

CSE 216 Online 5: A2/B2

Trigger

Total: 10 + 10 = 20 Marks

1. Write a PL/SQL trigger that is fired when a new row is inserted in the EMPLOYEES table. The trigger checks the following constraints on this field.
 - a. Check if the email address follows the format "LAST_NAME@orcl.com" in lowercase. If not, change the email address to LAST_NAME.JOB_ID@orcl.com (All small letters)
Example: king.ad_pres@orcl.com
 - b. Check if the phone number has the format "5555-EMPLOYEE_ID-DEPARTMENT_ID". If not, change the phone number to the mentioned format. If DEPARTMENT_ID is not provided, the phone number would end with 000.
 - c. Check if the salary is positive. If a negative value is provided, raise the following error:
"RAISE_APPLICATION_ERROR(-100, "Negative Value in Salary Filed. Insertion Aborted")

Test Queries:

1. INSERT INTO EMPLOYEES
(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY)
VALUES (990, 'ROBERT', 'ABC', SYSDATE, 'AC_MGR', -5000);
 2. INSERT INTO EMPLOYEES
(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY)
VALUES (990, 'ROBERT', 'ABC', SYSDATE, 'AC_MGR', 5000);
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2. Create the following **table** and **sequence**.
CREATE TABLE Salary_History(
HISTORY_ID NUMBER,
EMPLOYEE_ID NUMBER,
OLD_SALARY NUMBER,
NEW_SALARY NUMBER,
CHANGE_DATE DATE,
CHANGE_TYPE VARCHAR(50)
);

CREATE SEQUENCE Salary_History_Seq START WITH 1 INCREMENT BY 1;

Write a PL/SQL trigger that will fire only when an employee's salary is inserted, updated, or deleted in the EMPLOYEES table; the trigger should automatically create a new record in the 'Salary_History' table to log the change, including the HISTORY_ID (use Salary_History_Seq.NEXTVAL for this field), EMPLOYEE_ID, the old salary, the new salary, the date of the change, and the change type (INSERT, UPDATE, or DELETE).

Test Queries:

3. DELETE FROM EMPLOYEES WHERE EMPLOYEE_ID = 115;
4. UPDATE EMPLOYEES SET SALARY = 9999 WHERE EMPLOYEE_ID = 102;
5. INSERT INTO EMPLOYEES
(EMPLOYEE_ID, LAST_NAME, EMAIL, HIRE_DATE, JOB_ID, SALARY)
VALUES (990, 'ROBERT', 'ABC', SYSDATE, 'AC_MGR', 5000);
6. ROLLBACK (set the database to default state)