ACTIVITIES

1. Introduction to databases and database management systems

The aim of these activities is to think about the way to store data from specific entities in the real world.

1. Tabular representation of books
Build a tabular representation (with a table in your usual word processor, or a range of cells in your favourite spreadsheet) to store three or four attributes of some objects of interest (eg half dozen books). Insert some sample values into the table.

2. Tabular representation of a real estate
Build a tabular representation to store data of a housing estate. Insert some sample values into the table.

3. Tabular representation of information of a pizzeria
Build a tabular representation to store data of pizzas offered in a pizzeria. Insert some sample values into the table.

4. Tabular representation of Formula 1 teams
Design both tabular representations to store information:

- The teams participating in Formula 1 championships.
- The races are held during each season.

Insert some sample values into the tables. You can find information in FIA.

The aim of these activities is to think about how various data files interrelate among themselves, within the same environment.

5. Relationships in a real estate
Think about what or what kind of relationships can exist between a possible file available in a real estate and another file of real state agents.

6. Relationships in a pizzeria
Think about which relationships may exist between:

- The pizza file and the pizza ingredients file.
- The pizza file and the file where orders are registered.

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The purpose of these activities is to extract a list of entities type from a given organization for the database design.

7. Entities type of a real estate
Make a list of possible entities type that can be interesting to design a database that stores information for a generic real state.

8. Entities type of a pizzeria
Make a list of possible entities type that can be interesting to design a database that stores information for a pizzerias chain. In each local of the chain besides cooking pizzas, the waiters are serving the customers at the same local, and also there are staff taking phone orders that are distributed by delivery people.

9. Files and BD
The purpose of this activity is to determine in which cases we need to use databases instead of files.

Consider what circumstances, as users of computer applications in everyday life (ie when using automated teller machines, video games, electrical appliances, etc.), you query or enter data using files or BD.

10. New databases
Think about an organization, business or company that wants to improve its functionality and procedures.

- Explain and describe its requirements and needs.
- Make a list of possible entity types.
- Make a tabular representation of one of these entities. Fill with some sample data and show a relationship to other entity.
- Think on how to access data in different ways and give an example for each type of data access that you know.