Date: October 19, 2023

Group 4 Topic # 26 Payroll Management DBMS		
Names	Student #	Signature
Hamza Malik	501112545	Malik
Omer Zulfiqar	501101201	omerz
Amanat Sodhi	501108395	AS

Assignment 4 Part 2 Goal:

Create at least two Views. A view is essentially a virtual table based on the result-set of an SQL statement. They're useful when you want to share a specific subset or join of tables without giving access to the entire table(s).

Changes Made in this LAB:

Added Views with advanced queries and inserted data.

Script Code:

```
-- Drop tables in an order where tables with no foreign keys are dropped first
DROP TABLE DEDUCTION;
DROP TABLE TAX;
DROP TABLE PAYMENT;
DROP TABLE SALARY;

-- Now drop the tables with foreign key constraints
DROP TABLE EMPLOYEE;
DROP TABLE DESIGNATION;

-- Now, recreate the tables

-- DESIGNATION table
CREATE TABLE DESIGNATION (
   DESIGNATION_ID VARCHAR2(100) NOT NULL PRIMARY KEY,
   TITLE VARCHAR2(100) NOT NULL UNIQUE
```

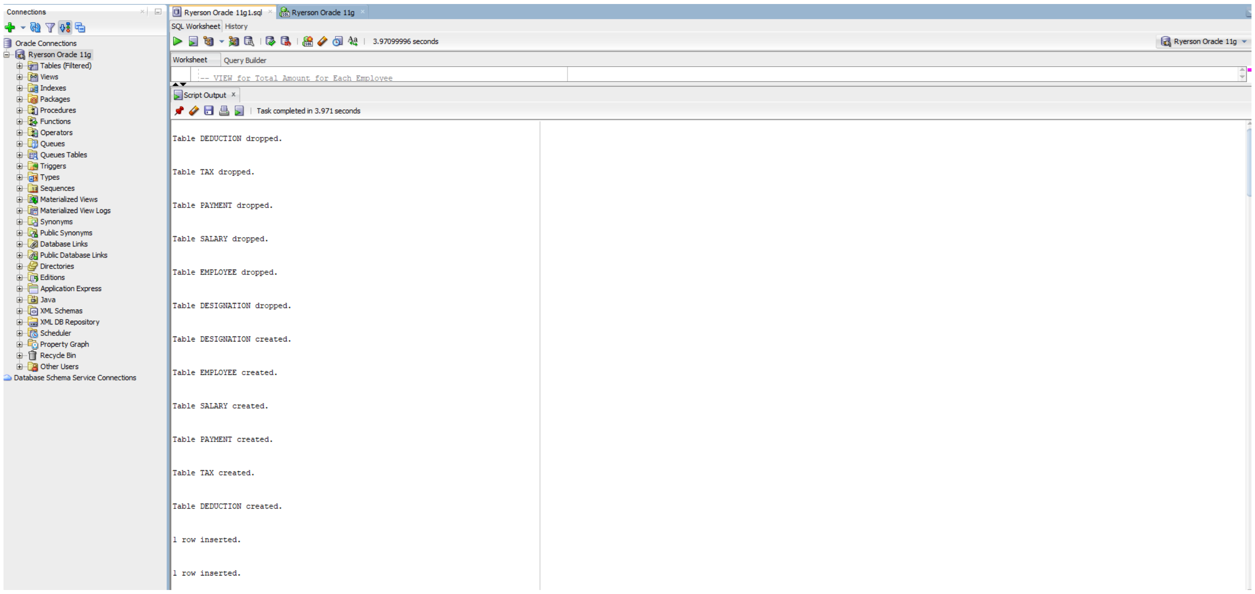
```
);

-- EMPLOYEE table
CREATE TABLE EMPLOYEE (
   EMPLOYEE_ID VARCHAR2(100) NOT NULL PRIMARY KEY,
   NAME VARCHAR2(100) NOT NULL,
   DESIGNATION_ID VARCHAR2(100) UNIQUE REFERENCES
DESIGNATION(DESIGNATION_ID)
);

-- SALARY table
CREATE TABLE SALARY (
   SALARY_ID VARCHAR2(100) NOT NULL PRIMARY KEY,
   EMPLOYEE_ID VARCHAR2(100) UNIQUE REFERENCES
EMPLOYEE(EMPLOYEE_ID),
   AMOUNT NUMBER(10,2) NOT NULL CHECK (AMOUNT >= 0)
);

-- PAYMENT table
CREATE TABLE PAYMENT (
   PAYMENT_ID VARCHAR2(100) NOT NULL PRIMARY KEY,
   EMPLOYEE_ID VARCHAR2(100) REFERENCES EMPLOYEE(EMPLOYEE_ID),
   AMOUNT NUMBER(10,2) NOT NULL CHECK (AMOUNT >= 0),
   DATE_RECEIVED DATE DEFAULT SYSDATE
);

-- TAX table
CREATE TABLE TAX (
   TAX_ID VARCHAR2(100) NOT NULL PRIMARY KEY,
   EMPLOYEE_ID VARCHAR2(100) REFERENCES EMPLOYEE(EMPLOYEE_ID),
   TAX_AMOUNT NUMBER(10,2) NOT NULL CHECK (TAX_AMOUNT >= 0)
);

-- DEDUCTION table
