | Admin            |
|         57 | Luella     | Bradtke     |       91.02 | 2013-01-22   | Site Reliability |
|         41 | Marisa     | Emard       |       91.94 | 1999-05-01   | Admin            |
|        823 | Minnie     | Hilll       |     3119.20 | 1980-06-10   | Sales            |
|        987 | Mireya     | Kreiger     |        0.00 | 2018-01-12   | Site Reliability |
|     752068 | Nolan      | Schaden     |   141053.00 | 1993-03-20   | Sales            |
|        152 | Osborne    | Cremin      | 60144415.04 | 2001-01-18   | Site Reliability |
|          1 | Peggie     | Raynor      |   500190.78 | 2009-05-14   | Admin            |
|          3 | Rene       | Hintz       |        0.00 | 1986-02-22   | Sales            |
|        889 | Reyes      | Smitham     |     2046.90 | 1972-08-21   | Finance          |
|         40 | Ryan       | Kub         |       30.34 | 1989-03-30   | IT               |
|      16427 | Samanta    | Tillman     |       52.67 | 1985-08-05   | Site Reliability |
|         28 | Samara     | Glover      |    80301.10 | 2001-10-04   | Sales            |
|         68 | Shakira    | Wuckert     |        3.08 | 1992-10-10   | Sales            |
|        425 | Trey       | Emmerich    |        0.00 | 2016-08-06   | IT               |
|          4 | Zelda      | Tromp       |   297279.78 | 2007-12-23   | Finance          |
|     287508 | Zetta      | Schumm      | 60557563.96 | 2001-11-25   | Sales            |
|    1741200 | Zoey       | Donnelly    | 99999999.99 | 2016-02-09   | IT               |
+------------+------------+-------------+-------------+--------------+------------------+
```

Task 2:

```
mysql> SELECT COUNT(*) FROM Employee WHERE DEPARTMENT = 'Admin';
+----------+
| COUNT(*) |
+----------+
|        9 |
+----------+
1 row in set (0.00 sec)
```

Task 3:

```
mysql> SELECT FIRST_NAME, LAST_NAME FROM Employee WHERE SALARY BETWEEN 50000 AND 100000;
+------------+-----------+
| FIRST_NAME | LAST_NAME |
+------------+-----------+
| Samara     | Glover    |
| Delmer     | Tremblay  |
+------------+-----------+
```

Task 4:

```
mysql> SELECT Employee.* FROM Employee INNER JOIN Title ON Employee.EMP_ID = Title.EMP_REF_ID WHERE Title.EMP_TITLE = 'Manager';
+--------+------------+-----------+-----------+--------------+------------------+
| EMP_ID | FIRST_NAME | LAST_NAME | SALARY    | JOINING_DATE | DEPARTMENT       |
+--------+------------+-----------+-----------+--------------+------------------+
|      0 | Dalton     | Kilback   |    996.08 | 1997-09-10   | IT               |
|      1 | Peggie     | Raynor    | 500190.78 | 2009-05-14   | Admin            |
|      2 | Emilio     | Fay       |      0.00 | 2007-03-22   | Site Reliability |
|      3 | Rene       | Hintz     |      0.00 | 1986-02-22   | Sales            |
|      4 | Zelda      | Tromp     | 297279.78 | 2007-12-23   | Finance          |
|      5 | Jaiden     | Hermann   |     12.66 | 1989-08-20   | IT               |
+--------+------------+-----------+-----------+--------------+------------------+
6 rows in set (0.00 sec)
```

Task 5:

```
mysql> SELECT SALARY, DEPARTMENT, COUNT(*) FROM Employee GROUP BY SALARY, DEPARTMENT HAVING COUNT(*) > 1;
+-------------+------------------+----------+
| SALARY      | DEPARTMENT       | COUNT(*) |
+-------------+------------------+----------+
|        0.00 | Site Reliability |        4 |
|        0.00 | Finance          |        4 |
| 99999999.99 | Admin            |        2 |
+-------------+------------------+----------+
```

Task 6:

