

Database Programming with SQL 19-1: Testing

Practice Activities

# Objectives

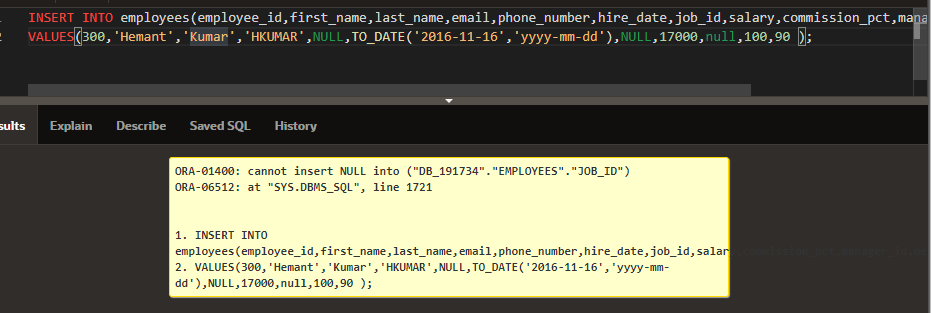
* Develop and apply a strategy for testing that a database functions as designed.

# Try It / Solve It

1. Design and carry out tests to check the following:
   1. The business rule that requires that employees have a job\_id

INSERT INTO employees(employee\_id,first\_name,last\_name,email,phone\_number,hire\_date,job\_id,salary,commission\_pct,manager\_id,department\_id)

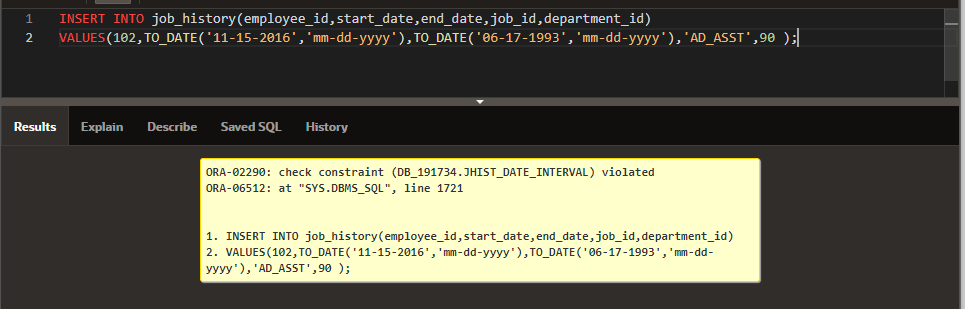
VALUES(300,'Hemant','Kumar','HKUMAR',NULL,TO\_DATE('2016-11-16','yyyy-mm-dd'),NULL,17000,null,100,90 );



* 1. The business rule that requires that the end date of an employment is after a start date in the job history table.

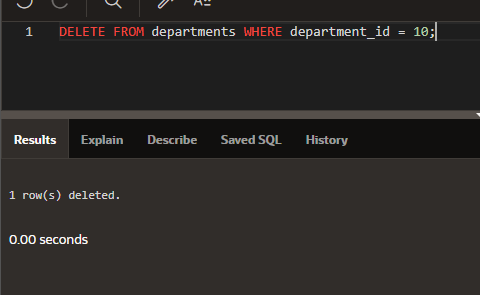
INSERT INTO job\_history(employee\_id,start\_date,end\_date,job\_id,department\_id)

VALUES(102,TO\_DATE('11-15-2016','mm-dd-yyyy'),TO\_DATE('06-17-1993','mm-dd-yyyy'),'AD\_ASST',90 );

