

24SOECE11049

Database Management System

## TUTORIAL - 3

1. Create a table

### SQL QUERY Code

```
CREATE TABLE EMPLOYEES_A (
    EMPLOYEE_ID NUMBER PRIMARY KEY,
    FIRST_NAME VARCHAR2(50),
    LAST_NAME VARCHAR2(50),
    DEPARTMENT VARCHAR2(50),
    SALARY NUMBER,
    HIRE_DATE DATE
);
```

```
INSERT INTO EMPLOYEES_A VALUES (1, 'PETER', 'WRANGLE', 'CE', 100000, '1/16/2023')
INSERT INTO EMPLOYEES_A VALUES (2, 'JOHN', 'DOE', 'HR', 50000, '1/15/2020')
INSERT INTO EMPLOYEES_A VALUES (3, 'Jane', 'Smith', 'IT', 60000, '5/20/2019')
INSERT INTO EMPLOYEES_A VALUES (4, 'Bob', 'Johnson', 'Sales', 55000, '02-10-2021')
INSERT INTO EMPLOYEES_A VALUES (5, 'Alice', 'Williams', 'Marketing', 48000, '04-05-2022')
INSERT INTO EMPLOYEES_A VALUES (6, 'Charlie', 'Brown', 'IT', 65000, '11/30/2018')
```

### Output Screenshot:

### QUESTIONS :-

1. Add a new column EMAIL of type VARCHAR2(100) to store employees' email addresses.

QUERY CODE : ALTER TABLE EMPLOYEES\_A ADD (EMAIL VARCHAR2(100));

```
Table altered.
0.06 seconds
```

24SOECE11049

### Database Management System

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  | EMAIL |
|-------------|------------|-----------|------------|--------|------------|-------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  | -     |
| 3           | Jane       | Smith     | IT         | 60000  | 5/20/2019  | -     |
| 6           | Charlie    | Brown     | IT         | 65000  | 11/30/2018 | -     |
| 4           | Bob        | Johnson   | Sales      | 55000  | 2/10/2021  | -     |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   | -     |
| 1           | PETER      | WRANGLE   | CE         | 100000 | 1/16/2023  | -     |

2. Rename the DEPARTMENT column to DEPT\_NAME.

QUERY CODE : ALTER TABLE EMPLOYEES\_A RENAME COLUMN DEPARTMENT TO DEPT\_NAME

```
Table altered.
0.06 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPT_NAME | SALARY | HIRE_DATE  | EMAIL |
|-------------|------------|-----------|-----------|--------|------------|-------|
| 2           | JOHN       | DOE       | HR        | 50000  | 1/15/2020  | -     |
| 3           | Jane       | Smith     | IT        | 60000  | 5/20/2019  | -     |
| 6           | Charlie    | Brown     | IT        | 65000  | 11/30/2018 | -     |
| 4           | Bob        | Johnson   | Sales     | 55000  | 2/10/2021  | -     |
| 5           | Alice      | Williams  | Marketing | 48000  | 4/5/2022   | -     |
| 1           | PETER      | WRANGLE   | CE        | 100000 | 1/16/2023  | -     |

3. Drop the HIRE\_DATE column from the table.

QUERY CODE : ALTER TABLE EMPLOYEES\_A DROP COLUMN HIRE\_DATE

```
Table altered.
0.06 seconds
```

24SOECE11049

### Database Management System

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPT_NAME | SALARY | EMAIL |
|-------------|------------|-----------|-----------|--------|-------|
| 2           | JOHN       | DOE       | HR        | 50000  | -     |
| 3           | Jane       | Smith     | IT        | 60000  | -     |
| 6           | Charlie    | Brown     | IT        | 65000  | -     |
| 4           | Bob        | Johnson   | Sales     | 55000  | -     |
| 5           | Alice      | Williams  | Marketing | 48000  | -     |
| 1           | PETER      | WRANGLE   | CE        | 100000 | -     |

4. Add a new column BONUS of type NUMBER(8,2) to store employee bonuses.

QUERY CODE : ALTER TABLE EMPLOYEES\_A ADD (BONUS NUMBER(8,2));

```
Table altered.

