EXERCISE-4

Writing Basic SQL SELECT Statements

OBJECTIVES

After the completion of this exercise, the students will be able to do the following:

- List the capabilities of SQL SELECT Statement
- Execute a basic SELECT statement

Capabilities of SQL SELECT statement

A SELECT statement retrieves information from the database. Using a select statement, we can perform

✓ Projection: To choose the columns in a table

✓ Selection: To choose the rows in a table

✓ Joining: To bring together the data that is stored in different tables

Basic SELECT Statement

Syntax

```
    SELECT*|DISTINCT Column_ name| alias
``  FROM table_name;
```

NOTE:

DISTINCT—Suppr
ess the duplicates.
Alias—givesselectedcolumns different headings.

Example: 1

SELECT*FROMdepartments;

Example: 2

SELECTlocation_id,department_id FROM departments;

Writing SQL Statements

- SQL statements are not case sensitive
- SQL statements can be on one or more lines.
- Keywords cannot be abbreviated or split across lines
- Clauses are usually placed on separate lines
- Indents are sued to enhance readability

Using Arithmetic Expressions

BasicArithmetic operators like *, /, +, -can be used

Example:1

```
    SELECT last_name, salary, salary+300 FROM employees;
```

Example:2

SELECT last_name, salary, 12*salary+100 FROM employees;

The statement is not same as

Example:3 SELECT last_name, job_id, salary, commission_pct FROM employees;

Example:4 SELECT last_name, job_id, salary, 12*salary*commission_pct FROM employees; **Using Column Alias**

- To rename a column heading with or without AS keyword.

Example:1

```
SELECT last_name AS Name
FROM employees;
```

Example: 2

```
SELECT last_name “Name” salary*12 “Annual Salary “
FROM employees;
```

Concatenation Operator

- Concatenates columns or character strings to other columns
- Represented by two vertical bars (||)
- Creates a resultant column that is a character expression

Example:

```
SELECT last_name||job_id AS “EMPLOYEES JOB” FROM employees;
```

Using Literal Character String

- A literal is a character, a number, or a date included in the SELECT list.
- Date and character literal values must be enclosed within single quotation marks.

Example:

```
SELECT last_name||’is a’||job_id AS “EMPLOYEES JOB” FROM employees;
```

~~**Eliminating Duplicate Rows**~~

- Using DISTINCT keyword.

Example:

```
SELECT DISTINCT deparment_id FROM employees;
```

Displaying Table Structure

- Using DESC keyword.

~~**Syntax**~~

```
DESC table_name;
```

Example:

```
DESC employees;
```

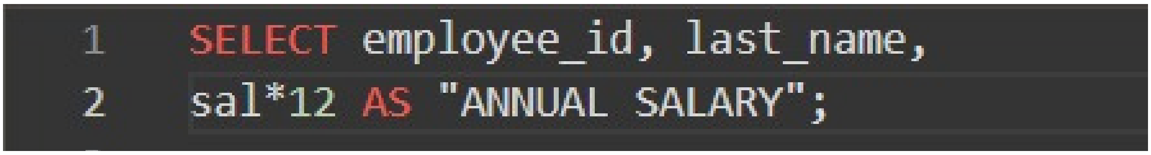
Find the Solutionforthefollowing:

1. The following statement executes successfully.

True OR False

Identify the Errors

```
    SELECT employee_id, last_name
```



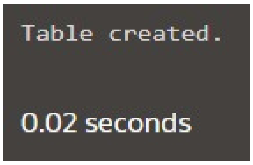
```
SELECT employee_id, last_name,
sal*12 AS "ANNUAL SALARY";
```

FROM employees;

Queries

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

```
CREATE TABLE DEPARTMENTS(
   Dept_id  Number(6),
   Dept_name Varchar(20),
   Manager_id Number(6),
   Location_id Number(4)
);
```