CREATE TABLE DEDUCTION (
   DEDUCTION_ID VARCHAR2(100) NOT NULL PRIMARY KEY,
   EMPLOYEE_ID VARCHAR2(100) REFERENCES EMPLOYEE(EMPLOYEE_ID),
   DEDUCTION_AMOUNT NUMBER(10,2) NOT NULL CHECK (DEDUCTION_AMOUNT
>= 0),
   REASON VARCHAR2(200)
```

```
);

INSERT INTO DESIGNATION (DESIGNATION_ID, TITLE) VALUES ('D1', 'Manager');
INSERT INTO DESIGNATION (DESIGNATION_ID, TITLE) VALUES ('D2', 'Engineer');
INSERT INTO DESIGNATION (DESIGNATION_ID, TITLE) VALUES ('D3', 'Lawyer');

INSERT INTO EMPLOYEE (EMPLOYEE_ID, NAME, DESIGNATION_ID) VALUES ('E1',
'Alice', 'D1');
INSERT INTO EMPLOYEE (EMPLOYEE_ID, NAME, DESIGNATION_ID) VALUES ('E2',
'Bob', 'D2');
INSERT INTO EMPLOYEE (EMPLOYEE_ID, NAME, DESIGNATION_ID) VALUES ('E3',
'Charlie', 'D3');

INSERT INTO SALARY (SALARY_ID, EMPLOYEE_ID, AMOUNT) VALUES ('S1', 'E1',
60000);
INSERT INTO SALARY (SALARY_ID, EMPLOYEE_ID, AMOUNT) VALUES ('S2', 'E2',
50000);
INSERT INTO SALARY (SALARY_ID, EMPLOYEE_ID, AMOUNT) VALUES ('S3', 'E3',
40000);

INSERT INTO PAYMENT (PAYMENT_ID, EMPLOYEE_ID, AMOUNT, DATE_RECEIVED)
VALUES ('P1', 'E1', 1000, TO_DATE('15-OCT-2023', 'DD-MON-YYYY'));
INSERT INTO PAYMENT (PAYMENT_ID, EMPLOYEE_ID, AMOUNT, DATE_RECEIVED)
VALUES ('P2', 'E2', 800, TO_DATE('14-OCT-2023', 'DD-MON-YYYY'));

INSERT INTO TAX (TAX_ID, EMPLOYEE_ID, TAX_AMOUNT) VALUES ('T1', 'E1', 500);
INSERT INTO TAX (TAX_ID, EMPLOYEE_ID, TAX_AMOUNT) VALUES ('T2', 'E2', 400);


INSERT INTO DEDUCTION (DEDUCTION_ID, EMPLOYEE_ID, DEDUCTION_AMOUNT,
REASON) VALUES ('Dd1', 'E1', 100, 'Health Insurance');
INSERT INTO DEDUCTION (DEDUCTION_ID, EMPLOYEE_ID, DEDUCTION_AMOUNT,
REASON) VALUES ('Dd2', 'E2', 50, 'Transport Fee');




-- QUERY 1: Retrieve all managers from DESIGNATION table
```

```
SELECT * FROM DESIGNATION WHERE TITLE = 'Manager';
-- QUERY 2
SELECT NAME, DESIGNATION_ID FROM EMPLOYEE WHERE NAME LIKE 'A%';
--QUERY 3
SELECT EMPLOYEE_ID, AMOUNT FROM SALARY WHERE AMOUNT > 50000;
