

Chapter 01, Background to T-SQL

ISTA-420, T-SQL Fundamentals

Readings

Read Chapter 1, pages 1 – 26, *T-SQL Fundamentals*.

Homework Questions

1. Give an informal definition of *database* as used in the expression “relational database management system.”
2. Give an informal definition of *database* as used in the expression “Human Resources database.”
3. Give an informal definition of *entity integrity*.
4. Give an informal definition of *referential integrity*.
5. What is a *relation* as defined in the textbook? A one word answer to this question is sufficient.
6. Is this table in first normal form? Why or why not? If it is not, how would you change it?

```
create table faculty (  
    facID int primary key,  
    facName text,  
    facCreds text);
```

facID	facName	facCreds
1	Alan Alda	BA, MA
2	Bridgette Bardot	BS, MS, PhD
3	Casey Cason	AA, BBA, MBA, DEd

7. Is this table in second normal form? Why or why not? If it is not, how would you change it?

```
create table pets (  
    ownerID int primary key,  
    petID int primary key,  
    ownerFirstName text,  
    ownerLastName text,  
    petName text,  
    petType text);
```

ownerID	petID	ownerFirstName	ownerLastName	petName	petType
1	1	Dom	Delouise	Rex	German Shepherd
1	2	Dom	Delouise	Lacy	Border Collie
2	3	Emilio	Estevez	Midnight	Persian Cat

8. Is this table in third normal form? Why or why not? If it is not, how would you change it?

```
create table friends (
    friendID int primary key,
    friendName text,
    friendStreet text,
    friendCity text,
    friendState text,
    friendZip text);
```

ID	FirstName	LastName	Street	City	State	Zip
1	Fred	Flintstone	123 Rock Quarry Rd	Bedrock	GA	31905
2	Greta	Garbo	456 Starlit Ave	Paris	FL	30019
3	Harry	Houdini	789 Hidden Glen Lane	Alcatraz	CA	00000

9. What is an *OLTP database*? What operations is it optimized for?
10. What is a *star schema*? What operations is it optimized for?

Homework Exercises

1. Install SQL Server Express on a personal computer. See the appendix of the book, Getting Started, if you run into problems. Please, *please* check the system requirements before you do this. You cannot install SQL Server on a hand held device or an internet appliance. This may take a couple of hours but you can read the text book while you are waiting.
2. Install SQL Server Management Studio on a personal computer. See the cautions above. This may take a long time as well.
3. We will be downloading and installing the database the text uses. Read the Introduction. This can be obtained from <http://aka.ms/T-SQLFund3e/downloads>.