CIS 442

Week Three

Lab on basic stored procedure

Database Programming

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Contents

0.1 Create the Table

```
/*CIS442-WK3-Jason N Mansfield*/
/*This SQL simply creates the needed tables*/
DROP TABLE EMP;
DROP TABLE DEPT;
/*Create DEPT table*/

CREATE TABLE DEPT
(
  Dept_id int NOT NULL,
  Name varchar(50) NOT NULL,
  Location varchar(100) NOT NULL,
  CONSTRAINT pk_deptID PRIMARY KEY(Dept_id)
);
/*Create EMP Table*/
CREATE TABLE EMP
(
  EMP_id int NOT NULL,
  Name varchar(50) NOT NULL,
  Job varchar(50) NOT NULL,
  Manager varchar(50) NOT NULL,
  Hire_dt date,
  Salary numeric(8,2) NOT NULL,
  Commission numeric(6,2) NOT NULL,
  Dept_id int NOT NULL,
  CONSTRAINT pk_empID PRIMARY KEY(EMP_id)
);
```

bspcreate.sql

0.2 Insert rows

```
/*CIS442-WK3-Jason N Mansfield*/
/*This SQL simply fills the needed tables with the class assigned data*/
/*DELETE previous data and re-fill*/
DELETE FROM DEPT;
DELETE FROM EMP;
/*fill MIT related values for DEPT*/
INSERT INTO DEPT
(Dept_id,Name, Location)
VALUES(1, 'School of Architecture and Planning','Rogers Building');
INSERT INTO DEPT
(Dept_id, Name, Location)
VALUES(2, 'School of Engineering', 'Eastman Laboratories');
INSERT INTO DEPT
(Dept_id, Name, Location)
VALUES(3, 'School of Humanities, Arts and Social Sciences', 'Maclaurin Buildings');
INSERT INTO DEPT
(Dept_id, Name, Location)
VALUES(4, 'Sloan School of Management','MIT Sloan');
INSERT INTO DEPT
(Dept_id, Name, Location)
VALUES(5, 'School of Science','Herman Building');
/*fill professors info*/
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(1, 'Dr. Black', 'Assistant Professor of Architecture',
  'Dr. Red','01-JAN-10',800.00,0000.00,10);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(2, 'Dr. Red', 'Professor of Architecture', 'Dr. Green',
  '01-JAN-09',900.00,0000.00,10);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(3, 'Dr. Green', 'Associate Dean', 'Dr. Orange',
  '20-JUN-08',1000.00,0000.00,11);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(4, 'Dr. Orange', 'Dean', 'Dr. Pink',
  '01-MAY-07',700.00,0000.00,11);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(5, 'Dr. Pink', 'Assist Vice-Chancellor', 'Dr. Silver',
  '04-AUG-09',3000.00,0000.00,12);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(6, 'Dr. Silver', 'Associate Provost', 'Dr. Yellow',
  '23-JAN-89',3000.00,0000.00,12);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(7, 'Dr. Yellow', 'Provost', 'Dr. White',
  '20-FEB-85',3000.00,0000.00,12);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(8, 'Dr. White', 'Chancellor', 'Edward Ming',
  '01-JAN-80',1000.00,0000.00,13);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(9, 'Dr. Brown', 'Chancellor', 'Edward Ming',
  '30-APR-79',1000.00,0000.00,13);
INSERT INTO EMP
(EMP_id,Name,Job,Manager,Hire_dt,Salary,Commission,Dept_id)
VALUES(10, 'Dr. Entropy', 'Professor of Science', 'Dr. Yellow',
  '02-NOV-10',700.00,0000.00,10);
```

bspfill.sql

0.3 PL/SQL stored procedure

```
DECLARE
  v_name EMP.name%TYPE;
  v_salary EMP.Salary%Type;
  com EMP.Commission%Type;
  prompt INT;
  BEGIN
  prompt := 1;
  com := 0.0;
  SELECT name
  INTO v_name
  FROM EMP
  WHERE EMP_ID = prompt;
  DBMS_OUTPUT.PUT_LINE('Employee: ' || v_name);
  SELECT Salary
  INTO v_salary
  FROM EMP
  WHERE EMP_ID = prompt;
  DBMS_OUTPUT.PUT_LINE('Salary: ' || v_salary);
 /*Begin IF Statements*/
  IF v_salary < 1000 THEN
  com := v_salary * 0.10;
  DBMS_OUTPUT.PUT_LINE('Commision: ' || com);
  DBMS_OUTPUT.PUT_LINE('10% Commision');
ELSIF
  v_salary >= 1000 AND v_salary < 1500 THEN
  com := v_salary * 0.15;
  DBMS_OUTPUT.PUT_LINE('Commision: ' || com);
  DBMS_OUTPUT.PUT_LINE('15% Commision');
ELSIF
  v_salary > 1500 THEN
  com := v_salary * 0.20;
  DBMS_OUTPUT.PUT_LINE('Commision: ' || com);
  DBMS_OUTPUT.PUT_LINE('20% Commision');
ELSIF
  v_salary = 0 THEN
  DBMS_OUTPUT.PUT_LINE('0% Commision');
END IF;
/*End IF statements*/
UPDATE EMP
SET Commission=com
WHERE EMP_ID = prompt;
/*exception if ID is not found*/
  EXCEPTION
  WHEN NO_DATA_FOUND THEN
  DBMS_OUTPUT.PUT_LINE('Not a valid ID');
  END;
/
```

plscript.sql

0.4 SPOOL Output

The following series of employee ids were placed as the variable for prompt followed by running the plscript.sql file:

