

Name: Suman Thapa Magar

UTA ID: 1001643016

CSE3330- 003

Chapter 1 Review Questions:

1. Define the following terms: DBMS, database system, meta-data, and transaction-processing application.
 - a. DMBS: Database Management System (DBMS) is a software package/system to facilitate the creation and maintenance of computerized system.
 - b. Database System: The DMBS software together with the data itself is called database system. Sometimes, the applications are also included.
 - c. Meta-data: The database definition or descriptive information is stored by the DBMS in the form of a database catalog or dictionary which is called meta-data.
 - d. Transaction Processing Application: It is a software/application included by the DBMS to ensure that several users can update the same data correctly and efficiently.
2. What are the two different types of database end users? Discuss the main activities of each.

The two different types of database end users are:

- a. Casual end users:
 - They access database occasionally when needed
- b. Naïve or Parametric end users:
 - They use previously well defined functions in the form of “canned transaction” against the database

3. Consider the image below:

STUDENT

Name	Student_number	Class	Major
Smith	17	1	CS
Brown	8	2	CS

COURSE

Course_name	Course_number	Credit_hours	Department
Intro to Computer Science	CS1310	4	CS
Data Structures	CS3320	4	CS
Discrete Mathematics	MATH2410	3	MATH
Database	CS3380	3	CS

SECTION

Section_identifier	Course_number	Semester	Year	Instructor
85	MATH2410	Fall	07	King
92	CS1310	Fall	07	Anderson
102	CS3320	Spring	08	Knuth
112	MATH2410	Fall	08	Chang
119	CS1310	Fall	08	Anderson
135	CS3380	Fall	08	Stone

GRADE_REPORT

Student_number	Section_identifier	Grade
17	112	B
17	119	C
8	85	A
8	92	A
8	102	B
8	135	A

PREREQUISITE

Course_number	Prerequisite_number
CS3380	CS3320
CS3380	MATH2410
CS3320	CS1310

Figure 1.2
A database that stores
student and course
information.

- a. If the name of the 'CS' (Computer Science) Department changes to 'CSSE' (Computer Science and Software Engineering) Department and the corresponding prefix for the course number also changes, identify the columns in the database that would need to be updated.

Ans: The columns in the database that needs to be updated are:

- 'Major' column of STUDENT table
- 'Course_number' and 'Department' columns of COURSE table
- 'Course_number' column of SECTION table
- 'Course_number' and 'Prerequisite_number' columns of PREREQUISITE table

- b. Can you restructure the columns in the COURSE, SECTION, and PREREQUISITE tables so that only one column will need to be updated?

The tables can be restructured as below:

COURSE

Course_name	Course_number	Credit_hours	Department
Intro to Computer Science	1310	4	CS
Data Structures	3320	4	CS
Discrete Mathematics	2410	3	MATH
Database	3380	3	CS

SECTION

Course_identifier	Course_number	Department	Year	Instructor	Semester
85	2410	MATH	07	King	Fall
92	1310	CS	07	Anderson	Fall
102	3320	CS	08	Knuth	Spring
112	2410	MATH	08	Chang	Fall
119	1310	CS	08	Anderson	Fall
135	3380	CS	08	Stone	Fall

PREREQUISITE

Department	Course_number	Department	Prerequisite_number
CS	3380	CS	3320
		MATH	2410
CS	3320	CS	1310