Library Management System

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System Description

Our project is a simple library management system.
Users are organized into students and librarians.
Students can search for books, articles, video, etc. and view the content.
Librarians can do what students can do.
Librarians also can add, edit, and delete book/article/video/etc details.
The books are organized by subject and publisher.
Additionally, users can search based on publication date,
name, etc. after selecting subject and publisher.

Implementation Details

- SQLite3 for database
  - To avoid having to set up a server and because it’ll handle smaller sized databases easier
- Node.JS for backend
  - To connect our DB and our frontend
- HTML/CSS/Javascript on frontend
  - So user can see database info without having direct access to the database

Use cases

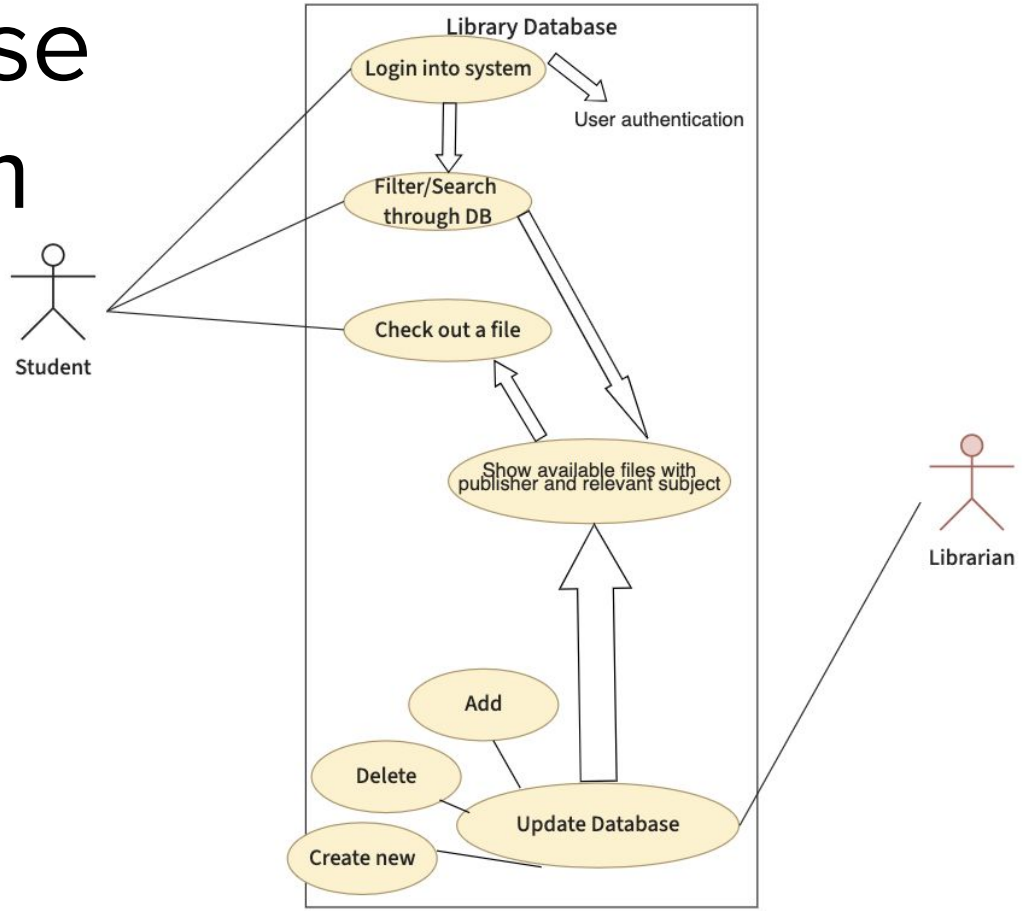
Student:

- Logs into library database
- Filters what kind of file they’re looking for, the publisher, and the subject type
- Give ability to check out that file

