# Smart Library

Team ID: **1**

**Noah Franklin** (c-s21-08), **Yitzhak Alvarez** (c-s21-03) and **Alexandra Maceda** (c-s21-14)

"Projects" class, Prof. Hanh Pham, Spring 2021

# Outline

- 1. Problem Description
  - 1.1 Business Context and Goals
  - 1.2 Technical Requirements
  - 1.3 Your Responsibilities
- 2. Technologies
  - 2.1 Related Technologies
  - 2.2 Newly Learned Skills/Technologies
- 3. Plan
  - 3.1 Ideas for Solution (Architecture + Protocols)
  - 3.2 Programming/Coding Components
  - 3.3 Schedule

# 1. Problem Description

# 1.1 Business Context and Goals

**Problem:**

- If student or library worker wanted a book they would have to look up the call number and go through the shelves and find the book
  - * this can be an inconvenience because you have to manually look through the shelves and if the book is misplaced it can be hard to find
- Also when they had to return the book they had to put it back to it's correct place

# 1.1 Business Context and Goals

**General Description:** Creating a virtual library for SUNY New Paltz which accurately reflect book locations without adding new tags. Users can also browse library floors (Main and Concourse), and bookshelves. Goal is to closely mimic a virtual experience while keep the the application simple and easy to use.

**Made for:** Sojourner Truth Library

- User can login

Input = User credential

Output = Access Granted (if credentials match) or Access Denied (if credentials don't match

- User can locate book

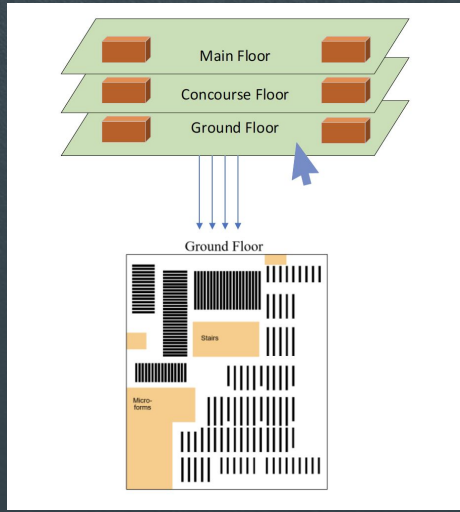
Input = Book Call Number

Output = Book Location (Floor>> Shelf>>Side>>Section>>Row>>Book)

- User can Browse Shelfs

Input = Click Floors/Shelves/Sides/Sections/Rows/Books

Output = Brings up next layer until arriving at books



# 1.2 Technical Requirements

Environment:

- Desktop Browser
- Connections: Connects to Smart Library Database *requires internet access

System Components:

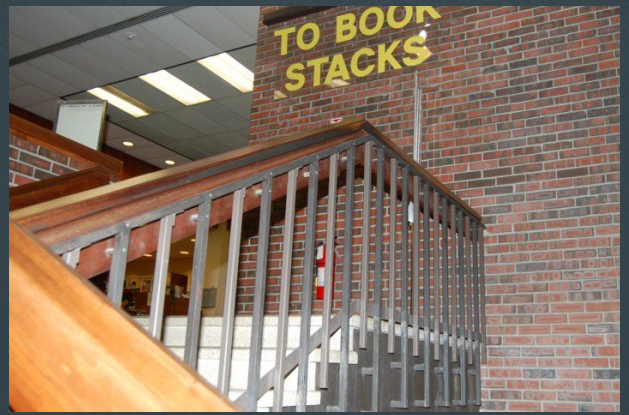
- User Interface:
  - Browser Window Display
- Processing:
  - Login
    - Input User Name & Password
    - Check DB
    - Check if credentials match, if it does authorize entry if not send error message
  - Finding Book
    - Input book
    - Check DB
    - Display location (Floor>>Bookshelf>> Side>> Section>> Row>> Book)
  - Browsing Shelfs
    - GUI showing maps and images and it is clickable
- Data:
  - All Book images are located in the A server & organized according to location
- NO Additional Hardware Needed

# 1.3 Your Responsibilities

Restructure the folders with FileZilla, so that it is easier to use a python script to create static web pages with those images.

Upgrading the website.

Our goal is to closely mimic a virtual experience while keep the the application simple and easy to use.