0.06 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPT_NAME | SALARY | EMAIL | BONUS |
|-------------|------------|-----------|-----------|--------|-------|-------|
| 2           | JOHN       | DOE       | HR        | 50000  | -     | -     |
| 3           | Jane       | Smith     | IT        | 60000  | -     | -     |
| 6           | Charlie    | Brown     | IT        | 65000  | -     | -     |
| 4           | Bob        | Johnson   | Sales     | 55000  | -     | -     |
| 5           | Alice      | Williams  | Marketing | 48000  | -     | -     |
| 1           | PETER      | WRANGLE   | CE        | 100000 | -     | -     |

5. Change the data type of the FIRST\_NAME column to VARCHAR2(150).

QUERY CODE : ALTER TABLE EMPLOYEES\_A MODIFY (FIRST\_NAME VARCHAR2(150));

24SOECE11049

Database Management System

```
Table altered.  
0.05 seconds
```

**EMPLOYEES\_A**

Columns Data Indexes Constraints Grants Statistics Triggers Dependencies DDL Sample Queries

Download Refresh

CREATE TABLE "EMPLOYEES\_A"  
(  
 "EMPLOYEE\_ID" NUMBER,  
 "FIRST\_NAME" VARCHAR2(150),  
 "LAST\_NAME" VARCHAR2(50),  
 "DEPT\_NAME" VARCHAR2(50),  
 "SALARY" NUMBER,  
 "EMAIL" VARCHAR2(100),  
 "BONUS" NUMBER(8,2),  
 | PRIMARY KEY ("EMPLOYEE\_ID")  
USING INDEX ENABLE  
) ;

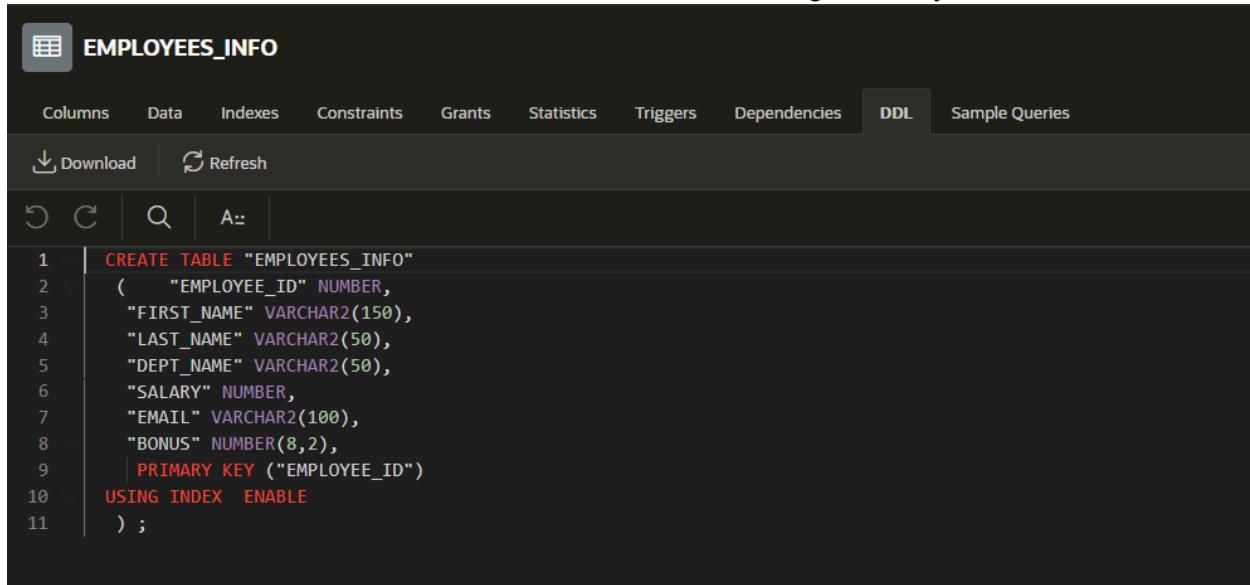
6. Rename the table EMPLOYEES\_E to EMPLOYEES\_INFO.

QUERY CODE : ALTER TABLE EMPLOYEES\_A RENAME TO EMPLOYEES\_INFO;

```
Table altered.  
0.05 seconds
```

24SOECE11049

## Database Management System



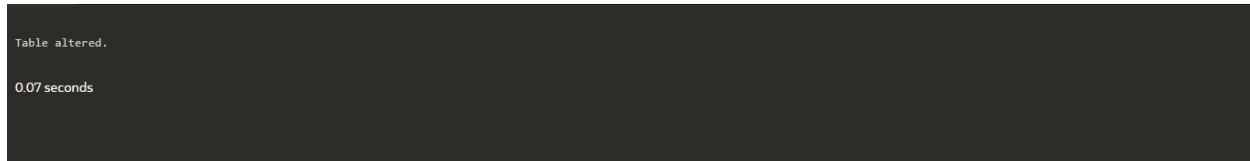
```

CREATE TABLE "EMPLOYEES_INFO"
(
    "EMPLOYEE_ID" NUMBER,
    "FIRST_NAME" VARCHAR2(150),
    "LAST_NAME" VARCHAR2(50),
    "DEPT_NAME" VARCHAR2(50),
    "SALARY" NUMBER,
    "EMAIL" VARCHAR2(100),
    "BONUS" NUMBER(8,2),
    PRIMARY KEY ("EMPLOYEE_ID")
)
USING INDEX ENABLE
;

