**CH.1 #13**

It makes sense to use traditional file processing instead of a database approach when using systems that have well-defined database applications that are not expected to change, systems with limited storage capacity, and systems that don’t need multiple-user access to data.

**CH. #14**

1. The columns that need to be updated are:

Student 🡪 major

Course 🡪 Course\_number, department

Section 🡪 Course\_number

Prerequisite 🡪 Course\_number, Prerequisite\_number

Course

|  |  |  |  |
| --- | --- | --- | --- |
| Course\_name | Course\_department | Course\_number | Credit\_hours |
| Intro to Computer Science | CS | 1310 | 4 |
| Data Structures | CS | 3320 | 4 |
| Discrete Mathematics | MATH | 2410 | 3 |
| Database | CS | 3380 | 3 |

Section

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Section\_identifier | Course\_dept | Course\_num | Semester | Year | Instructor |
| 85 | MATH | 2410 | Fall | 07 | King |
| 92 | CS | 1310 | Fall | 07 | Anderson |
| 102 | CS | 3320 | Spring | 08 | Kruth |
| 112 | MATH | 2410 | Fall | 08 | Cheng |
| 119 | CS | 1310 | Fall | 08 | Anderson |
| 135 | CS | 3380 | Fall | 08 | Stone |

Prerequisite

|  |  |  |  |
| --- | --- | --- | --- |
| Course\_dept | Course\_num | Prereq\_dept | Prereq\_num |
| CS | 3380 | CS | 3320 |
| CS | 3380 | MATH | 2410 |
| CS | 3320 | CS | 1310 |

**CH.2 #3**

A database schema is a description of a database. It is specified during database design and it’s not expected to change frequently. A database state is data in the database at a particular moment. In a database state, each schema has its own currents set of instances.

**CH.2 #7**

The different types of user-friendly interfaces:

* Menu-Based Interfaces for Web Clients or Browsing: Provides the user with a list of options or a menu
* Forms-Based Interfaces: Forms display fields that the user can insert new data into or fill out certain entries.
* Graphical User Interfaces: Use menus and forms and most use a pointing device to select certain parts of the diagram.
* Natural Language Interfaces: Accept requests in a language and attempts to understand them
* Speech Input and Output: The use of speech as an input question and speech as an answer to a question or a result.
* Interfaces for Parametric Users: For users that have a small set of information that must be performed repeatedly.

**CH.2 #14**

If I were designing a Web-based system to make airline reservations and sell air tickets, I would use the Three-Tier Architecture. I would use this because it has a Web server between the client and database server. This stores procedures and constraints and it is used to improve security which would play a role in the ticket reservation and handing out of the ticket.

**CH.3 #2**

Tuples in a relation are not ordered because a relation is a set off tuples and elements in a set have no order, therefore a relation is not affected by the ordering of tuples.

**CH.3 #5**

We designated one of the candidate keys of a relation to be a primary key. The candidate key that is chosen as a primary key has values that are used to identify tuples in the relationship.

**CH.3 #9**

A foreign key