```
mysql> WITH RankedRows AS (SELECT  *,  ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS RowNum FROM Employee) SELECT * FROM RankedRows WHERE RowNum % 2 = 0;
+------------+------------+-------------+-------------+--------------+------------------+--------+
| EMP_ID     | FIRST_NAME | LAST_NAME   | SALARY      | JOINING_DATE | DEPARTMENT       | RowNum |
+------------+------------+-------------+-------------+--------------+------------------+--------+
|          1 | Peggie     | Raynor      |   500190.78 | 2009-05-14   | Admin            |      2 |
|          3 | Rene       | Hintz       |        0.00 | 1986-02-22   | Sales            |      4 |
|          5 | Jaiden     | Hermann     |       12.66 | 1989-08-20   | IT               |      6 |
|          7 | Einar      | Hyatt       |        0.00 | 1985-09-05   | Site Reliability |      8 |
|          9 | Blanca     | O'Conner    |        0.00 | 2015-09-28   | Finance          |     10 |
|         28 | Samara     | Glover      |    80301.10 | 2001-10-04   | Sales            |     12 |
|         40 | Ryan       | Kub         |       30.34 | 1989-03-30   | IT               |     14 |
|         49 | Florine    | Reynolds    |        3.00 | 2012-03-23   | Finance          |     16 |
|         56 | Kim        | Hayes       |       32.08 | 1972-10-02   | Admin            |     18 |
|         60 | Fiona      | Gutkowski   |  4100378.98 | 1973-12-19   | IT               |     20 |
|         68 | Shakira    | Wuckert     |        3.08 | 1992-10-10   | Sales            |     22 |
|         81 | Jorge      | Powlowski   | 99999999.99 | 1981-11-22   | Admin            |     24 |
|        152 | Osborne    | Cremin      | 60144415.04 | 2001-01-18   | Site Reliability |     26 |
|        302 | Kennith    | D'Amore     |     1384.29 | 2014-11-22   | Site Reliability |     28 |
|        569 | Hildegard  | Goldner     |        0.00 | 1986-11-10   | Finance          |     30 |
|        787 | Kian       | Gorczany    |   682896.00 | 2022-05-28   | Site Reliability |     32 |
|        830 | Esteban    | Kuhic       |       24.47 | 1992-02-26   | IT               |     34 |
|        891 | Janis      | Bednar      | 99999999.99 | 2012-11-11   | Admin            |     36 |
|       3828 | Jacinto    | Mosciski    |    13324.64 | 2006-10-30   | Sales            |     38 |
|       9925 | Alanis     | Murphy      |      625.25 | 1982-02-14   | IT               |     40 |
|      57880 | Laura      | Schmidt     |        2.18 | 2008-08-26   | IT               |     42 |
|     752068 | Nolan      | Schaden     |   141053.00 | 1993-03-20   | Sales            |     44 |
|    5806210 | Hermina    | Satterfield |      683.51 | 1982-03-13   | IT               |     46 |
|   59625769 | Jaren      | Dooley      |        0.00 | 2010-01-02   | Finance          |     48 |
| 2147483647 | Ari        | Schamberger |      984.90 | 2000-10-07   | Site Reliability |     50 |
+------------+------------+-------------+-------------+--------------+------------------+--------+
```

Task 7:

```
mysql> SELECT Employee.* FROM Employee LEFT JOIN Bonus ON Employee.EMP_ID = Bonus.EMP_REF_ID WHERE Bonus.EMP_REF_ID IS NULL;
+------------+------------+-------------+-------------+--------------+------------------+
| EMP_ID     | FIRST_NAME | LAST_NAME   | SALARY      | JOINING_DATE | DEPARTMENT       |
+------------+------------+-------------+-------------+--------------+------------------+
|      16427 | Samanta    | Tillman     |       52.67 | 1985-08-05   | Site Reliability |
|      57880 | Laura      | Schmidt     |        2.18 | 2008-08-26   | IT               |
|     287508 | Zetta      | Schumm      | 60557563.96 | 2001-11-25   | Sales            |
|     752068 | Nolan      | Schaden     |   141053.00 | 1993-03-20   | Sales            |
|    1741200 | Zoey       | Donnelly    | 99999999.99 | 2016-02-09   | IT               |
|    5806210 | Hermina    | Satterfield |      683.51 | 1982-03-13   | IT               |
|   29876816 | Anthony    | Ritchie     |    17591.97 | 1986-05-30   | Admin            |
|   59625769 | Jaren      | Dooley      |        0.00 | 2010-01-02   | Finance          |
|   65392242 | Arnoldo    | Beatty      | 18320386.20 | 1977-11-08   | Site Reliability |
| 2147483647 | Ari        | Schamberger |      984.90 | 2000-10-07   | Site Reliability |
+------------+------------+-------------+-------------+--------------+------------------+
```

Task 8:

