Week 2 - Final Project

Created by	Dakshil Gorasiya

Data dictionary

T01 (Employees)

Fields	Data Type	Constraint	Desctiption
T01F01	INT	PRIMARY KEY	emp_id
T01F02	VARCHAR(50)	NOT NULL	name
T01F03	INT	FORIGN KEY	dept_id
T01F04	DECIMAL(8, 2)	NOT NULL, salary > 0	salary

T02 (Departments)

Fields	Data Type	Constraint	Desctiption
T02F01	INT	PRIMARY KEY	dept_id
T02F02	VARCHAR(50)	NOT NULL	dept_name

T03 (Salaries)

Fields	Data Type	Constraint	Desctiption
T03F01	INT	FORIGN KEY	emp_id
T03F02	DATE	NOT NULL	date
T03F03	DECIMAL(8, 2)	NOT NULL	amount

T04 (salary_insert_log)

Fields	Data Type	Constraint	Desctiption

T04F01	INT	FORIGN KEY	emp_id
T04F02	TIMESTAMP	NOT NULL	updated_on
T04F03	DECIMAL(8, 2)	NOT NULL	amount

Create table

```
DROP TABLE IF EXISTS T01;
DROP TABLE IF EXISTS T02;
DROP TABLE IF EXISTS T03;
DROP TABLE IF EXISTS T04;

-- Department
CREATE TABLE T02
(
    T02F01 INT PRIMARY KEY, -- dept_id
    T02F02 VARCHAR(50) NOT NULL -- dept_name
);

-- Employees
CREATE TABLE T01
(
    T01F01 INT PRIMARY KEY, -- emp_id
    T01F02 VARCHAR(50) NOT NULL, -- name
    T01F03 INT, -- dept_id
    T01F04 DECIMAL(8,2) NOT NULL, -- salary
    CONSTRAINT FK_T01F03 FOREIGN KEY (T01F03) REFERENCES T02(T02F01),
    CONSTRAINT CHECK_T01F04 CHECK (T01F04 > 0)
);

-- Salaries
CREATE TABLE T03
(
    T03F01 INT, -- emp_id
    T03F02 DATE DEFAULT (CURDATE()), -- date
    T03F03 DECIMAL(8, 2) NOT NULL, -- amount
    CONSTRAINT FK_T03F01 FOREIGN KEY (T03F01) REFERENCES T01(T01F01),
    CONSTRAINT CHECK_T03F03 CHECK(T03F03 > 0)
);

-- salary_insert_log
CREATE TABLE T04
(
    T04F01 INT, -- emp_id
    T04F02 TIMESTAMP DEFAULT (NOW()), -- updated_on
    T04F03 DECIMAL(8, 2) NOT NULL, -- last_amount
    CONSTRAINT FK_T04F01 FOREIGN KEY (T04F01) REFERENCES T01(T01F01),
    CONSTRAINT CHECK_T04F03 CHECK (T04F03 > 0)
);
```

Insert dummy data

```
INSERT INTO T02 (T02F01, T02F02) VALUES
(1, 'Human Resources'),
(2, 'Engineering'),
(3, 'Sales'),
(4, 'Marketing'),
(5, 'Finance');

INSERT INTO T01 (T01F01, T01F02, T01F03, T01F04) VALUES
(101, 'Alice', 2, 90000.00),
(102, 'Bob', 2, 80000.00),
(103, 'Charlie', 3, 75000.00),
(104, 'David', 1, 60000.00),
(105, 'Eve', 4, 85000.00),
(106, 'Frank', NULL, 50000.00),
(107, 'Grace', 2, 95000.00);

INSERT INTO T03 (T03F01, T03F02, T03F03) VALUES
(101, '2024-01-01', 90000.00),
(101, '2024-02-01', 90000.00),
(101, '2024-03-01', 90000.00),
(102, '2024-01-01', 80000.00),
(102, '2024-02-01', 80000.00),
(103, '2024-01-01', 75000.00),
(104, '2024-01-01', 60000.00),
(104, '2024-02-01', 60000.00),
(107, '2024-03-01', 95000.00);
```