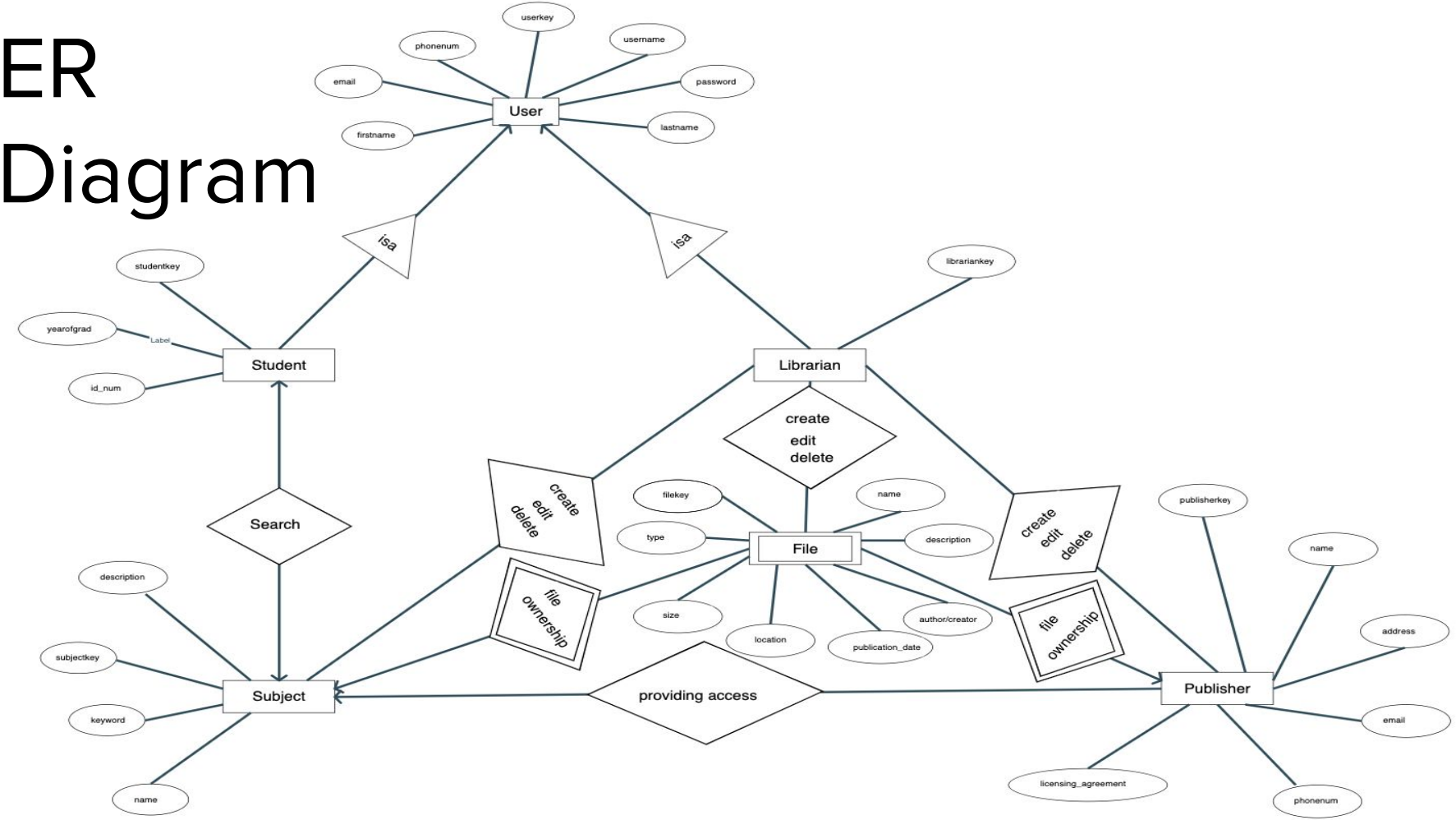
Librarian

- Create new files in the database
- Add/delete existing information in the database

