BRACU Research Repository — Legacy PHP Project Documentation

# 1. Project Purpose (Elevator Pitch)

A campus‑focused research hub that lets users:

* Sign up / sign in
* Upload research papers & software projects
* Browse, search, and borrow papers
* Track citations
* Manage researcher profiles and interests

# 2. File System Overview

Every .php file is a page‑controller‑view hybrid: it starts a session, connects to MySQL,  
runs raw SQL, and echoes HTML. Below is the root tree (assets trimmed).

bracu\_rp1/  
├─ add\_paper.php  
├─ add\_project.php  
├─ borrow\*.php  
├─ return\_paper.php  
├─ papers.php  
├─ projects.php  
├─ search\_project.php  
├─ my\_papers.php | my\_projects.php  
├─ signin.php | signup.php | signout.php  
├─ profile.php / edit\_profile.php / update\_profile.php / update\_dp.php  
├─ update\_cited.php  
├─ home\*.php  
├─ our\_library\*.php  
├─ bracu\_rp.sql  
└─ assets/...

# 3. Database Schema (Abridged)

|  |  |  |
| --- | --- | --- |
| Table | Purpose | Key columns / links |
| user | Auth base | user\_id PK, email, password\_hash |
| user\_role | Role lookup | (user\_id) → user, enum |
| researcher | Profile details | (user\_id FK) name, dept, contact |
| paper | Research papers | paper\_id PK, title, type, year, link, cited |
| paper\_author | M–N join | (paper\_id → paper, researcher\_id → researcher) |
| project | Software / datasets | Same shape as paper |
| project\_author | M–N join | (project\_id → project, researcher\_id) |
| borrow / borrows | Borrow tickets / join | dates, status |
| lends | Who approved the borrow | admin/volunteer |

# 4. Request Flow

1. Browser hits \*.php  
2. File calls session\_start() and connects: mysqli("localhost", "root", "", "bracu\_research\_portal")  
3. Minimal validation via test\_input()  
4. Raw SQL (risk of SQL‑injection) executes  
5. PHP echoes HTML/CSS/JS in the same file  
6. Redirects via header('Location: …') when needed

# 5. Features

## Auth

Pages: signin.php, signup.php, signout.php

Notes: Session login; no CSRF; no reset

## Profiles

Pages: profile.php, edit\_profile.php…

Notes: CRUD on researcher + avatar upload

## Paper management

Pages: add\_paper.php, papers.php…

Notes: Upload, list, citation counter

## Project management

Pages: add\_project.php, projects.php…

Notes: Same as papers, minus citations

## Library / Borrowing

Pages: borrow\*.php, return\_paper.php

Notes: Creates borrow records

## Search

Pages: search\_project.php

Notes: LIKE '%term%' over projects

## Dashboards

Pages: home\_after\*.php

Notes: Role‑based landing pages

# 6. Pain Points to Fix in Laravel

* Duplicate DB code → move to Eloquent & .env
* SQL‑injection risk → parameter binding
* No routing layer → use Laravel routes & controllers
* Mixed PHP/HTML → Blade templates
* Missing auth middleware → Laravel guards
* Manual file uploads → storage disks with validation
* No migrations → versioned migrations from bracu\_rp.sql

# 7. TL;DR

Flat‑file PHP site that stores papers & projects, lets users upload/borrow, and manages researcher profiles. All logic lives in about 25 ugly `.php` pages.