

EXERCISE-4

Writing Basic SQL SELECT Statements

Employee table:

```
CREATE TABLE Employees (  
    Employee_id NUMBER(6) NOT NULL,  
    First_Name VARCHAR(20),  
    Last_Name VARCHAR(25) NOT NULL,  
    Email VARCHAR(25) NOT NULL,  
    Phone_Number VARCHAR(20),  
    Hire_date DATE NOT NULL,  
    Job_id VARCHAR(10) NOT NULL,  
    Salary NUMBER(8,2),  
    Commission_pct NUMBER(2,2),  
    Manager_id NUMBER(6),  
    Department_id NUMBER(4),  
    PRIMARY KEY (Employee_id)  
);
```

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
EMPLOYEES	EMPLOYEE_ID	NUMBER	-	6	0	1	-	-	-
	FIRST_NAME	VARCHAR2	20	-	-	-	✓✓	-	-
	LAST_NAME	VARCHAR2	25	-	-	-	-	-	-
	EMAIL	VARCHAR2	25	-	-	-	-	-	-
	PHONE_NUMBER	VARCHAR2	20	-	-	-	✓✓	-	-
	HIRE_DATE	DATE	7	-	-	-	-	-	-
	JOB_ID	VARCHAR2	10	-	-	-	-	-	-
	SALARY	NUMBER	-	8	2	-	✓✓	-	-
	COMMISSION_PCT	NUMBER	-	2	2	-	✓✓	-	-
	MANAGER_ID	NUMBER	-	6	0	-	✓✓	-	-
	DEPARTMENT_ID	NUMBER	-	4	0	-	✓✓	-	-

Department Table

```
CREATE TABLE Departments ( Dept_id NUMBER(6) NOT NULL, Dept_name VARCHAR(20) NOT NULL,  
Manager_id NUMBER(6), Location_id NUMBER(4), PRIMARY KEY (Dept_id), FOREIGN KEY (Manager_id)  
REFERENCES Employees(Employee_id) );
```

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPARTMENTS	DEPT_ID	NUMBER	-	6	0	1	-	-	-
	DEPT_NAME	VARCHAR2	20	-	-	-	-	-	-
	MANAGER_ID	NUMBER	-	6	0	-	✓✓	-	-
	LOCATION_ID	NUMBER	-	4	0	-	✓✓	-	-

Find the Solution for the following:

1. The following statement executes successfully.

Identify the Errors

```
SELECT employee_id, last_name  
sal*12 ANNUAL SALARY  
FROM employees;
```

Queries

```
SELECT employee_id, last_name  
sal*12 as "ANNUAL SALARY"  
FROM employees;
```



Error at line 2/7: ORA-00923: FROM keyword not found where expected

2. Show the structure of departments the table. Select all the data from it.

Describe Departments;

Table	Column	Data Type	Length	Precision	Scale	Primary Key	Nullable	Default	Comment
DEPARTMENTS	DEPT_ID	NUMBER	-	6	0	1	-	-	-
	DEPT_NAME	VARCHAR2	20	-	-	-	-	-	-
	MANAGER_ID	NUMBER	-	6	0	-	✓	-	-
	LOCATION_ID	NUMBER	-	4	0	-	✓	-	-

Select * from departments;

DEPT_ID	DEPT_NAME	MANAGER_ID	LOCATION_ID
40	HR	1003	104
10	IT	1001	101
30	Sales	1005	103
20	Administration	1004	102

3. Create a query to display the last name, job code, hire date, and employee number for each employee, with employee number appearing first.

```
SELECT employee_id AS "Employee Number",  
       last_name AS "Last Name",  
       job_id AS "Job Code",  
       hire_date AS "Hire Date"  
FROM employees;
```

Employee Number	Last Name	Job Code	Hire Date
1001	Doe	IT_PROG	01/15/2024
1003	Johnson	HR_REP	03/10/2024
1004	Williams	ADMIN	04/05/2024
1002	Smith	SA_REP	02/20/2024
1005	Brown	SA_MAN	05/12/2024

4. Provide an alias STARTDATE for the hire date.

```
SELECT employee_id,  
       last_name,  
       job_id,  
       hire_date AS "STARTDATE"  
FROM employees;
```

EMPLOYEE_ID	LAST_NAME	JOB_ID	STARTDATE
1001	Doe	IT_PROG	01/15/2024
1003	Johnson	HR_REP	03/10/2024
1004	Williams	ADMIN	04/05/2024
1002	Smith	SA_REP	02/20/2024
1005	Brown	SA_MAN	05/12/2024

5. Create a query to display unique job codes from the employee table.

```
SELECT DISTINCT job_id
FROM employees;
```

JOB_ID
HR_REP
ADMIN
IT_PROG
SA_MAN
SA_REP

6. Display the last name concatenated with the job ID , separated by a comma and space, and name the column EMPLOYEE and TITLE.

```
SELECT last_name || ', ' || job_id AS "EMPLOYEE, TITLE"
FROM employees;
```

EMPLOYEE, TITLE
Doe, IT_PROG
Johnson, HR_REP
Williams, ADMIN
Smith, SA_REP
Brown, SA_MAN

7. Create a query to display all the data from the employees table. Separate each column by a comma. Name the column THE_OUTPUT.

```
SELECT employee_id || ', ' || first_name || ', ' || last_name || ', ' || email || ', ' || phone_number || ', ' || hire_date || ', ' || job_id AS "THE_OUTPUT"
FROM employees;
```

THE_OUTPUT
1001, John, Doe, john.doe@example.com, 123-456-7890, 01/15/2024, IT_PROG
1003, Michael, Johnson, m.johnson@example.com, 111-222-3333, 03/10/2024, HR_REP
1004, Emily, Williams, e.williams@example.com, 444-555-6666, 04/05/2024, ADMIN
1002, Jane, Smith, jane.smith@example.com, 987-654-3210, 02/20/2024, SA_REP
1005, David, Brown, d.brown@example.com, 777-888-9999, 05/12/2024, SA_MAN