-- QUERY 4
SELECT EMPLOYEE_ID, AMOUNT, DATE_RECEIVED FROM PAYMENT WHERE
DATE_RECEIVED > '01-JAN-2023';
--QUERY 5
SELECT EMPLOYEE_ID, TAX_AMOUNT FROM TAX WHERE TAX_AMOUNT > 1000;
-- QUERY 6
SELECT EMPLOYEE_ID, DEDUCTION_AMOUNT, REASON FROM DEDUCTION
WHERE DEDUCTION_AMOUNT < 500;

-- COMPLEX
SELECT E.NAME, D.TITLE, S.AMOUNT
FROM EMPLOYEE E, DESIGNATION D, SALARY S
WHERE E.DESIGNATION_ID = D.DESIGNATION_ID AND E.EMPLOYEE_ID =
S.EMPLOYEE_ID;


DROP VIEW EmployeeTotalAmount;
DROP VIEW EmployeeDeductionsTaxes;


-- VIEW for Total Amount for Each Employee
CREATE VIEW EmployeeTotalAmount AS
SELECT E.EMPLOYEE_ID, E.NAME, NVL(S.AMOUNT, 0) + NVL(P.AMOUNT, 0) AS
TOTAL_AMOUNT
FROM EMPLOYEE E
LEFT JOIN SALARY S ON E.EMPLOYEE_ID = S.EMPLOYEE_ID
LEFT JOIN PAYMENT P ON E.EMPLOYEE_ID = P.EMPLOYEE_ID;

-- VIEW for Total Deductions and Taxes for Each Employee
CREATE VIEW EmployeeDeductionsTaxes AS
SELECT E.EMPLOYEE_ID, E.NAME, NVL(D.DEDUCTION_AMOUNT, 0) AS
TOTAL_DEDUCTIONS, NVL(T.TAX_AMOUNT, 0) AS TOTAL_TAXES
FROM EMPLOYEE E
LEFT JOIN DEDUCTION D ON E.EMPLOYEE_ID = D.EMPLOYEE_ID
LEFT JOIN TAX T ON E.EMPLOYEE_ID = T.EMPLOYEE_ID;
```

```sql
-- Advanced Queries

-- Query 7
SELECT E.NAME, DE.TITLE, P.AMOUNT AS TOTAL_PAYMENT, TX.TAX_AMOUNT AS
TOTAL_TAX
FROM EMPLOYEE E
JOIN DESIGNATION DE ON E.DESIGNATION_ID = DE.DESIGNATION_ID
LEFT JOIN PAYMENT P ON E.EMPLOYEE_ID = P.EMPLOYEE_ID
LEFT JOIN TAX TX ON E.EMPLOYEE_ID = TX.EMPLOYEE_ID;

-- Query 8
SELECT E.NAME, SUM(D.DEDUCTION_AMOUNT) AS TOTAL_DEDUCTION
FROM EMPLOYEE E
JOIN DEDUCTION D ON E.EMPLOYEE_ID = D.EMPLOYEE_ID
GROUP BY E.NAME
HAVING SUM(D.DEDUCTION_AMOUNT) > 1000;

-- Query 9
SELECT A.EMPLOYEE_ID, A.NAME, (A.TOTAL_AMOUNT - B.TOTAL_DEDUCTIONS -
B.TOTAL_TAXES) AS NET_AMOUNT
FROM EmployeeTotalAmount A
JOIN EmployeeDeductionsTaxes B ON A.EMPLOYEE_ID = B.EMPLOYEE_ID
WHERE (A.TOTAL_AMOUNT - B.TOTAL_DEDUCTIONS - B.TOTAL_TAXES) > 50000;
```