```
mysql> SELECT * FROM Employee LIMIT 10;
+--------+------------+-----------+-----------+--------------+------------------+
| EMP_ID | FIRST_NAME | LAST_NAME | SALARY    | JOINING_DATE | DEPARTMENT       |
+--------+------------+-----------+-----------+--------------+------------------+
|      0 | Dalton     | Kilback   |    996.08 | 1997-09-10   | IT               |
|      1 | Peggie     | Raynor    | 500190.78 | 2009-05-14   | Admin            |
|      2 | Emilio     | Fay       |      0.00 | 2007-03-22   | Site Reliability |
|      3 | Rene       | Hintz     |      0.00 | 1986-02-22   | Sales            |
|      4 | Zelda      | Tromp     | 297279.78 | 2007-12-23   | Finance          |
|      5 | Jaiden     | Hermann   |     12.66 | 1989-08-20   | IT               |
|      6 | Assunta    | Paucek    |   5732.16 | 2016-05-10   | Admin            |
|      7 | Einar      | Hyatt     |      0.00 | 1985-09-05   | Site Reliability |
|      8 | Elisa      | Effertz   |   1256.37 | 2010-10-10   | Sales            |
|      9 | Blanca     | O'Conner  |      0.00 | 2015-09-28   | Finance          |
+--------+------------+-----------+-----------+--------------+------------------+
```

Task 9:

```
mysql> SELECT SALARY, COUNT(*) FROM Employee GROUP BY SALARY HAVING COUNT(*) > 1;
+-------------+----------+
| SALARY      | COUNT(*) |
+-------------+----------+
|        0.00 |       10 |
| 99999999.99 |        3 |
+-------------+----------+
```

Task 10:

```
mysql> WITH RankedRows AS (SELECT  *,  ROW_NUMBER() OVER (ORDER BY (SELECT NULL)) AS RowNum FROM Employee) SELECT * FROM RankedRows WHERE RowNum <= (SELECT
COUNT(*)/2 FROM Employee);
+--------+------------+-----------+-------------+--------------+------------------+--------+
| EMP_ID | FIRST_NAME | LAST_NAME | SALARY      | JOINING_DATE | DEPARTMENT       | RowNum |
+--------+------------+-----------+-------------+--------------+------------------+--------+
|      0 | Dalton     | Kilback   |      996.08 | 1997-09-10   | IT               |      1 |
|      1 | Peggie     | Raynor    |   500190.78 | 2009-05-14   | Admin            |      2 |
|      2 | Emilio     | Fay       |        0.00 | 2007-03-22   | Site Reliability |      3 |
|      3 | Rene       | Hintz     |        0.00 | 1986-02-22   | Sales            |      4 |
|      4 | Zelda      | Tromp     |   297279.78 | 2007-12-23   | Finance          |      5 |
|      5 | Jaiden     | Hermann   |       12.66 | 1989-08-20   | IT               |      6 |
|      6 | Assunta    | Paucek    |     5732.16 | 2016-05-10   | Admin            |      7 |
|      7 | Einar      | Hyatt     |        0.00 | 1985-09-05   | Site Reliability |      8 |
|      8 | Elisa      | Effertz   |     1256.37 | 2010-10-10   | Sales            |      9 |
|      9 | Blanca     | O'Conner  |        0.00 | 2015-09-28   | Finance          |     10 |
|     12 | Ismael     | Schneider |        0.00 | 1976-02-08   | Site Reliability |     11 |
|     28 | Samara     | Glover    |    80301.10 | 2001-10-04   | Sales            |     12 |
|     31 | Lou        | Price     |   112791.61 | 2007-08-10   | Admin            |     13 |
|     40 | Ryan       | Kub       |       30.34 | 1989-03-30   | IT               |     14 |
|     41 | Marisa     | Emard     |       91.94 | 1999-05-01   | Admin            |     15 |
|     49 | Florine    | Reynolds  |        3.00 | 2012-03-23   | Finance          |     16 |
|     51 | Christiana | Ernser    |   208561.10 | 1996-01-06   | Admin            |     17 |
|     56 | Kim        | Hayes     |       32.08 | 1972-10-02   | Admin            |     18 |
|     57 | Luella     | Bradtke   |       91.02 | 2013-01-22   | Site Reliability |     19 |
|     60 | Fiona      | Gutkowski |  4100378.98 | 1973-12-19   | IT               |     20 |
|     63 | Demond     | Mayert    |    12693.70 | 2016-01-23   | Sales            |     21 |
|     68 | Shakira    | Wuckert   |        3.08 | 1992-10-10   | Sales            |     22 |
|     73 | Fernando   | Fisher    |    11979.81 | 1993-10-26   | Sales            |     23 |
|     81 | Jorge      | Powlowski | 99999999.99 | 1981-11-22   | Admin            |     24 |
|    120 | Delmer     | Tremblay  |    51420.77 | 2020-03-13   | IT               |     25 |
+--------+------------+-----------+-------------+--------------+------------------+--------+
25 rows in set (0.00 sec)
```

Task 11:

