Week 4 Exercises

Part 1. Eatr Revisited

Go back to last week's exercises and revisit your design of Eatr. Once you are satisfied with the design, convert it into a relational representation and implement it as database.

Part 2. ER for M

This is the exercise we started in class. Complete the design and implement the database.

M is a head of a secret intelligence service of a West European country. Through his agents, M combats terrorism and communism around the world. M's agents have been very successful — in part thanks to a variety of gadgets that they have had available to them, such as cars with missile launchers or watches that can receive video signal over the air. Such gadgets, however, are quite expensive and have an unfortunate tendency to get destroyed or otherwise lost during operations. And now that Ernst Blofeld's SPECTRE network has been successfully dismantled, the government has been eager to find ways to reduce M's budget. This means better accounting for the gadgets.

M would like to build a database that would help to keep track of the gadgets. In particular, the database should be able to provide M at any point with the following information:

  • The list of gadgets currently in possession of a particular agent (and in particular, certain "Agent 007").

  • The total value (in £s) of gadgets currently in possession of a particular agent.

  • The list of gadgets that have been lost, showing when they were lost, by which agent, and in the course of which operation.

  • The total value of gadgets lost in a particular operation.

  • The total value of gadgets lost in all operations involving a particular enemy (e.g., in all operations involving SPECTRE).

  • The agent's written explanation for every lost gadget costing over £100.

  • The total number of units of a particular gadget (e.g., X-ray glasses) held by all agents, the total number available in stock, the total number that was lost in the last year.

  • The list of gadgets that have been requested by the agents, with the agents' explanation of why a particular gadget is needed, how many units, and the time period during which it would be needed.

  • The outstanding orders for additional gadgets, with quantities and expected arrival dates.

Design an ER diagram for M's database, then implement the database in SQL and add several rows to each table.