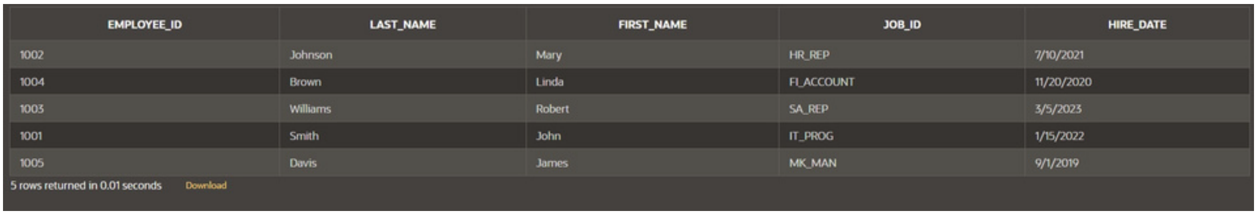


```
Table created.

0.02 seconds
```

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,last_name,first_name,job_id,hire_date FROM EMPLOYEE;
```

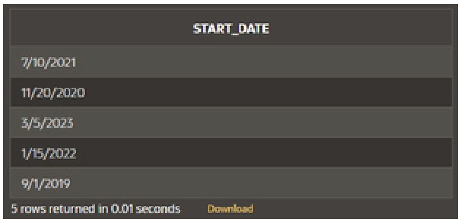


EMPLOYEE_ID	LAST_NAME	FIRST_NAME	JOB_ID	HIRE_DATE
1002	Johnson	Mary	HR_REP	7/10/2021
1004	Brown	Linda	FI_ACCOUNT	11/20/2020
1003	Williams	Robert	SA_REP	3/5/2023
1001	Smith	John	IT_PROG	1/15/2022
1005	Davis	James	MK_MAN	9/1/2019

5 rows returned in 0.01 seconds Download

4. Provide an alias STARTDATE for the hire date.

```
SELECT hire_date AS "START_DATE"
FROM EMPLOYEE;
```

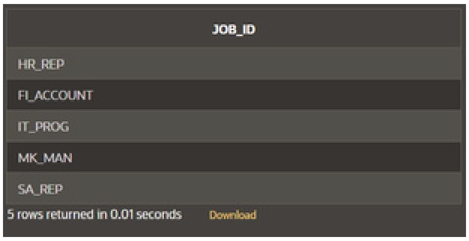


START_DATE
7/10/2021
11/20/2020
3/5/2023
1/15/2022
9/1/2019

5 rows returned in 0.01 seconds Download

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

```
SELECT UNIQUE job_id
FROM EMPLOYEE;
```

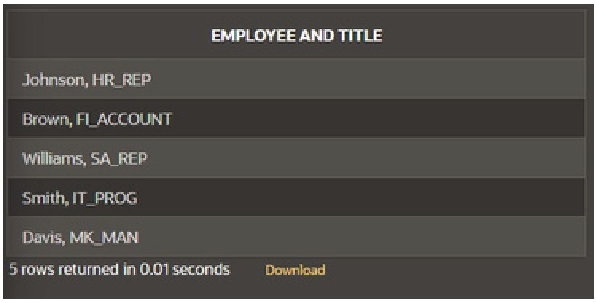


JOB_ID
HR_REP
FI_ACCOUNT
IT_PROG
MK_MAN
SA_REP

5 rows returned in 0.01 seconds Download

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 AND TITLE"
FROM EMPLOYEE;
```

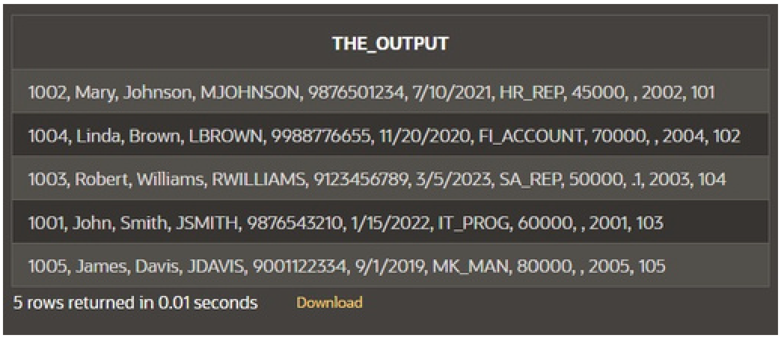


EMPLOYEE AND TITLE
Johnson, HR_REP
Brown, FI_ACCOUNT
Williams, SA_REP
Smith, IT_PROG
Davis, MK_MAN

5 rows returned in 0.01 seconds

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 || ', '||
 SALARY || ', '||
 COMMISSION_PCT || ', '||
 MANAGER_ID || ', '||
 DEPARTMENT_ID AS "THE_OUTPUT"
 from EMPLOYEE;
```



THE_OUTPUT
1002, Mary, Johnson, MJOHNSON, 9876501234, 7/10/2021, HR_REP, 45000, , 2002, 101
1004, Linda, Brown, LBROWN, 9988776655, 11/20/2020, FI_ACCOUNT, 70000, , 2004, 102
1003, Robert, Williams, RWILLIAMS, 9123456789, 3/5/2023, SA_REP, 50000, .1, 2003, 104
1001, John, Smith, JSMITH, 9876543210, 1/15/2022, IT_PROG, 60000, , 2001, 103
1005, James, Davis, JDAVIS, 9001122334, 9/1/2019, MK_MAN, 80000, , 2005, 105

5 rows returned in 0.01 seconds

Evaluation Procedure	Marks awarded
Query(5)	
Execution (5)	
Viva(5)	
Total (15)	
Faculty Signature	