```
mysql> WITH RankedRows AS (SELECT  *,  ROW_NUMBER() OVER (ORDER BY Salary DESC) AS RowNum FROM Employee) SELECT * FROM RankedRows WHERE RowNum <= 2;
+--------+------------+-----------+-------------+--------------+------------+--------+
| EMP_ID | FIRST_NAME | LAST_NAME | SALARY      | JOINING_DATE | DEPARTMENT | RowNum |
+--------+------------+-----------+-------------+--------------+------------+--------+
|    891 | Janis      | Bednar    | 99999999.99 | 2012-11-11   | Admin      |      1 |
|     81 | Jorge      | Powlowski | 99999999.99 | 1981-11-22   | Admin      |      2 |
+--------+------------+-----------+-------------+--------------+------------+--------+
2 rows in set (0.00 sec)
```

Task 12:

```
mysql> INSERT INTO Employee (EMP_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT) VALUES (103,'hyu','guy',89,'2017-09-10','IT');
ERROR 1644 (45000): Cannot insert employee with age less than 18.
mysql>
```

Task 13:

```
mysql> INSERT INTO Employee (EMP_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT) VALUES (103,'hyu','guy',89,'1997-09-10','IT');
Query OK, 1 row affected (0.01 sec)

mysql> delete from employee where EMP_ID = 103;
Query OK, 1 row affected (0.01 sec)

mysql> select * from employee_backup;
+--------+------------+-----------+--------+--------------+------------+
| EMP_ID | FIRST_NAME | LAST_NAME | SALARY | JOINING_DATE | DEPARTMENT |
+--------+------------+-----------+--------+--------------+------------+
|    103 | hyu        | guy       |  89.00 | 1997-09-10   | IT         |
+--------+------------+-----------+--------+--------------+------------+
1 row in set (0.00 sec)
```

Task 14:

```
mysql> INSERT INTO Employee (EMP_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT) VALUES (103,'hyu','guy',89,'1997-09-10','IT');
Query OK, 1 row affected (0.01 sec)

mysql> select * from insert_count;
+------------+--------------+
| table_name | insert_count |
+------------+--------------+
| Employee   |            1 |
+------------+--------------+
1 row in set (0.00 sec)

mysql> INSERT INTO Employee (EMP_ID, FIRST_NAME, LAST_NAME, SALARY, JOINING_DATE, DEPARTMENT) VALUES (104,'hyu','guy',89,'1997-09-10','IT');
Query OK, 1 row affected (0.01 sec)

mysql> select * from insert_count;
+------------+--------------+
| table_name | insert_count |
+------------+--------------+
| Employee   |            2 |
+------------+--------------+
1 row in set (0.00 sec)
```

Conclusion:

- Triggers are powerful mechanisms in SQL that can be used to enforce data integrity, automate tasks, and maintain historical records.
- Triggers enhance the reliability and security of the database by enforcing rules and executing actions automatically in response to specific events.
- Using basic sql statements to solve complex queries.