Library App — Project Overview & Steps
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1. Project goal
- Build a simple Department Library web app where students can search, borrow, and return books; admins manage inventory.

2. Tech stack
- Backend: Python 3 + Flask
- Database: SQLite (file `instance/library.db`)
- Frontend: HTML, CSS, JavaScript, Bootstrap 5

3. What I implemented
- Search API (`/api/search`) with filters: department, year range, availability.
- Admin pages: login, dashboard, add/edit/delete books.
- Student flows: register, login, borrow (limit 3), return, dashboard.
- CSRF protection via Flask-WTF.
- Dockerfile and `docker-compose.yml` for containerization.

4. Development steps followed (high level)
- Scaffolded Flask app and templates.
- Designed DB schema and wrote `create_db.py` to create tables and seed sample data.
- Implemented routes in `app.py` for API and UI.
- Added client-side JavaScript for search and borrow interactions.
- Added CSS and images for UI polish.
- Wrote and ran `pytest` tests to validate core flows.
- Documented run steps and packaged the project into a ZIP.

5. Sample books seeded (from `create_db.py`)

Title	Author	Year	ISBN	Copies	Department
Introduction to Algorithms	Cormen, Leiserson, Rivest	2009	0262033844	3	CSE
Clean Code	Robert C. Martin	2008	0132350882	2	CSE
Linear Algebra and Its Applications	Gilbert Strang	2016	0980232776	1	Math
Database System Concepts	Silberschatz, Korth, Sudarshan	2010	0073523321	2	CSE
Artificial Intelligence: A Modern Approach	Stuart Russell, Peter Norvig	2010	0136042597	2	CSE
Operating System Concepts	Silberschatz, Galvin, Gagne	2018	1119456339	2	CSE
Discrete Mathematics and Its Applications	Kenneth H. Rosen	2011	0073383090	1	Math
Computer Networks	Andrew S. Tanenbaum	2010	0132126958	1	CSE
Principles of Compiler Design	Aho, Ullman	2007	0201003003	1	CSE
Modern Database Management	Jeffrey A. Hoffer	2012	0136086203	1	CSE

6. How to run locally (summary)
```powershell
python -m venv .venv
.\.venv\Scripts\Activate.ps1
pip install -r requirements.txt
python create_db.py
python app.py
```

7. Deliverables in this folder
- `app.py`, `create_db.py`, `templates/`, `static/`, `presentation.md`

8. Notes for presentation
- Use the app demo (http://127.0.0.1:5000) to show search/borrow flows.
- Admin default password (for demo) is `rahul@123` or set `LIB_ADMIN_PASS` env var.