Query

```
-- 1. Find all employee and their department name
SELECT
    T01F01,
    T01F02,
    COALESCE(T02F02, "No department assigned")
FROM
    T01
    LEFT JOIN T02 ON T01F03 = T02F01;

-- 2. List all departments and the number of employees in each.
SELECT
    T02F01,
    T02F02,
    COUNT(T01F03)
FROM
    T02
    INNER JOIN T01 ON T01F03 = T02F01
GROUP BY
    T02F01,
    T02F02;

-- 3. Find employees who have not received any salary payments.
SELECT
    T01F01,
    T01F02
```

```
FROM
    T01
    LEFT JOIN T03 ON T01F01 = T03F01
WHERE
    T03F01 IS NULL;

-- 4. Calculate the total salary paid out by each department in January 2024.
SELECT
    T02F01,
    T02F02,
    SUM(T03F03)
FROM
    T01
    INNER JOIN T02 ON T01F03 = T02F01
    INNER JOIN T03 ON T01F01 = T03F01
WHERE
    T03F02 BETWEEN "2024-01-01" AND "2024-01-31"
GROUP BY
    T02F01,
    T02F02;
```

Sub query

```
-- 5. Find employees who earn more than the average salary of all employees.
SELECT
    T01F01,
    T01F02,
    T01F04
FROM
    T01
WHERE
    T01F04 > (SELECT AVG(T01F04) FROM T01);

-- 6. Subquery to find employees earning above department average.
```

```
SELECT
    T01F01,
    T01F02,
    T02F02,
    T01F04
FROM
    T01 AS E1
    INNER JOIN T02 ON T01F03 = T02F01
WHERE
    T01F04 > (SELECT AVG(T01F04) FROM T01 AS E2 WHERE E1.T01F03 = E2.T01F03);

-- 7. Find the employee with the highest salary in each department.
SELECT
    T01F01,
    T01F02,
    T02F02
FROM
    T01
    INNER JOIN T02 ON T01F03 = T02F01
WHERE
    (T01F03, T01F04) IN (SELECT T01F03, MAX(T01F04) FROM T01 GROUP BY T01F03);
```

SP to calculate yearly salary.

```
DROP PROCEDURE IF EXISTS CALCULATE_YEARLY_SALARY;

DELIMITER $$
CREATE PROCEDURE CALCULATE_YEARLY_SALARY(p_employee_id INT)
BEGIN
    SELECT
        T01F04 * 12
    FROM
        T01
    WHERE
```

```
        T01F01 = p_employee_id
    LIMIT
        1;
END$$
DELIMITER ;

CALL CALCULATE_YEARLY_SALARY(101);
```

