

COSC 344 Lab for Week 7

Overview

The purpose of this lab is to become familiar with PL/SQL and Triggers.

PL/SQL

Write a PL/SQL procedure to list the name and relationship of the dependents. For this, you can use a simple CURSOR FOR loop. Use `SELECT * FROM dependent` for your query.

Write a PL/SQL procedure that takes a project number and lists the ssn and number of hours each employee worked on the project. Raise an exception if the hours are less than 8.0 and have the exception print a message.

Put both procedures in a file named *PLSQL.sql*.

Triggers

Get the file, *company_trigger.sql*, from `/coursework/344/pickup/oracle-sql` (refer to the lab in Week 4 for the commands on copy files). It is an Oracle script that creates and populates two tables, *E1* and *D1*. *E1* is a simplified version of *employee* that only has `fname`, `ssn`, `salary`, and `dno`. *D1* is a different version of *department* that has `dname`, `dnumber`, and `tot_sal`. `Tot_sal` is the sum of the salaries of all employees assigned to a department.

Create triggers that maintain `tot_sal` consistent with the data in the database. You need to think through all the database actions that might cause it to become inconsistent.

At first, create your triggers in a file and check their operation. Once you think they are correct, insert the trigger code between the `CREATE TABLE E1` statement and the `INSERT` statements for *E1* in *company_trigger.sql* file. Try loading the file. The initial values of `tot_sal` should be:

1	55000
4	93000
5	133000

Try updating employee's salary, inserting new employees, and deleting employees. Try changing employees between departments. Do your triggers maintain consistency?

At the end of *company_trigger.sql*, add the statements for inserting a new employee, deleting an employee, updating the salary of an employee, and changing the `dno` of an employee. Put `"SELECT * FROM d1"` before and after each statement.

Assessment: 12 marks, due at 5pm April 27.

Submit *PLSQL.sql* and *company_trigger.sql* in Blackboard.