

Course: Database management

Unit: Intermediate SQL 1

Material: Transactions 1

In order to have the same database, please, run the following SQL code:

```
CREATE DATABASE `SQL1NORMALTRANSACTIONS`;
USE `SQL1NORMALTRANSACTIONS`;

CREATE TABLE `DEPARTMENTS` (
  `num` int(11) NOT NULL,
  `name` varchar(30) NOT NULL,
  `town_code` varchar(3) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `DEPARTMENTS` (`num`, `name`, `town_code`) VALUES
(10, 'ACCOUNTING', 'SVQ'),
(20, 'RESEARCH', 'MAD'),
(30, 'SALES', 'BCN'),
(40, 'PRODUCTION', 'BIO');

CREATE TABLE `EMPLOYEES` (
  `num` int(11) NOT NULL,
  `surname` varchar(50) NOT NULL,
  `name` varchar(50) NOT NULL,
  `manager` int(11) DEFAULT NULL,
  `begin_date` date DEFAULT NULL,
  `salary` int(11) DEFAULT NULL,
  `commission` int(11) DEFAULT NULL,
  `dept_num` int(11) DEFAULT NULL,
  `occu_code` varchar(3) DEFAULT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `EMPLOYEES` (`num`, `surname`, `name`, `manager`, `begin_date`, `salary`, `commission`, `dept_num`, `occu_code`) VALUES
(1000, 'PITT', 'BRAD', NULL, '1984-01-01', 1040, NULL, 20, NULL),
(7369, 'SÁNCHEZ', 'SERGIO', 8001, '1990-12-17', 1040, NULL, 20, 'EMP'),
(7499, 'ARROYO', 'MARTA', 7698, '1990-02-20', 1500, 390, 30, 'SAL'),
(7521, 'SALA', 'RAUL', 7782, '1991-02-22', 1625, 650, 30, 'SAL'),
(7566, 'JIMÉNEZ', 'JUDIT', 1000, '1991-04-02', 2900, NULL, 20, 'MAN'),
(7654, 'MARTÍN', 'MONICA', 7698, '1991-09-29', 1600, 1020, 30, 'SAL'),
(7698, 'NEGRO', 'BARTOLOME', 1000, '1991-05-01', 3005, NULL, 30, 'MAN'),
(7782, 'CEREZO', 'ENRIQUE', 1000, '1991-06-09', 2885, NULL, 10, 'MAN'),
(7788, 'GIL', 'JESUS', 8000, '1991-11-09', 3000, NULL, 20, NULL),
(7844, 'TOVAR', 'LUIS', 7698, '1991-09-08', 1350, 0, 30, 'SAL'),
(7876, 'ALONSO', 'FERNANDO', 7788, '1991-09-23', 1430, NULL, 20, 'EMP'),
(7900, 'JIMENO', 'XAVIER', 8001, '1991-12-03', 1335, NULL, 30, 'EMP'),
(7902, 'FERNÁNDEZ', 'ANA', 8000, '1991-12-03', 3000, NULL, 20, NULL),
(7934, 'MUÑOZ', 'ANTONIA', 8001, '1992-01-23', 1690, NULL, 10, 'EMP'),
(8000, 'BANDERAS', 'ANTONIO', 1000, '1991-01-09', 2885, NULL, 20, 'MAN'),
(8001, 'RUIZ', 'FERNANDA', 1000, '1992-06-10', 2885, NULL, 20, 'MAN');

CREATE TABLE `OCCUPATIONS` (
  `code` varchar(3) NOT NULL,
  `name` varchar(30) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;

INSERT INTO `OCCUPATIONS` (`code`, `name`) VALUES
('ANA', 'ANALYST'),
('EMP', 'EMPLOYEE'),
('MAN', 'MANAGER'),
```

```
('PRE', 'PRESIDENT'),  
('SAL', 'SALESMAN');
```

```
CREATE TABLE `TOWNS` (  
  `code` varchar(3) NOT NULL,  
  `name` varchar(30) NOT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
INSERT INTO `TOWNS` (`code`, `name`) VALUES  
('BCN', 'BARCELONA'),  
('BIO', 'BILBAO'),  
('MAD', 'MADRID'),  
('SVQ', 'SEVILLA');
```

```
ALTER TABLE `DEPARTMENTS`  
  ADD PRIMARY KEY (`num`),  
  ADD KEY `town_code` (`town_code`);
```

```
ALTER TABLE `EMPLOYEES`  
  ADD PRIMARY KEY (`num`),  
  ADD KEY `dept_num` (`dept_num`),  
  ADD KEY `manager` (`manager`),  
  ADD KEY `occu_code` (`occu_code`);
```

```
ALTER TABLE `OCCUPATIONS`  
  ADD PRIMARY KEY (`code`);
```

```
ALTER TABLE `TOWNS`  
  ADD PRIMARY KEY (`code`);
```

```
ALTER TABLE `DEPARTMENTS`  
  ADD CONSTRAINT `DEPARTMENTS_ibfk_1` FOREIGN KEY (`town_code`) REFERENCES `TOWNS`  
  (`code`);
```

```
ALTER TABLE `EMPLOYEES`  
  ADD CONSTRAINT `EMPLOYEES_ibfk_1` FOREIGN KEY (`dept_num`) REFERENCES `DEPARTMENTS`  
  (`num`),  
  ADD CONSTRAINT `EMPLOYEES_ibfk_2` FOREIGN KEY (`manager`) REFERENCES `EMPLOYEES`  
  (`num`),  
  ADD CONSTRAINT `EMPLOYEES_ibfk_3` FOREIGN KEY (`occu_code`) REFERENCES `OCCUPATIONS`  
  (`code`);
```

1. Connect to the VM on your VPS using the linux shell.
2. Use the database 'SQL1_NORMAL'.
3. Begin a transaction (also set autocommit to off before beginning the transaction).
SET AUTOCOMMIT=0;
START TRANSACTION;
4. Query the average commission of the employees.
5. Increase employees' commission by 20%.
6. Query again the average commission of the employees. Is it higher?
7. Delete the employees with surname "TOVAR".
8. Rollback all the operations.
9. Query again the average commission of the employees and check if there are employees with surname "TOVAR".
10. Create a savepoint with name "SPINCCOMMISSION". (clue: note the start transaction again!)
11. Increase employees' commission by 20%.
12. Query again the average commission of the employees. is it higher?
13. Create a savepoint with name "SPDELTOVAR".
14. Delete the employees with surname "TOVAR".
15. Rollback to savepoint "SPDELTOVAR".
16. Query again the average commission of the employees and check if there are employees with surname "TOVAR".
17. Commit all the operations.
18. Do employees with surname "TOVAR" exist or not? Is the commission increased?