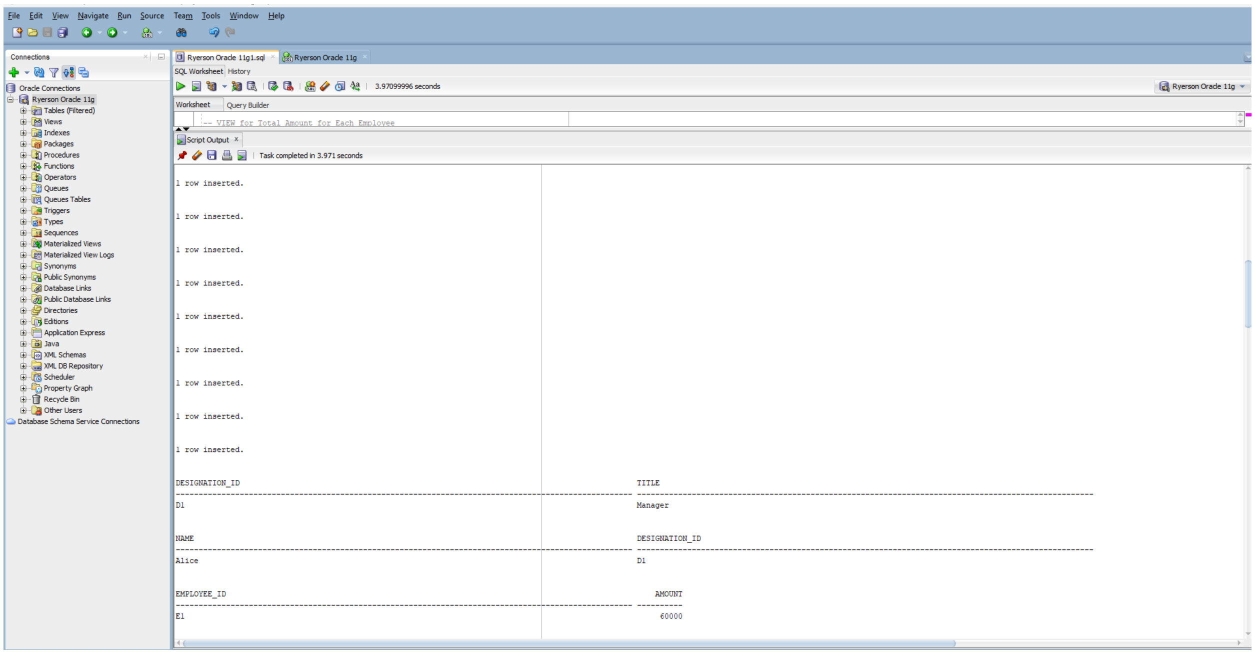
OUTPUT:



```
-- VIEW for Total Amount for Each Employee
```