- 0 which is not a valid id so it simply uses the exception to finish without an error.
- 1 which is Dr. Black who makes 800.00
- 3 which is Dr. Green who makes 1000.00
- 6 which is Dr. Silver who makes 3000.00

View the spool output and you can see the calculated commissions being updated for all three individuals each time prompt is change and plscript is called. Notice that the first call to plscript is when an invalid employee id is offered. Therefore, no commissions are updated on the first run.

```
@\\Client\H$\Development\CIS442\CIS442-WK3-Lab\bspcreate.sql
Table dropped.

DROP TABLE DEPT
           *
ERROR at line 1:
ORA-00942: table or view does not exist


Table created.

CREATE TABLE DEPT
             *
ERROR at line 1:
ORA-00955: name is already used by an existing object



Table created.

SQL> @\\Client\H$\Development\CIS442\CIS442-WK3-Lab\bspfill.sql
CREATE TABLE EMP
             *
ERROR at line 1:
ORA-00955: name is already used by an existing object


CREATE TABLE EMP
             *
ERROR at line 1:
ORA-00955: name is already used by an existing object


CREATE TABLE EMP
             *
ERROR at line 1:
ORA-00955: name is already used by an existing object



0 rows deleted.


0 rows deleted.


0 rows deleted.

```

```
1 row created.


1 row created.


1 row created.


1 row created.


1 row created.

INSERT INTO DEPT
*
ERROR at line 1:
ORA-00001: unique constraint (CIS442FX70_08.PK_DEPTID) violated


1 row created.


1 row created.


1 row created.


1 row created.


1 row created.


1 row created.


1 row created.


1 row created.

SQL>
SQL> set PAGESIZE 180;
SQL>
SQL> set LINESIZE 264;
SQL> SELECT EMP_id, Name, Salary, Commission FROM EMP;

    EMP_ID NAME                                               SALARY COMMISSION
---------- -------------------------------------------------- ---------- ----------
         1 Dr. Black                                             800          0
         2 Dr. Red                                               900          0
         3 Dr. Green                                            1000          0
         4 Dr. Orange                                            700          0
         5 Dr. Pink                                             3000          0
         6 Dr. Silver                                           3000          0
         7 Dr. Yellow                                           3000          0
         8 Dr. White                                            1000          0
         9 Dr. Brown                                            1000          0
        10 Dr. Entropy                                           700          0

10 rows selected.

SQL> @\\Client\H$\Development\CIS442\CIS442-WK3-Lab\plscript.sql

PL/SQL procedure successfully completed.

SQL> SELECT EMP_id, Name, Salary, Commission FROM EMP;

    EMP_ID NAME                                               SALARY COMMISSION
---------- -------------------------------------------------- ---------- ----------
         1 Dr. Black                                             800          0
         2 Dr. Red                                               900          0
         3 Dr. Green                                            1000          0
```

```
         4 Dr. Orange                                            700          0
         5 Dr. Pink                                             3000          0
         6 Dr. Silver                                           3000          0
         7 Dr. Yellow                                           3000          0
         8 Dr. White                                            1000          0
         9 Dr. Brown                                            1000          0
        10 Dr. Entropy                                           700          0

10 rows selected.

SQL> @\\Client\H$\Development\CIS442\CIS442-WK3-Lab\plscript.sql

PL/SQL procedure successfully completed.

SQL> SELECT EMP_id, Name, Salary, Commission FROM EMP;

    EMP_ID NAME                                                SALARY COMMISSION
---------- -------------------------------------------------- ---------- ----------
         1 Dr. Black                                             800         80
         2 Dr. Red                                               900          0
         3 Dr. Green                                            1000          0
         4 Dr. Orange                                            700          0
         5 Dr. Pink                                             3000          0
         6 Dr. Silver                                           3000          0
         7 Dr. Yellow                                           3000          0
         8 Dr. White                                            1000          0
         9 Dr. Brown                                            1000          0
        10 Dr. Entropy                                           700          0

10 rows selected.

SQL> @\\Client\H$\Development\CIS442\CIS442-WK3-Lab\plscript.sql

PL/SQL procedure successfully completed.

SQL> SELECT EMP_id, Name, Salary, Commission FROM EMP;

    EMP_ID NAME                                                SALARY COMMISSION
---------- -------------------------------------------------- ---------- ----------
         1 Dr. Black                                             800         80
         2 Dr. Red                                               900          0
         3 Dr. Green                                            1000        150
         4 Dr. Orange                                            700          0
         5 Dr. Pink                                             3000          0
         6 Dr. Silver                                           3000          0
         7 Dr. Yellow                                           3000          0
         8 Dr. White                                            1000          0
         9 Dr. Brown                                            1000          0
        10 Dr. Entropy                                           700          0

10 rows selected.

SQL> @\\Client\H$\Development\CIS442\CIS442-WK3-Lab\plscript.sql

PL/SQL procedure successfully completed.

SQL> SELECT EMP_id, Name, Salary, Commission FROM EMP;

    EMP_ID NAME                                                SALARY COMMISSION
---------- -------------------------------------------------- ---------- ----------
         1 Dr. Black                                             800         80
         2 Dr. Red                                               900          0
         3 Dr. Green                                            1000        150
         4 Dr. Orange                                            700          0
         5 Dr. Pink                                             3000          0
         6 Dr. Silver                                           3000        600
         7 Dr. Yellow                                           3000          0
         8 Dr. White                                            1000          0
         9 Dr. Brown                                            1000          0
        10 Dr. Entropy                                           700          0

10 rows selected.

SQL>
```

Mansfield–CIS442–WK3–SPOOL.txt