LAB-1
Assignment

Prepared by:

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Lab Task # 01 (Creating a table):

1.(a). Write SQL statement to create a table '**instructor_your_student_id**' which has 4 attributes
i) id (number)
ii) name (text)
iii) dept_name (text)
iv) salary (number)

```
CREATE TABLE INSTRUCTOR_2022360007(
    ID NUMBER,
    NAME VARCHAR2(30),
    DEPT_NAME VARCHAR2(30),
    SALARY NUMBER
);
```

1.(b). Write SQL statement to create a table '**course_your_student_id**' which has 4 attributes
– i) course_id (text)
ii) title (text)
iii) dept_name (text)
iv) credits (number)

```
CREATE TABLE COURSE_2022360007(
    COURSE_ID VARCHAR2(10),
    TITLE VARCHAR2(30),
    DEPT_NAME VARCHAR2(20),
    CREDITS NUMBER
);
```

Lab Task # 02 (Inserting data into a table):

2.(a). Write SQL statements to insert following records into '**instructor_your_student_id**' table:

ID	name	dept_name	salary
10101	Srinivasan	Comp. Sci.	65000
12121	Wu	Finance	90000
15151	Mozart	Music	40000
22222	Einstein	Physics	95000
32343	El Said	History	60000
33456	Gold	Physics	87000
45565	Katz	Comp. Sci.	75000
58583	Califieri	History	62000
76543	Singh	Finance	80000
76766	Crick	Biology	72000
83821	Brandt	Comp. Sci.	92000
98345	Kim	Elec. Eng.	80000

SQL Queries:

```sql
INSERT INTO INSTRUCTOR_2022360007 VALUES(10101,'Srinivasan','Comp. Sci.',65000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(12121,'Wu','Finance',90000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(15151,'Mozart','Music',40000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(22222,'Einstein','Physics',95000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(32343,'EI Said','History',60000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(33456,'Gold','Physics',87000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(45565,'Katz','Comp. Sci.',75000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(58583,'Califieri','History',62000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(76543,'Singh','Finance',80000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(76766,'Crick','Biology',72000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(83821,'Brandt','Comp. Sci.',80000);
INSERT INTO INSTRUCTOR_2022360007 VALUES(98345,'Kim','Elec. Eng.',80000);
```

Output:

	ID	NAME	DEPT_NAME	SALARY
1	10101	Srinivasan	Comp. Sci.	65000
2	12121	Wu	Finance	90000
3	15151	Mozart	Music	40000
4	22222	Einstein	Physics	95000
5	32343	EI Said	History	60000
6	33456	Gold	Physics	87000
7	45565	Katz	Comp. Sci.	75000
8	58583	Califieri	History	62000
9	76543	Singh	Finance	80000
10	76766	Crick	Biology	72000
11	83821	Brandt	Comp. Sci.	80000
12	98345	Kim	Elec. Eng.	80000

2.(b). Write SQL statements to insert the following records into 'course_your_student_id' table:

course_id	title	dept_name	credits
BIO-101	Intro. to Biology	Biology	4
BIO-301	Genetics	Biology	4
BIO-399	Computational Biology	Biology	3
CS-101	Intro. to Computer Science	Comp. Sci.	4
CS-190	Game Design	Comp. Sci.	4
CS-315	Robotics	Comp. Sci.	3
CS-319	Image Processing	Comp. Sci.	3
CS-347	Database System Concepts	Comp. Sci.	3
EE-181	Intro. to Digital Systems	Elec. Eng.	3
FIN-201	Investment Banking	Finance	3
HIS-351	World History	History	3
MU-199	Music Video Production	Music	3
PHY-101	Physical Principles	Physics	4

SQL Queries:

```sql
INSERT ALL
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('BIO-101', 'Intro. to Biology', 'Biology', 4)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('BIO-301', 'Genetics', 'Biology', 4)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('BIO-399', 'Computational Biology', 'Biology', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('CS-101', 'Intro. to Computer Science', 'Comp. Sci.', 4)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('CS-190', 'Game Design', 'Comp. Sci.', 4)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('CS-315', 'Robotics', 'Comp. Sci.', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('CS-319', 'Image Processing', 'Comp. Sci.', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('CS-347', 'Database System Concepts', 'Comp. Sci.', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('EE-181', 'Intro. to Digital Systems', 'Elec. Eng.', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('FIN-201', 'Investment Banking', 'Finance', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('HIS-351', 'World History', 'History', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('MU-199', 'Music Video Production', 'Music', 3)
    INTO COURSE_2022360007 (COURSE_ID, TITLE, DEPT_NAME, CREDITS) VALUES ('PHY-101', 'Physical Principles', 'Physics', 4)
SELECT * FROM dual;
```

Output:

	COURSE_ID	TITLE	DEPT_NAME	CREDITS
1	BIO-101	Intro. to Biology	Biology	4
2	BIO-301	Genetics	Biology	4
3	BIO-399	Computational Biology	Biology	3
4	CS-101	Intro. to Computer Science	Comp. Sci.	4
5	CS-190	Game Design	Comp. Sci.	4
6	CS-315	Robotics	Comp. Sci.	3
7	CS-319	Image Processing	Comp. Sci.	3
8	CS-347	Database System Concepts	Comp. Sci.	3
9	EE-181	Intro. to Digital Systems	Elec. Eng.	3
10	FIN-201	Investment Banking	Finance	3
11	HIS-351	World History	History	3
12	MU-199	Music Video Production	Music	3
13	PHY-101	Physical Principles	Physics	4