```

7. Add a new column JOINING\_YEAR of type NUMBER(4) to store the employee's joining year.

QUERY CODE : ALTER TABLE EMPLOYEES\_INFO ADD (JOINING\_YEAR NUMBER(4));



```

Table altered.

0.07 seconds

```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPT_NAME | SALARY | EMAIL | BONUS | JOINING_YEAR |
|-------------|------------|-----------|-----------|--------|-------|-------|--------------|
| 2           | JOHN       | DOE       | HR        | 50000  | -     | -     | -            |
| 3           | Jane       | Smith     | IT        | 60000  | -     | -     | -            |
| 6           | Charlie    | Brown     | IT        | 65000  | -     | -     | -            |
| 4           | Bob        | Johnson   | Sales     | 55000  | -     | -     | -            |
| 5           | Alice      | Williams  | Marketing | 48000  | -     | -     | -            |
| 1           | PETER      | WRANGLE   | CE        | 100000 | -     | -     | -            |

8. Drop the BONUS column from the table.

QUERY CODE : ALTER TABLE EMPLOYEES\_INFO DROP COLUMN BONUS

24SOECE11049

### Database Management System

```
Table altered.
```

```
0.05 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPT_NAME | SALARY | EMAIL | JOINING_YEAR |
|-------------|------------|-----------|-----------|--------|-------|--------------|
| 2           | JOHN       | DOE       | HR        | 50000  | -     | -            |
| 3           | Jane       | Smith     | IT        | 60000  | -     | -            |
| 6           | Charlie    | Brown     | IT        | 65000  | -     | -            |
| 4           | Bob        | Johnson   | Sales     | 55000  | -     | -            |
| 5           | Alice      | Williams  | Marketing | 48000  | -     | -            |
| 1           | PETER      | WRANGLE   | CE        | 100000 | -     | -            |

9. Add a new column ADDRESS of type VARCHAR2(255) to store employee addresses.

QUERY CODE : ALTER TABLE EMPLOYEES\_INFO ADD (ADDRESS VARCHAR2(255));

```
Table altered.
```

```
0.06 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPT_NAME | SALARY | EMAIL | JOINING_YEAR | ADDRESS |
|-------------|------------|-----------|-----------|--------|-------|--------------|---------|
| 2           | JOHN       | DOE       | HR        | 50000  | -     | -            | -       |
| 3           | Jane       | Smith     | IT        | 60000  | -     | -            | -       |
| 6           | Charlie    | Brown     | IT        | 65000  | -     | -            | -       |
| 4           | Bob        | Johnson   | Sales     | 55000  | -     | -            | -       |
| 5           | Alice      | Williams  | Marketing | 48000  | -     | -            | -       |
| 1           | PETER      | WRANGLE   | CE        | 100000 | -     | -            | -       |

10. Increase the salary of all employees in the IT department by 10%.

QUERY CODE : UPDATE EMPLOYEES\_A SET SALARY = SALARY + (SALARY\*0.1)  
WHERE DEPARTMENT = 'IT'

```
2 row(s) updated.
```

```
0.01 seconds
```



24SOECE11049

Database Management System

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Sales      | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | CE         | 100000 | 1/16/2023  |
| 6           | Charlie    | Brown     | IT         | 71500  | 11/30/2018 |

11. Set the DEPARTMENT of employee ID 4 to 'Marketing'.

QUERY CODE : UPDATE EMPLOYEES\_A SET DEPARTMENT = 'Marketing' WHERE EMPLOYEE\_ID = 4;

```
1 row(s) updated.  
0.00 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | CE         | 100000 | 1/16/2023  |
| 6           | Charlie    | Brown     | IT         | 71500  | 11/30/2018 |
| 3           | Jane       | Smith     | IT         | 66000  | 5/20/2019  |

12. Update the LAST\_NAME of employee ID 3 from 'Smith' to 'Johnson'.

QUERY CODE : UPDATE EMPLOYEES\_A SET LAST\_NAME = 'Johnson' WHERE EMPLOYEE\_ID = 3 AND LAST\_NAME = 'Smith'

```
1 row(s) updated.  
0.00 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | CE         | 100000 | 1/16/2023  |
| 6           | Charlie    | Brown     | IT         | 71500  | 11/30/2018 |
| 3           | Jane       | Johnson   | IT         | 66000  | 5/20/2019  |

24SOECE11049

Database Management System

13. Reduce the salary of employees hired before 01-JAN-2020 by 5%.

QUERY CODE : UPDATE EMPLOYEES\_A SET SALARY = SALARY \* 0.95 WHERE HIRE\_DATE < '01/01/2020'

2 row(s) updated.

