Worksheet 17 - SQL as DBMS

Monday, November 16, 2026

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Name: _____

Names of people you worked with: _____

What do you love about your major?

Task:

Consider a large hospital system that coordinates all aspects of health care: doctors, visits, prescriptions, surgeries, billing, etc. Let's say that the hospital has a database which includes a series of tables linking all the needed information that they routinely collect.

1. Come up with at least five tables which might exist in the hospital database. For each table indicate a few columns / variables.
2. Draw arrows between the tables and indicate the variable(s) that link the tables. No table should be completely isolated.

Solution:

The solution is taken directly from w3resource. Consider the hypothetical SQL schema diagram in Figure 1. Some of the tables and respective variables are described below.

- `physician`
  - employeeid - unique ID of a physician
  - name - name of physician
  - position - designation of a physician
  - ssn - social security number of physician
- `department`
  - departmentid - unique ID of the department
  - name - name of the department
  - head - ID of the physician who is the head of the department, connects to the employeeid of the table physician
- `affiliated_with`
  - physician - ID of the physician, connects to the employeeid of the table `physician`
  - department - ID of the department, connects to the departmentid of the table `department`
  - primaryaffiliation - logical column which indicates whether the physicians are affiliated or not
- `procedure`
  - code - unique ID of the medical procedure
  - name - name of the medical procedure
  - cost - cost of the medical procedure
- `trained_in`
  - physician - ID of the physician, connects to the employeeid of the table `physician`
  - treatment - ID of the medical procedure, connects to the code of the `procedure` table
  - certificationdate - starting date of certification
  - certificationexpires - expiry date of certification
- `patient`
  - ssn - unique ID for each patient
  - name - name of patient
  - address - address of patient
  - phone - phone number of patient

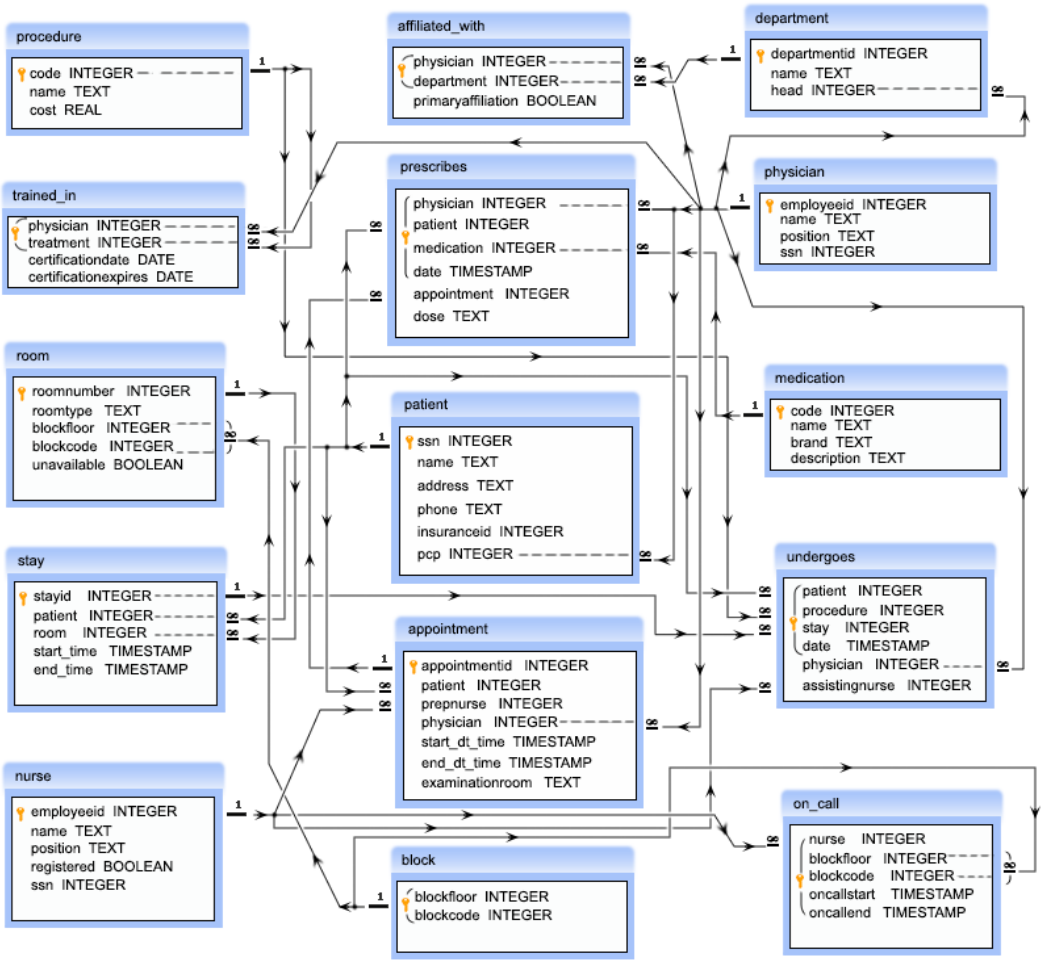


Figure 1: SQL schema describing links of tables from a hypothetical hospital database, image credit: https://www.w3resource.com/sql-exercises/hospital-database-exercise/index.php