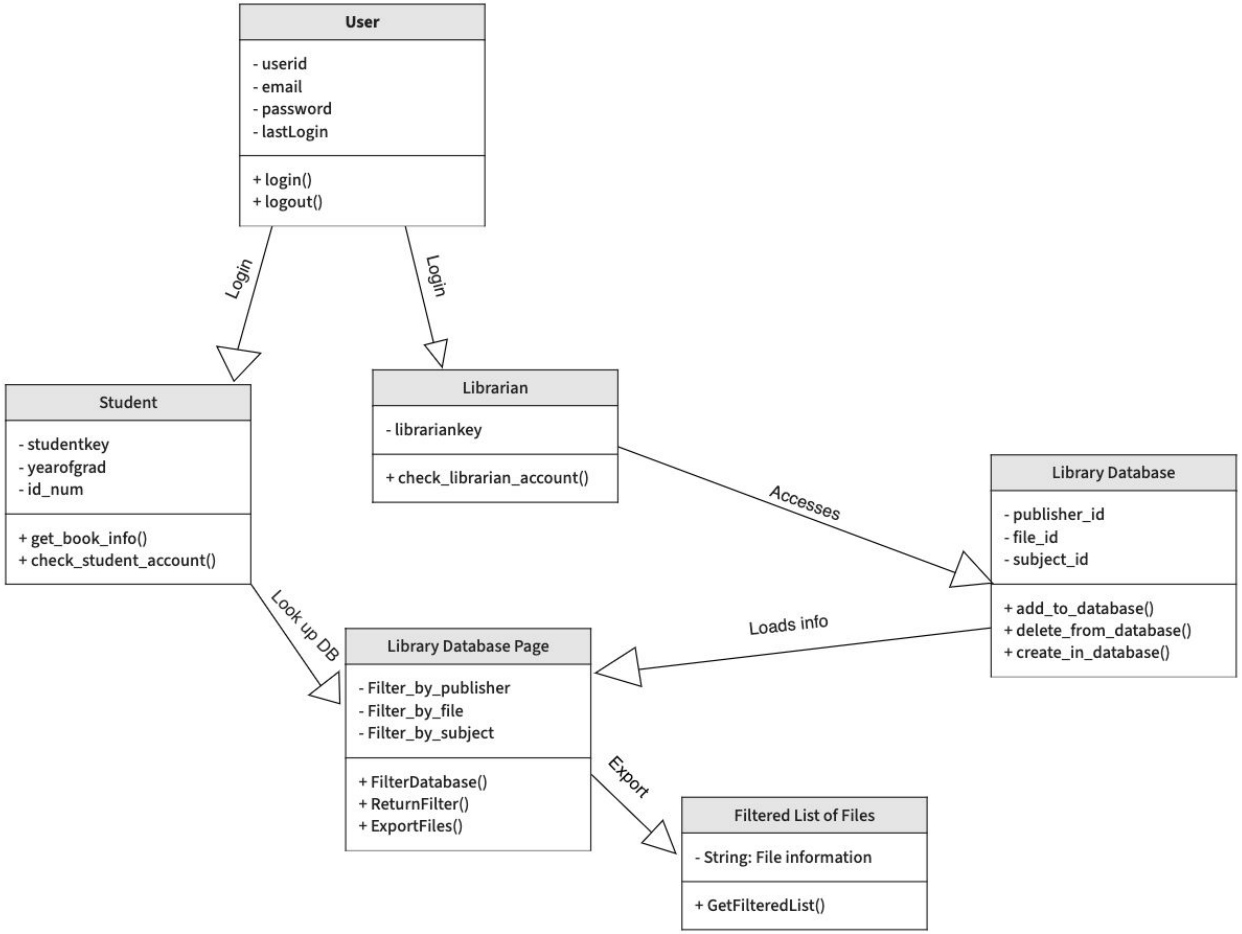
Use-Case Diagram



ER Diagram


userkey
phonenum
username
email
password
User
firstname
lastname
isa
isa
studentkey
librariankey
yearofgrad
Label
Student
Librarian
id_num
create
edit
delete
create
edit
delete
filekey
name
Search
type
File
description
create
edit
delete
publisherkey
name
description
file
ownership
size
location
author/creator
publication_date
file
ownership
address
subjectkey
Subject
providing access
Publisher
keyword
email
licensing_agreement
name
phonenum

CLASS DIAGRAM



Relational Schema

User - u_firstname, u_lastname, u_userkey, u_username, u_password, u_email, u_phonenum

Student - s_studentkey, s_userkey, s_idnum, s_yearofgrad

Librarian - l_librariankey, l_userkey

Subject - s_name, s_description, s_keyword, s_subjectkey

Publisher - p_name, p_email, p_address, p_phonenum, p_licensingagreement, p_publisherkey

File - f_subjectkey, f_publisherkey, f_name, f_filekey, f_description, f_type, f_size, f_location, f_creator, f_publicationdate, f_filePath