Lab Task # 03 (Writing Queries):

I. Show instructor name only.

Queries:

Output:

```
-- I. Show instructor name only.


SELECT NAME FROM INSTRUCTOR_2022360007;
```

	NAME
1	Srinivasan
2	Wu
3	Mozart
4	Einstein
5	EI Said
6	Gold
7	Katz
8	Califieri
9	Singh
10	Crick
11	Brandt
12	Kim

II. Show course id and title only.

Queries:

Output:

```
-- II. Show course id and title only.
SELECT COURSE_ID, TITLE FROM COURSE_2022360007;
```

	COURSE_ID	TITLE
1	BIO-101	Intro. to Biology
2	BIO-301	Genetics
3	BIO-399	Computational Biology
4	CS-101	Intro. to Computer Science
5	CS-190	Game Design
6	CS-315	Robotics
7	CS-319	Image Processing
8	CS-347	Database System Concepts
9	EE-181	Intro. to Digital Systems
10	FIN-201	Investment Banking
11	HIS-351	World History
12	MU-199	Music Video Production
13	PHY-101	Physical Principles

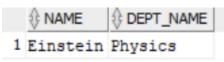## III. Find instructor name and department of the instructor with id = 22222.

Queries: **Output:**

```
--III. Find instructor name and department of the instructor with id = 22222.
SELECT NAME, DEPT_NAME FROM INSTRUCTOR_2022360007
    WHERE ID = 22222;
```

	NAME	DEPT_NAME
1	Einstein	Physics

IV. Find course title and credits of the courses offered by 'Comp. Sci.' department.

Queries: Output:

```
--IV. Find course title and credits of the courses offered by 'Comp. Sci.' department.
SELECT TITLE ,CREDITS FROM COURSE_2022360007
    WHERE DEPT_NAME = 'Comp. Sci.';
```

	TITLE	CREDITS
1	Intro. to Computer Science	4
2	Game Design	4
3	Robotics	3
4	Image Processing	3
5	Database System Concepts	3

V. Find name and department of instructors who have a salary more than 70000.

Queries: Output:

```
--V. Find name and department of instructors who h
SELECT NAME, DEPT_NAME FROM INSTRUCTOR_2022360007
    WHERE SALARY > 70000;
```

	NAME	DEPT_NAME
1	Wu	Finance
2	Einstein	Physics
3	Gold	Physics
4	Katz	Comp. Sci.
5	Singh	Finance
6	Crick	Biology
7	Brandt	Comp. Sci.
8	Kim	Elec. Eng.

VI. Find the course title of the courses which are not less than 4 credits.

Queries: Output:

```
SELECT TITLE FROM COURSE_2022360007
    WHERE CREDITS >= 4
```

	TITLE
1	Intro. to Biology
2	Genetics
3	Intro. to Computer Science
4	Game Design
5	Physical Principles

VII. Find name and department of instructors who have a salary in between 80000 and 100000 (bounds are inclusive).

Queries:

Output:

```
SELECT NAME, DEPT_NAME FROM INSTRUCTOR_2022360007
    WHERE Salary BETWEEN 80000 AND 100000;
```

	NAME	DEPT_NAME
1	Wu	Finance
2	Einstein	Physics
3	Gold	Physics
4	Singh	Finance
5	Brandt	Comp. Sci.
6	Kim	Elec. Eng.

VIII. Find course titles and credits of the courses not offered by 'Comp. Sci.' department.

Queries:

Output

```
SELECT TITLE, CREDITS FROM COURSE_2022360007
    WHERE DEPT_NAME != 'Comp. Sci.';
```

	TITLE	CREDITS
1	Intro. to Biology	4
2	Genetics	4
3	Computational Biology	3
4	Intro. to Digital Systems	3
5	Investment Banking	3
6	World History	3
7	Music Video Production	3
8	Physical Principles	4

IX. Display all records of the instructor table.

Queries:

Output:

```
-- IX. Display all records of instructor table.
SELECT * FROM INSTRUCTOR_2022360007;
```

	ID	NAME	DEPT_NAME	SALARY
1	10101	Srinivasan	Comp. Sci.	65000
2	12121	Wu	Finance	90000
3	15151	Mozart	Music	40000
4	22222	Einstein	Physics	95000
5	32343	EI Said	History	60000
6	33456	Gold	Physics	87000
7	45565	Katz	Comp. Sci.	75000
8	58583	Califieri	History	62000
9	76543	Singh	Finance	80000
10	76766	Crick	Biology	72000
11	83821	Brandt	Comp. Sci.	80000
12	98345	Kim	Elec. Eng.	80000

X. Find all courses (display all columns) which are offered by 'Biology' department and credits are not 4.

Queries: Output:

```
SELECT * FROM COURSE_2022360007
where DEPT_NAME = 'Biology' and CREDITS != 4
```

	COURSE_ID	TITLE	DEPT_NAME	CREDITS
1	BIO-399	Computational Biology	Biology	3