CENG364 – Database Applications
Assignment 1 (Due: Wed. Nov. 4 at 23:59:59, SUBMIT TO LMS)

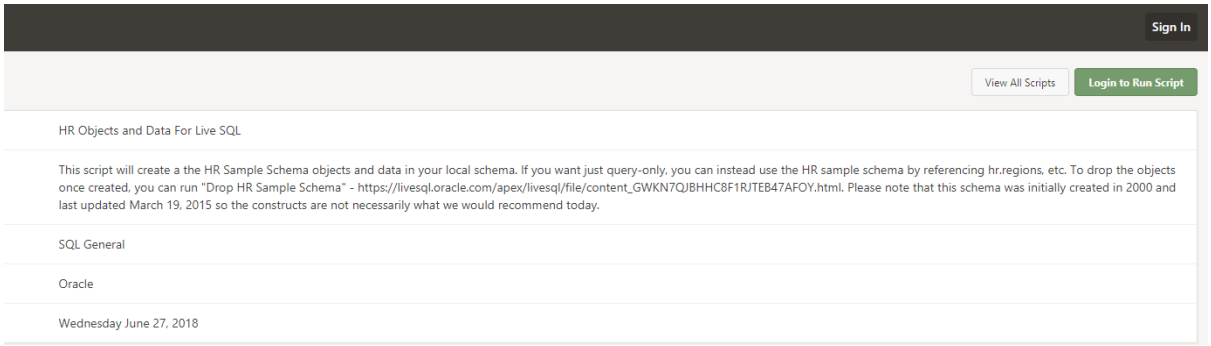
Notes:

- You must complete all assignments **on your own**.
- Plagiarism will not be tolerated. If detected, you may get a zero for the assignment.
- You can use either Oracle SQL Developer or ***Oracle Live SQL*** which is the platform that I recommend you to test your queries.
- Please follow the steps below to start using *Oracle Live SQL platform**.***

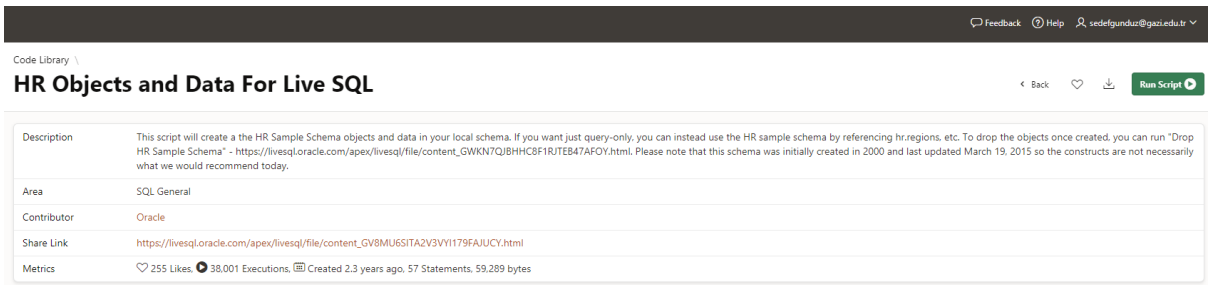
How to use *Oracle Live SQL*?

1. Go to the below link and then press the green “Login to Run Script” button:

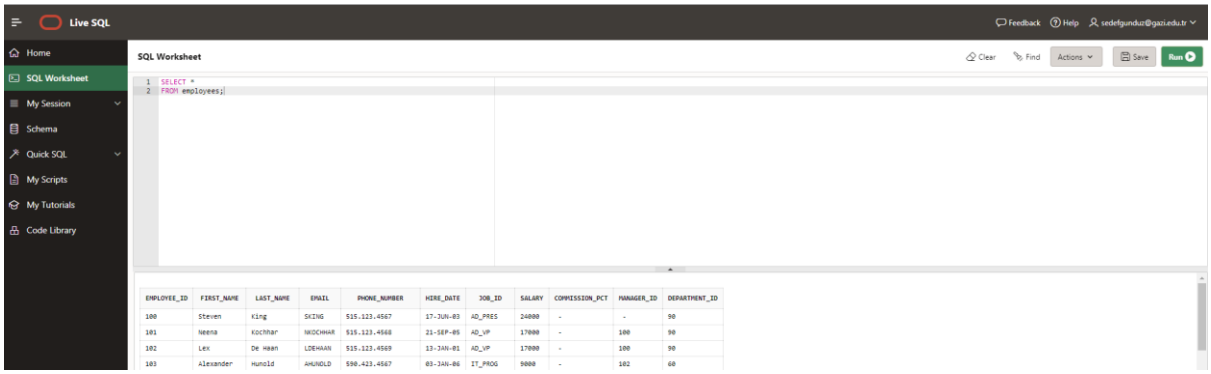
https://livesql.oracle.com/apex/livesql/file/content_GV8MU6SITA2V3VYI179FAJUCY.html