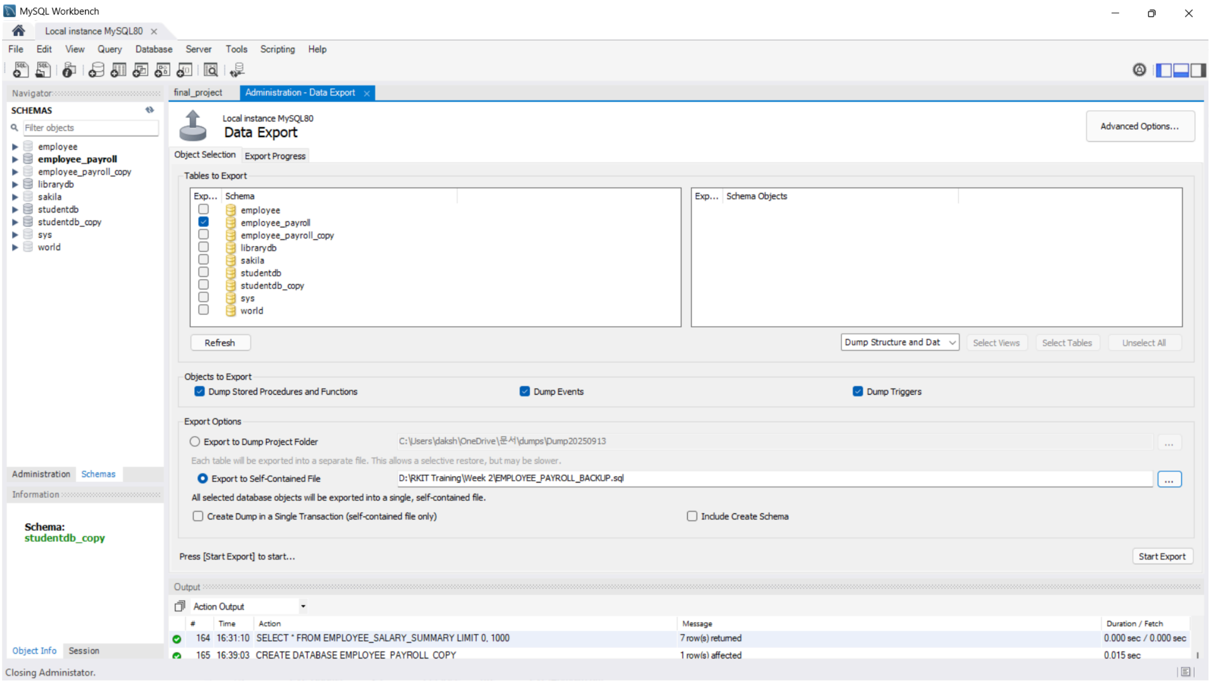
Trigger to auto-log salary insertions.

```
DELIMITER $$
CREATE TRIGGER AFTER_SALARY_INSERT
AFTER INSERT ON T03
FOR EACH ROW
BEGIN
    INSERT INTO T04(T04F01, T04F03) VALUES
    (NEW.T03F01, NEW.T03F03);
END$$
DELIMITER ;

INSERT INTO T03 (T03F01, T03F02, T03F03) VALUES
(101, '2024-04-01', 90000.00);
SELECT * FROM T04;
```

Create a view for employee salary summary.

```
CREATE OR REPLACE VIEW EMPLOYEE_SALARY_SUMMARY AS SELECT
    T01F01,
    T01F02,
    T02F02,
    T01F04,
    COALESCE(SUM(T03F03), 0),
    COUNT(T03F03)
FROM
    T01
    LEFT JOIN T02 ON T01F03 = T02F01
    LEFT JOIN T03 ON T01F01 = T03F01
GROUP BY
    T01F01,
    T01F02,
    T02F02,
    T01F04;

SELECT * FROM EMPLOYEE_SALARY_SUMMARY;
```

Backup Restore



Schema: studentdb_copy

Local instance MySQL80

Data Export

Tables to Export

Exp...	Schema
□	employee
☑	employee_payroll
□	employee_payroll_copy
□	librarydb
□	sakila
□	studentdb
□	studentdb_copy
□	sys
□	world

Exp... Schema Objects

Dump Structure and Dat

Objects to Export

☑ Dump Stored Procedures and Functions ☑ Dump Events ☑ Dump Triggers

Export Options

○ Export to Dump Project Folder C:\Users\daksh\OneDrive\문서\dumps\Dump20250913

Each table will be exported into a separate file. This allows a selective restore, but may be slower.

