

SQL Database for Beginners

Lab Exercise 1

Answer Key

- 1) List and briefly describe the main elements of a relational database.

Your answer should include:

- i. A relational database consists of tables and relations.
- ii. Each table has a number of columns describing the different kinds of data details kept in the table, for example, the attributes of a person.
- iii. Each table has a number of records/rows, each representing one data item, for example, one person.
- iv. Relations structure a database in a set of related tables to avoid redundancies.

- 2) Recap the purpose of databases in the context of application development.

Your answer should include:

- i. A relational database allows efficient storage of data.
- ii. Querying a relational database is not very end user friendly.
- iii. Displaying queried data is better achieved via a purpose-build application than a database query tool.

- 3) Open sqldbdiagram.jpg that comes with the course.

- 4) Identify and list the tables from the diagram.

Answer: contacttype, contact, person, projectperson, role, project

- 5) Identify and list the 1:n relations from the diagram.

Answer:

contacttype – contact
contact – person
person – projectperson
projectperson – role
projectperson – project

- 6) Identify and list the m:n relations from the diagram.

Answer:

contacttype – person (via contact)
person – role (via projectperson)
person – project (via projectperson)

Alternatively you could describe the last two as m:n:o relation between person, role and project (via projectperson)

- 7) Identify and list the primary key for each table from the diagram. Also state which are composite primary keys.

Answer:

contacttype: id

contact: pid, ctid (composite)

person: id

projectperson: prid, pid, rid (composite)

role: id

project: id

- 8) Identify and list the foreign keys present in each table from the diagram. Also state the table they reference.

Answer:

contacttype: none

contact: pid (referencing the person table), ctid (referencing the contacttype table)

person: none

projectperson: prid (referencing the project table), pid (referencing the person table), rid (referencing the role table)

role: none

project: none

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