NAME: MOAZZAM FAROOQUI
ROLL NO: CT-24068
COURSE CODE: CT-261
INSTRUCTOR: SIR ROHAIL QAMAR
TASK: DBMS LAB#01

Q1. The following SELECT statement executes successfully: SELECT last_name, job_id, salary AS Sal FROM employees;
True/False

ANSWER:
True

Q2. The following SELECT statement executes successfully: SELECT * FROM job_grades;
True/False

ANSWER:
True

Q3. There are four coding errors in this statement. Can you identify them? SELECT employee_id, last_name sal x 12 ANNUAL SALARY FROM employees;

ANSWER:

1. **The syntax is wrong of sal x 12 it should be sal*12.**
2. **No use of aliases there should be AS before ANNUAL SALARY.**
3. **ANNUAL SALARY should be in double quotation marks since there is a space and when there is space it is necessary to use double quotation marks. It should be AS "ANNUAL SALARY".**
4. **There should be a comma(,) after last_name you cannot directly write last_name sal as it is wrong SQL does not allow that.**

Q4. Show the structure of the DEPARTMENTS table. Select all data from the table.

SQL QUERY:

```
1    DESC HR.DEPARTMENTS;
2    SELECT * FROM HR.DEPARTMENTS;
3
4
5
6
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

```
SQL> DESC HR.DEPARTMENTS

Name            Null?    Type
--------------- -------- ------------
DEPARTMENT_ID   NOT NULL NUMBER(4)
DEPARTMENT_NAME NOT NULL VARCHAR2(30)
MANAGER_ID               NUMBER(6)
LOCATION_ID              NUMBER(4)
```

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.002 seconds

	DEPARTMENT_ID	DEPARTMENT_NAM	MANAGER_ID	LOCATION_ID
1	10	Administration	200	1700
2	20	Marketing	201	1800
3	30	Purchasing	114	1700
4	40	Human Resources	203	2400
5	50	Shipping	121	1500
6	60	IT	103	1400
7	70	Public Relations	204	2700
8	80	Sales	145	2500

Q5. Show the structure of the EMPLOYEES table. Create a query to display the last name, job code, hire date, and employee number for each employee, with employee number appearing first.

SQL QUERY:

```
1    DESC HR.EMPLOYEES;
2    SELECT PHONE_NUMBER,LAST_NAME,JOB_ID,HIRE_DATE FROM HR.EMPLOYEES;
3
4
5
6
```

OUTPUT:

```
EMPLOYEE_ID     NOT NULL NUMBER(6)
FIRST_NAME               VARCHAR2(20)
LAST_NAME       NOT NULL VARCHAR2(25)
EMAIL           NOT NULL VARCHAR2(25)
PHONE_NUMBER             VARCHAR2(20)
HIRE_DATE       NOT NULL DATE
JOB_ID          NOT NULL VARCHAR2(10)
SALARY                   NUMBER(8,2)
COMMISSION_PCT           NUMBER(2,2)
MANAGER_ID               NUMBER(6)
DEPARTMENT_ID            NUMBER(4)
```

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.001 seconds

	PHONE_NUMBER	LAST_NAME	JOB_ID	HIRE_DATE
1	1.515.555.0100	King	AD_PRES	6/17/2013, 12:00:00
2	1.515.555.0101	Yang	AD_VP	9/21/2015, 12:00:00
3	1.515.555.0102	Garcia	AD_VP	1/13/2011, 12:00:00
4	1.590.555.0103	James	IT_PROG	1/3/2016, 12:00:00 A
5	1.590.555.0104	Miller	IT_PROG	5/21/2017, 12:00:00
6	1.590.555.0105	Williams	IT_PROG	6/25/2015, 12:00:00
7	1.590.555.0106	Jackson	IT_PROG	2/5/2016, 12:00:00 A
8	1.590.555.0107	Nguyen	IT_PROG	2/7/2017, 12:00:00 A

Q6. Create a query to display unique job codes from the EMPLOYEES table.

SQL QUERY:

```
1    SELECT DISTINCT JOB_ID FROM HR.EMPLOYEES;
2
3
4
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.005 seconds

	JOB_ID
1	AC_ACCOUNT
2	AC_MGR
3	AD_ASST
4	AD_PRES
5	AD_VP
6	FI_ACCOUNT
7	FI_MGR
8	HR_REP
9	IT_PROG
10	MK_MAN
11	MK_REP
12	PR_REP
13	PU_CLERK
14	PU_MAN
15	SA_MAN
16	SA_REP
17	SH_CLERK
18	ST_CLERK
19	ST_MAN

Q7. Name the column headings Emp #, Employee, Job, and Hire Date, respectively. Run your query again.

SQL QUERY:

```
1    SELECT EMPLOYEE_ID AS "EMP#",
2    LAST_NAME AS "EMPLOYEE",
3    JOB_ID AS "JOB",
4    HIRE_DATE AS "HIRE DATE"
5    FROM HR.EMPLOYEES;
6
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.002 seconds

	EMP#	EMPLOYEE	JOB	HIRE DATE
1	100	King	AD_PRES	6/17/2013, 12:00:00
2	101	Yang	AD_VP	9/21/2015, 12:00:00
3	102	Garcia	AD_VP	1/13/2011, 12:00:00
4	103	James	IT_PROG	1/3/2016, 12:00:00 A
5	104	Miller	IT_PROG	5/21/2017, 12:00:00
6	105	Williams	IT_PROG	6/25/2015, 12:00:00
7	106	Jackson	IT_PROG	2/5/2016, 12:00:00 A
8	107	Nguyen	IT_PROG	2/7/2017, 12:00:00 A

Q8. Display the last name concatenated with the job ID, separated by a comma and space, and name the column Employee and Title.

SQL QUERY:

```
1    SELECT LAST_NAME || ', ' || JOB_ID AS "Employee and Title"
2    FROM HR.EMPLOYEES;
3
4
5
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.008 seconds

	EMPLOYEE AND TITLE
1	Abel, SA_REP
2	Ande, SA_REP
3	Atkinson, ST_CLERK
4	Baida, PU_CLERK
5	Banda, SA_REP
6	Bates, SA_REP
7	Bell, SH_CLERK
8	Bernstein, SA_REP

Q9. Create a query to display all the data from the EMPLOYEES table. Separate each column by a comma. Name the column THE_OUTPUT.

SQL QUERY:

```
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 HR.EMPLOYEES;
```

OUTPUT:

Query result | Script output | DBMS output | Explain Plan | SQL history

Download | Execution time: 0.003 seconds

	THE_OUTPUT
1	100,Steven,King,SKING,1.515.555.0100,17-JUN-13,AD_PRES,24000,,,90
2	101,Neena,Yang,NYANG,1.515.555.0101,21-SEP-15,AD_VP,17000,,100,90
3	102,Lex,Garcia,LGARCIA,1.515.555.0102,13-JAN-11,AD_VP,17000,,100,90
4	103,Alexander,James,AJAMES,1.590.555.0103,03-JAN-16,IT_PROG,9000,,102,60
5	104,Bruce,Miller,BMILLER,1.590.555.0104,21-MAY-17,IT_PROG,6000,,103,60
6	105,David,Williams,DWILLIAMS,1.590.555.0105,25-JUN-15,IT_PROG,4800,,103,60
7	106,Valli,Jackson,VJACKSON,1.590.555.0106,05-FEB-16,IT_PROG,4800,,103,60