● Export to Self-Contained File D:\RKIT Training\Week 2\EMPLOYEE_PAYROLL_BACKUP.sql

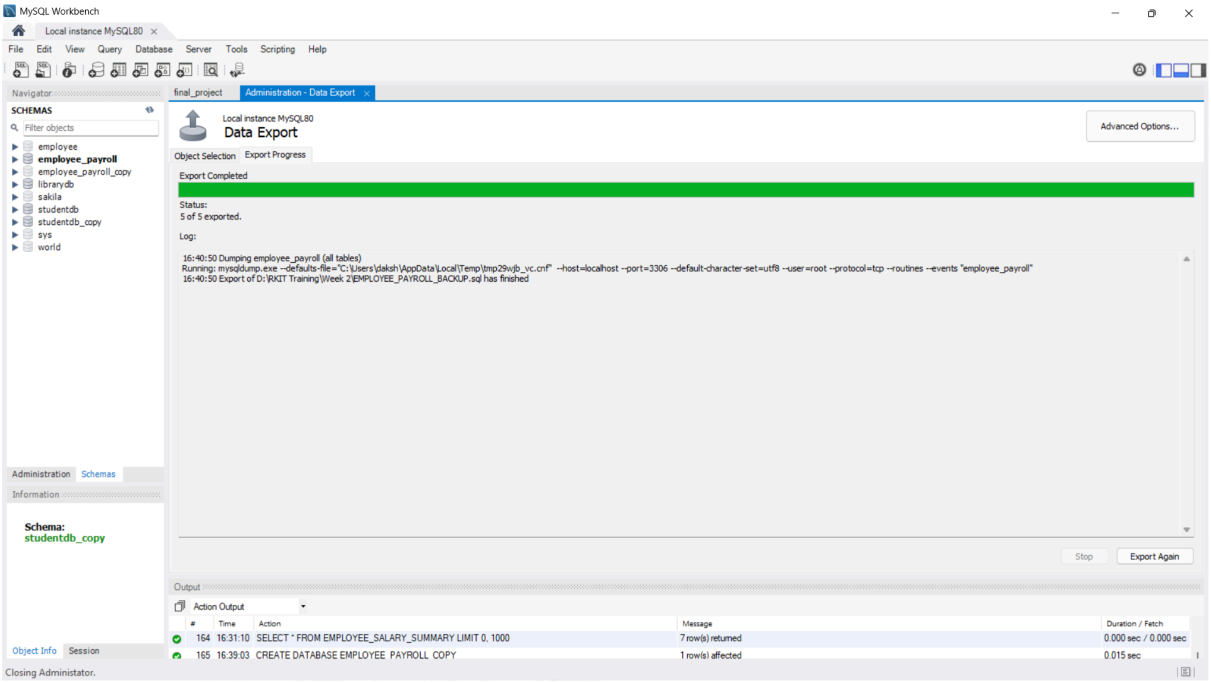
All selected database objects will be exported into a single, self-contained file.

□ Create Dump in a Single Transaction (self-contained file only) □ Include Create Schema

Press [Start Export] to start...

```
#    Time      Action                                            Message            Duration / Fetch
164  16:31:10  SELECT * FROM EMPLOYEE_SALARY_SUMMARY LIMIT 0, 1000  7 row(s) returned  0.000 sec / 0.000 sec
165  16:39:03  CREATE DATABASE EMPLOYEE_PAYROLL_COPY               1 row(s) affected  0.015 sec
```

Closing Administator.



Local instance MySQL80

Data Export

Export Completed

Status:
5 of 5 exported.