Task completed in 3.971 seconds

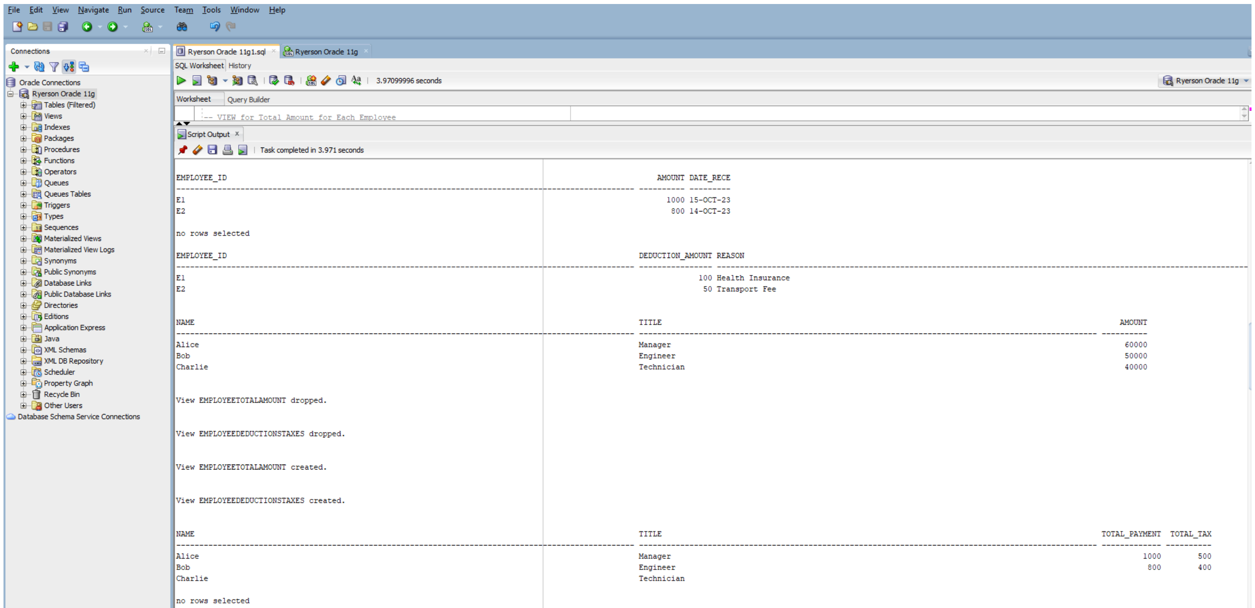
```
Table DEDUCTION dropped.


Table TAX dropped.


Table PAYMENT dropped.


Table SALARY dropped.


Table EMPLOYEE dropped.


Table DESIGNATION dropped.


Table DESIGNATION created.


Table EMPLOYEE created.


Table SALARY created.


Table PAYMENT created.


Table TAX created.


Table DEDUCTION created.


1 row inserted.


1 row inserted.
```



```
-- VIEW for Total Amount for Each Employee
```

Task completed in 3.971 seconds

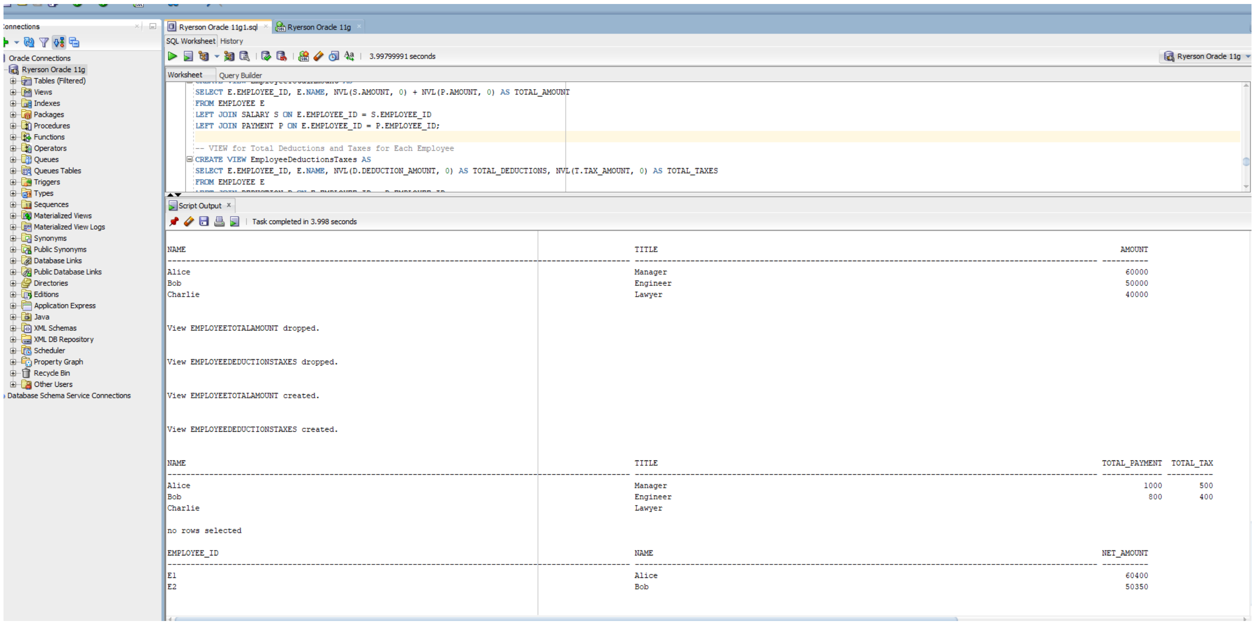
```
1 row inserted.


1 row inserted.


1 row inserted.


1 row inserted.


1 row inserted.


1 row inserted.


1 row inserted.


1 row inserted.


1 row inserted.


DESIGNATION_ID                                                   TITLE
---------------------------------------------------------------- ----------------------------------------------------------------
D1                                                               Manager


NAME                                                             DESIGNATION_ID
---------------------------------------------------------------- ----------------------------------------------------------------
Alice                                                            D1


EMPLOYEE_ID                                                          AMOUNT
---------------------------------------------------------------- ----------
E1                                                                    60000
```



```
-- VIEW for Total Amount for Each Employee
```