0.01 seconds

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | CE         | 100000 | 1/16/2023  |
| 6           | Charlie    | Brown     | IT         | 67925  | 11/30/2018 |
| 3           | Jane       | Johnson   | IT         | 62700  | 5/20/2019  |

6 rows returned in 0.00 seconds [Download](#)

14. Set the FIRST\_NAME of employee ID 6 to uppercase.

QUERY CODE : UPDATE EMPLOYEES\_A SET FIRST\_NAME = UPPER(FIRST\_NAME) WHERE EMPLOYEE\_ID = 6

1 row(s) updated.

0.00 seconds

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | CE         | 100000 | 1/16/2023  |
| 6           | CHARLIE    | Brown     | IT         | 67925  | 11/30/2018 |
| 3           | Jane       | Johnson   | IT         | 62700  | 5/20/2019  |

6 rows returned in 0.00 seconds [Download](#)

15. Update the DEPARTMENT of employees earning more than 60000 to 'Management'.

QUERY CODE : UPDATE EMPLOYEES\_A SET DEPARTMENT = 'Management' WHERE salary > 60000

24SOECE11049

### Database Management System

3 row(s) updated.

0.01 seconds

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | JOHN       | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | Management | 100000 | 1/16/2023  |
| 6           | CHARLIE    | Brown     | Management | 67925  | 11/30/2018 |
| 3           | Jane       | Johnson   | Management | 62700  | 5/20/2019  |

16. Increase the salary of employees in the 'Sales' department by 7%.

QUERY CODE : UPDATE EMPLOYEES\_A SET SALARY = SALARY + (SALARY \* 0.07)  
WHERE DEPARTMENT = 'Sales'

0 row(s) updated.

0.01 seconds

17. Update the FIRST\_NAME of employee ID 2 to 'Jonathan'.

QUERY CODE : UPDATE EMPLOYEES\_A SET FIRST\_NAME = 'Jonathan' WHERE  
EMPLOYEE\_ID = 2

3 row(s) updated.

0.01 seconds

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | Jonathan   | DOE       | HR         | 50000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | Management | 100000 | 1/16/2023  |
| 6           | CHARLIE    | Brown     | Management | 67925  | 11/30/2018 |
| 3           | Jane       | Johnson   | Management | 62700  | 5/20/2019  |

18. Set the salary of employees in the 'HR' department to 55000.

24SOECE11049

### Database Management System

QUERY CODE : UPDATE EMPLOYEES\_A SET SALARY = 55000 WHERE DEPARTMENT = 'HR'

```
3 row(s) updated.
0.01 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | Jonathan   | DOE       | HR         | 55000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 55000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 48000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | Management | 100000 | 1/16/2023  |
| 6           | CHARLIE    | Brown     | Management | 67925  | 11/30/2018 |
| 3           | Jane       | Johnson   | Management | 62700  | 5/20/2019  |

6 rows returned in 0.00 seconds. [Download](#)

19. Update all employees' salaries by adding a BONUS of 5000 if they exist in the table.

QUERY CODE : UPDATE EMPLOYEES\_A SET SALARY = SALARY + 5000

```
6 row(s) updated.
0.01 seconds
```

| EMPLOYEE_ID | FIRST_NAME | LAST_NAME | DEPARTMENT | SALARY | HIRE_DATE  |
|-------------|------------|-----------|------------|--------|------------|
| 2           | Jonathan   | DOE       | HR         | 60000  | 1/15/2020  |
| 4           | Bob        | Johnson   | Marketing  | 60000  | 2/10/2021  |
| 5           | Alice      | Williams  | Marketing  | 53000  | 4/5/2022   |
| 1           | PETER      | WRANGLE   | Management | 105000 | 1/16/2023  |
| 6           | CHARLIE    | Brown     | Management | 72925  | 11/30/2018 |
| 3           | Jane       | Johnson   | Management | 67700  | 5/20/2019  |