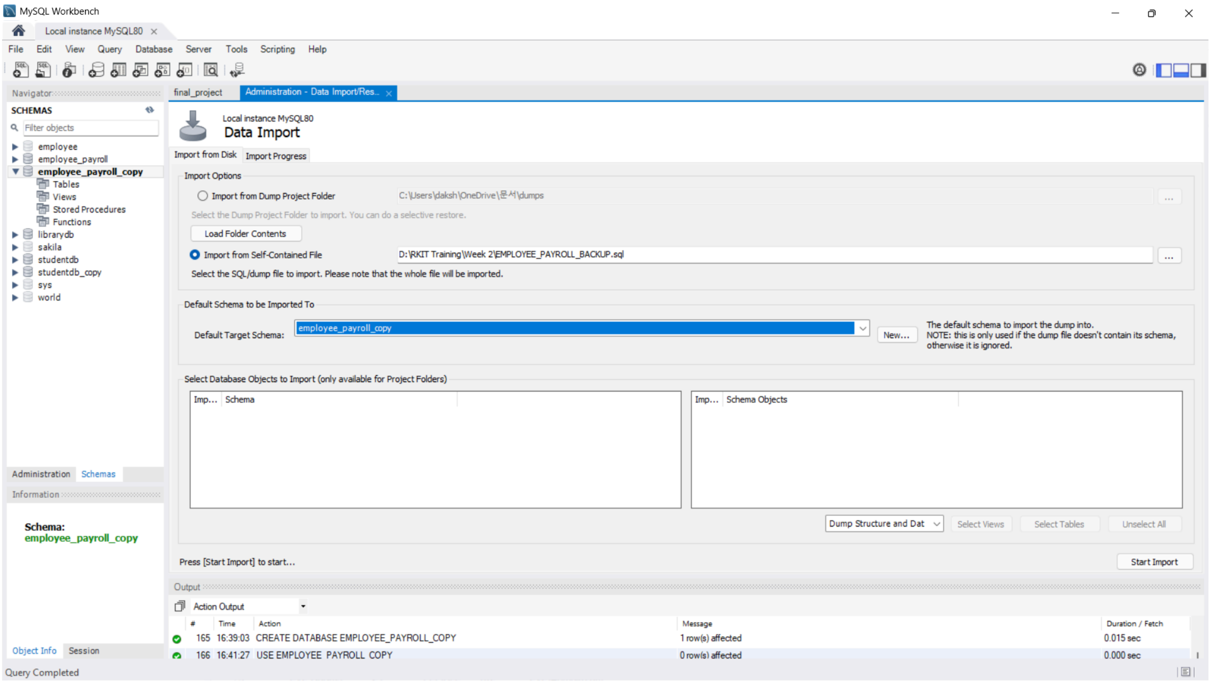
Log:

```
16:40:50 Dumping employee_payroll (all tables)
Running: mysqldump.exe --defaults-file="C:\Users\daksh\AppData\Local\Temp\tmp29wjb_vc.cnf"  --host=localhost --port=3306 --default-character-set=utf8 --user=root --protocol=tcp --routines --events "employee_payroll"
16:40:50 Export of D:\RKIT Training\Week 2\EMPLOYEE_PAYROLL_BACKUP.sql has finished
```

	#	Time	Action	Message	Duration / Fetch
✓	164	16:31:10	SELECT * FROM EMPLOYEE_SALARY_SUMMARY LIMIT 0, 1000	7 row(s) returned	0.000 sec / 0.000 sec
✓	165	16:39:03	CREATE DATABASE EMPLOYEE_PAYROLL_COPY	1 row(s) affected	0.015 sec

Schema:
studentdb_copy

Closing Administator.



Local instance MySQL80

Data Import

Import Options

○ Import from Dump Project Folder: C:\Users\daksh\OneDrive\문서\dumps

Select the Dump Project Folder to import. You can do a selective restore.

● Import from Self-Contained File: D:\RKIT Training\Week 2\EMPLOYEE_PAYROLL_BACKUP.sql

Select the SQL/dump file to import. Please note that the whole file will be imported.

Default Schema to be Imported To

Default Target Schema: employee_payroll_copy

The default schema to import the dump into.
NOTE: this is only used if the dump file doesn't contain its schema, otherwise it is ignored.