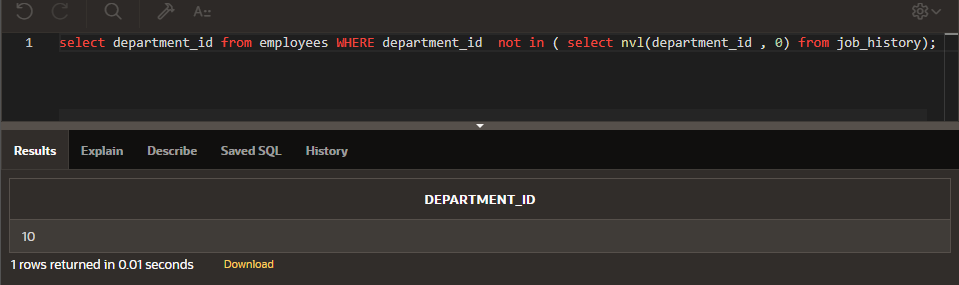


* 1. The business rule that states that departments can be closed down with employees in that department (resulting in the department\_id becoming unknown).

DELETE FROM departments WHERE department\_id = 10;



select department\_id from employees WHERE department\_id not in ( select nvl(department\_id , 0) from job\_history);



* 1. The minimum salary of an employee is 1000.

UPDATE employees

SET salary = NULL

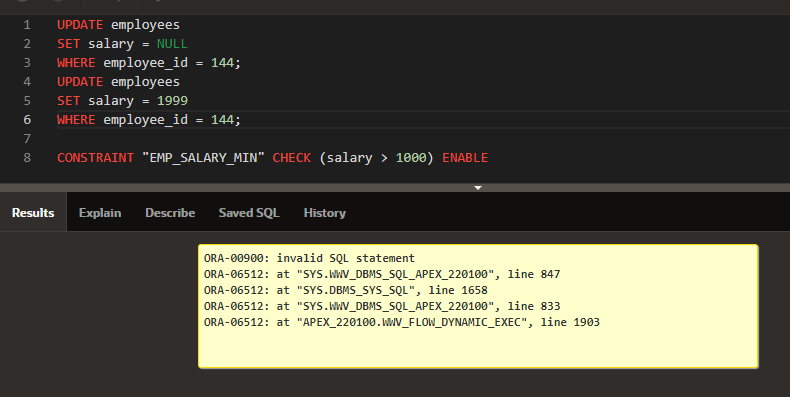
WHERE employee\_id = 144;

UPDATE employees

SET salary = 1999

WHERE employee\_id = 144;

CONSTRAINT "EMP\_SALARY\_MIN" CHECK (salary > 1000) ENABLE



1. If one of the above tests fails, write out the SQL statement(s) that would be needed to correct the test. With the permission of your teacher, implement the change and then rerun the test with the same input and confirm that it works.

ALTER TABLE employees

MODIFY salary CONSTRAINT emp\_salary\_nn NOT NULL;

ALTER TABLE employees

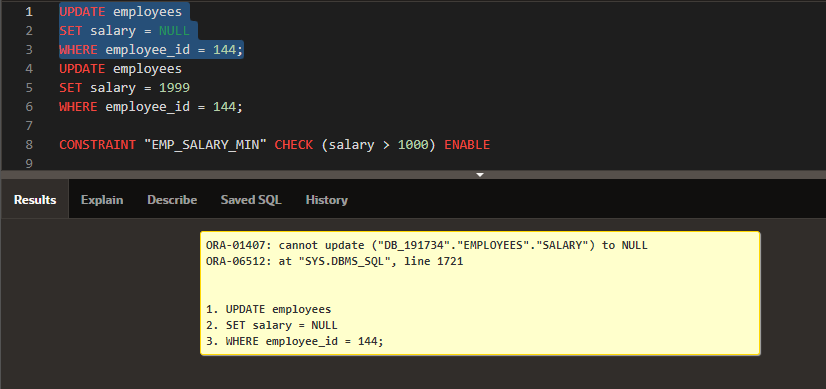
DROP CONSTRAINT emp\_salary\_min;

UPDATE employees

SET salary = 1000 WHERE NVL(salary,0) < 1000;

ALTER TABLE employees

ADD CONSTRAINT emp\_salary\_min CHECK (salary >= 1000);



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