2. After completing all login processes (signing up or signing in) press the green “Run Script” button and run 57 statements in the script to create the HR Schema that you will work with:



3. After creating HR Schema, go to “SQL Worksheet” tab in the left-side menu, write your SQL query and press the green “Run” button to execute it. From now on, you can write your SQL statements and see the resultant tables:



Part 1 *(20 points)*

(Choose true or false for the first two questions)

1. The following `SELECT` statement executes successfully:

```
SELECT last_name, job_id, salary AS Sal
FROM employees;
```

Choose: True / False *(5 points)*

2. The following `SELECT` statement executes successfully:

```
SELECT *
FROM job_grades;
```

Choose: True / False *(5 points)*

3. There are four coding errors in the following statement. **Identify and list them.** *(10 points)*

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

Part 2 *(30 points)*

You have been hired as a SQL programmer for Acme Corporation. Your first task is to create some reports based on data from the Human Resources tables.

4. Your first task is to determine the **structure** of the `DEPARTMENTS` table and its **contents.** **Write the two statements necessary to do these.** *(10 points)*
Outputs will look like this:

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

DEPARTMENT_ID	DEPARTMENT_NAME	MANAGER_ID	LOCATION_ID
10	Administration	200	1700
20	Marketing	201	1800
30	Purchasing	114	1700
40	Human Resources	203	2400
50	Shipping	121	1500
60	IT	103	1400
70	Public Relations	204	2700
80	Sales	145	2500
90	Executive	100	1700
100	Finance	108	1700
110	Accounting	205	1700
120	Treasury	-	1700
130	Corporate Tax	-	1700

(Note: There may be some minor differences in data content in the resultant table due to the versions of the HR Schema.)

5. Write a statement to determine the structure of the `EMPLOYEES` table. *(5 points)*
The output will look like this:

```
Name                          Null     Type
----------------------------- -------- ------------
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)
```

6. The HR department wants a query to display the last name, job ID, hiredate, and employee ID for each employee, with the employee ID appearing first. Provide an alias `STARTDATE` for the `HIRE_DATE` column. **Write the necessary query statement.** *(10 points)*

7. Write a query statement to display all unique job IDs from the `EMPLOYEES` table. *(5 points)*

Part 3 *(20 points)*

8. The HR department wants more descriptive column headings for its report on employees. **Modify your statement from Question 6 so that the column headings will be `Emp #`, `Employee`, `Job`, and `Hire Date`, respectively.** *(10 points)*

9. The HR department has requested a report of all employees and their job IDs. **Write a query statement to display the last name concatenated with the job ID (separated by a comma and space) and name the column `"Employee and Title"`.** (10 points)

Example output: (There may be some minor differences in data content in the resultant table due to the versions of the HR Schema.)

	Employee and Title
1	Abel, SA_REP
2	Davies, ST_CLERK
3	De Haan, AD_VP
4	Ernst, IT_PROG
5	Fay, MK_REP

...

Part 4 *(30 points)*

10. The HR department needs to find high-salary and low-salary employees. **Write a query statement to display the last name and salary for all employees whose salary is NOT in the range $5,000 -- $12,000.** *(10 points)*

Example output: (There may be some minor differences in data content in the resultant table due to the versions of the HR Schema.)

	LAST_NAME	SALARY
1	Whalen	4400
2	Hartstein	13000
3	King	24000
4	Kochhar	17000
5	De Haan	17000
6	Lorentz	4200
7	Rajs	3500
8	Davies	3100
9	Matos	2600
10	Vargas	2500

11. Modify your statement from Question 10 to display the last name and salary of employees who earn between $5,000 and $12,000, and are in department 20 or 50. Label the columns `Employee` and `Monthly Salary`, respectively. (10 points)

Example output: (There may be some minor differences in data content in the resultant table due to the versions of the HR Schema.)

	Employee	Monthly Salary
1	Fay	6000
2	Mourgos	5800

12. Write a query statement to display the last name and hire date of all employees who were hired in 2002. *(10 points)*