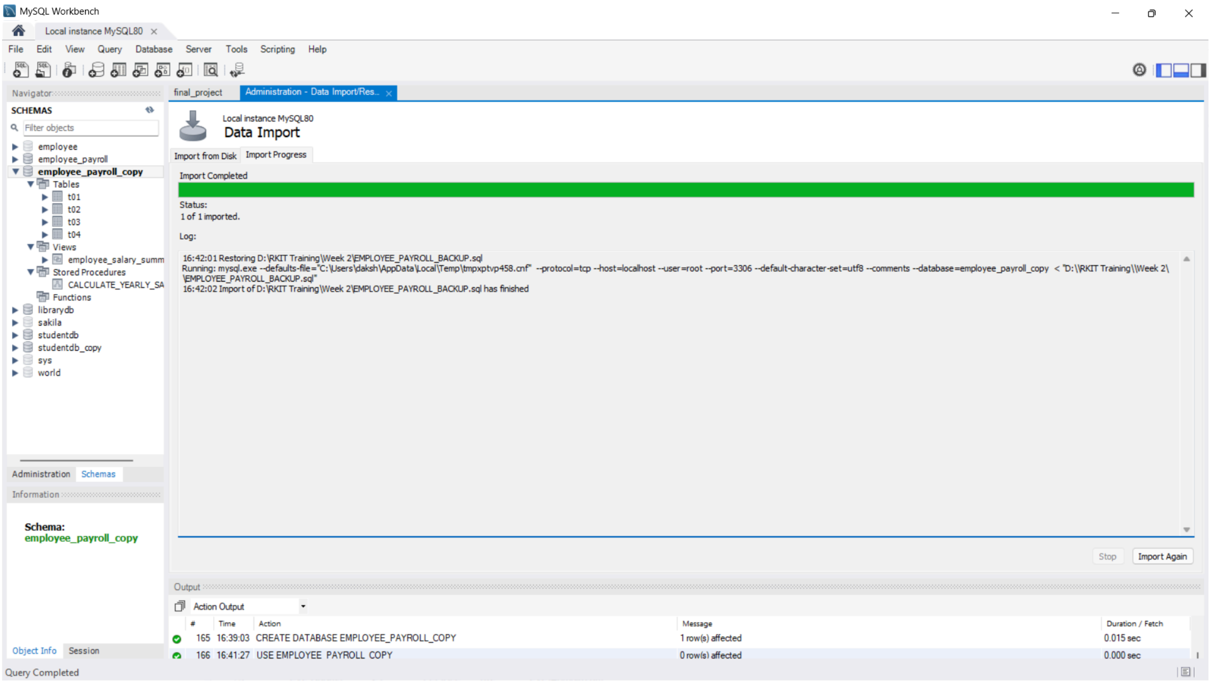
Select Database Objects to Import (only available for Project Folders)

Press [Start Import] to start...

	#	Time	Action	Message	Duration / Fetch
✓	165	16:39:03	CREATE DATABASE EMPLOYEE_PAYROLL_COPY	1 row(s) affected	0.015 sec
✓	166	16:41:27	USE EMPLOYEE PAYROLL COPY	0 row(s) affected	0.000 sec

Schema:
employee_payroll_copy

Query Completed



Local instance MySQL80

Data Import

Import Completed

Status:
1 of 1 imported.

Log:

```
16:42:01 Restoring D:\RKIT Training\Week 2\EMPLOYEE_PAYROLL_BACKUP.sql
Running: mysql.exe --defaults-file="C:\Users\daksh\AppData\Local\Temp\tmpxptvp458.cnf"  --protocol=tcp --host=localhost --user=root --port=3306 --default-character-set=utf8 --comments --database=employee_payroll_copy  < "D:\\RKIT Training\\Week 2\
\EMPLOYEE_PAYROLL_BACKUP.sql"
16:42:02 Import of D:\RKIT Training\Week 2\EMPLOYEE_PAYROLL_BACKUP.sql has finished
```

	#	Time	Action	Message	Duration / Fetch
✓	165	16:39:03	CREATE DATABASE EMPLOYEE_PAYROLL_COPY	1 row(s) affected	0.015 sec
✓	166	16:41:27	USE EMPLOYEE_PAYROLL_COPY	0 row(s) affected	0.000 sec

Schema:
employee_payroll_copy

Query Completed