Library project

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# Description

Formerly, before the widespread digitalization of institutions and services, library was known as a place that managed a collection of resources (books, documents, artwork) for people to borrow. Usually without any payment or with a single registration fee. This definition is still alive, however nowadays libraries are no longer limited to physical places. Libraries can combine holding physical locations with internet services or pick one of these.

Despite the ability to provide services in both physical locations and the Internet, libraries were digitalized they no longer use paper library cards. The core of a library, library card catalogs, were replaced with databases. Whenever a lessee borrows a resource, an end user of the database – a librarian, updates the database with the goal of keeping resource tracking data consistent.

# Entity Relationship Diagram

Diagram

Description automatically generated

Figure 1 Library ERD - pt 1/2

Diagram

Description automatically generated

Figure 2 Library ERD - pt 2/2

# Database Physical ModelDiagram Description automatically generated

Figure 3 Database physical model

# Project Assumptions

The database allows end users to perform basic library resource tracking actions. The database allows end users to store abstract resource representations, which may be used later, in the process of adding new editions of such generic resource. From each edition, a resource instance reflecting a physical resource (i.e., Book) can be created.

Diagram

Description automatically generated

Figure 4 Diagram showing the structure described above - simple

Diagram

Description automatically generated

Figure 5 Diagram showing the structure described above – extended

### Lease

Existing resources can be leased by the end user - librarian, for a limited time, to users registered in the library. Lease time may not be equal for all accounts registered in the library.

### Contact information to registered users

Email address is a required property for every user.

### Ending a lease

Each time a resource is returned by the borrower, borrower’s lease counter is increased by one. If a borrower destroys a resource, a librarian can check the value of destroyed resource.

### Resource reservations

When the library runs out of a resource, a user can reserve a resource in a FIFO manner. In addition to reservations of a generic resource, edition and specific instance reservations can also be made.

### Resource circulation

The database allows for tracking of external resources (resources owned by another institution and leased to the library).

### Restricted resources

Restricted resources must not be leased to library users.

### Filtering

Filtering resources by author, one or more of author’s nationalities, resource type, resource translators and institution that owns a selected resource is supported.

### B.C.

The database must be able to store any resource publish year – A.D. as well as B.C.