Task completed in 3.971 seconds

```
EMPLOYEE_ID                                                          AMOUNT DATE_RECE
---------------------------------------------------------------- ---------- ---------
E1                                                                     1000 15-OCT-23
E2                                                                      800 14-OCT-23

no rows selected

EMPLOYEE_ID                                                      DEDUCTION_AMOUNT REASON
---------------------------------------------------------------- ---------------- ----------------------------------------------------------------
E1                                                                            100 Health Insurance
E2                                                                             50 Transport Fee


NAME                                                             TITLE                                                                AMOUNT
---------------------------------------------------------------- ---------------------------------------------------------------- ----------
Alice                                                            Manager                                                               60000
Bob                                                              Engineer                                                              50000
Charlie                                                          Technician                                                            40000


View EMPLOYEETOTALAMOUNT dropped.


View EMPLOYEEDEDUCTIONSTAXES dropped.


View EMPLOYEETOTALAMOUNT created.


View EMPLOYEEDEDUCTIONSTAXES created.


NAME                                                             TITLE                                                            TOTAL_PAYMENT  TOTAL_TAX
---------------------------------------------------------------- ---------------------------------------------------------------- ------------- ----------
Alice                                                            Manager                                                                   1000        500
Bob                                                              Engineer                                                                   800        400
Charlie                                                          Technician

no rows selected
```



```sql
SELECT E.EMPLOYEE_ID, E.NAME, NVL(S.AMOUNT, 0) + NVL(P.AMOUNT, 0) AS TOTAL_AMOUNT
FROM EMPLOYEE E
LEFT JOIN SALARY S ON E.EMPLOYEE_ID = S.EMPLOYEE_ID
LEFT JOIN PAYMENT P ON E.EMPLOYEE_ID = P.EMPLOYEE_ID;

-- VIEW for Total Deductions and Taxes for Each Employee
CREATE VIEW EmployeeDeductionsTaxes AS
SELECT E.EMPLOYEE_ID, E.NAME, NVL(D.DEDUCTION_AMOUNT, 0) AS TOTAL_DEDUCTIONS, NVL(T.TAX_AMOUNT, 0) AS TOTAL_TAXES
FROM EMPLOYEE E
```

```
NAME                                  TITLE                                   AMOUNT
------------------------------------- --------------------------------------- ----------
Alice                                 Manager                                      60000
Bob                                   Engineer                                     50000
Charlie                               Lawyer                                       40000


View EMPLOYEETOTALAMOUNT dropped.


View EMPLOYEEDEDUCTIONSTAXES dropped.


View EMPLOYEETOTALAMOUNT created.


View EMPLOYEEDEDUCTIONSTAXES created.


NAME                                  TITLE                                   TOTAL_PAYMENT  TOTAL_TAX
------------------------------------- --------------------------------------- ------------- ----------
Alice                                 Manager                                          1000        500
Bob                                   Engineer                                          800        400
Charlie                               Lawyer

no rows selected

EMPLOYEE_ID                           NAME                                    NET_AMOUNT
------------------------------------- --------------------------------------- ----------
E1                                    Alice                                        60400
E2                                    Bob                                          50350
```