# 2. Technologies

# 2.1 Related Technologies

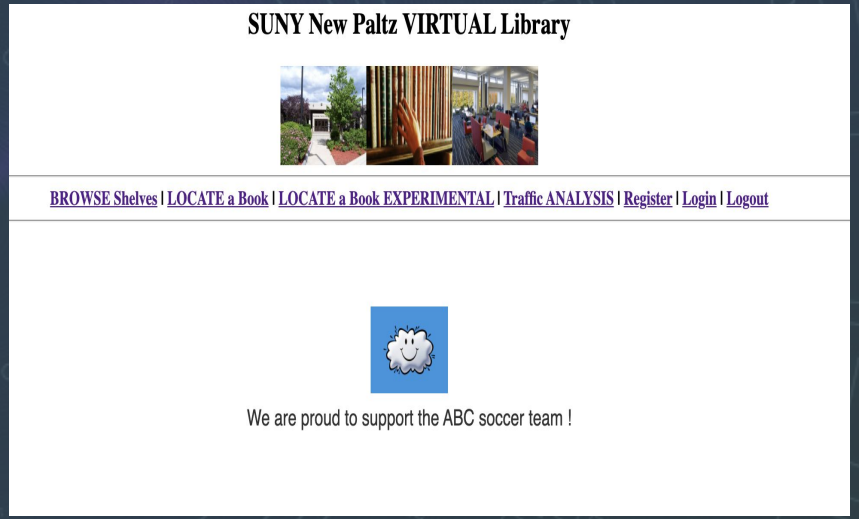
**Frontend/UI**

- HTML - Used to structure the web pages
- CSS - Used to style
- Bootstrap - CSS framework for responsiveness and styling
- JavaScript - Used to make the webpages interactive
- jQuery - Much easier use of JavaScript on our website

**Backend**

- PHP - Interact with the database to display on the front end
- MySQL - Create tables and queries for the database

Existing Homepage of Smart Library



# 2.2 Newly Learned Skills/Technologies

- Figma - Great design software tool for us to prototype our website
- FileZilla - Great for file transferring and renaming folders
- PHP - Good for backend development
- jQuery - Simple but advanced JavaScript



PROBLEM
3. Plan
SOLUTION

# 3.1 Ideas for Solution (Architecture + Protocols)

## Restructure folders

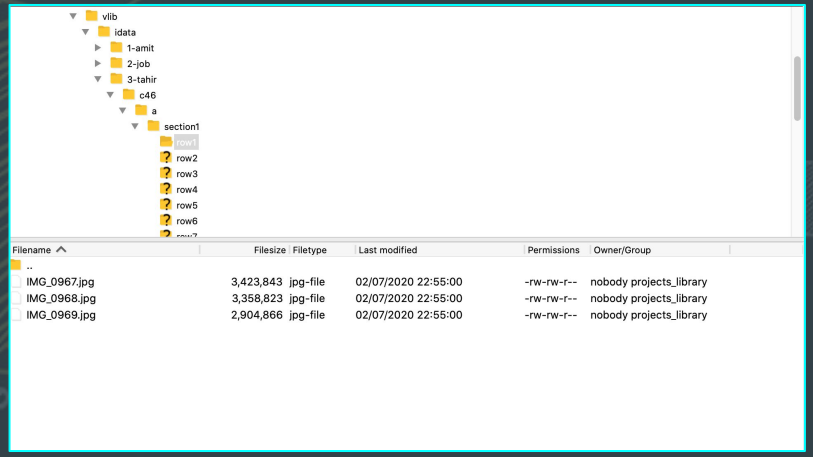
Solution: Create a consistent folder structure to store the photos of the library and organize the current photos into them.

Folder Structure:

/vlib/idata/number-name/shelfnumber/side/sectionnumber/rownumber/imagefiles

Example Structure:

/vlib/idata/3-tahir/c46/a/section1/row1/<imagefiles>

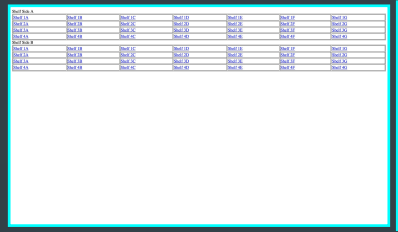


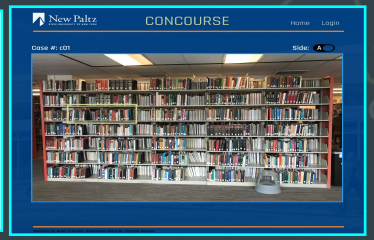

Folder structure on “a” server

# 3.1 Ideas for Solution (Architecture + Protocols) cont.



Home page






Case page

## Update website design

Solution: Update the home page with a triple image stack that links to each floor. Update the bookcase page to show an image of the bookcase with clickable sections. General design improvements, mobile responsive, and possibly add clickable links for each book.

# 3.2 Programming/Coding Components

Programming languages

Front End

- HTML
- CSS
- Javascript

Back End

- PHP
- MySQL

Frameworks

- Bootstrap
- jQuery

# 3.3 Schedule

| DATE | TODO | BY WHOM |
|---|---|---|
| 3/6/2021-4/24/2021 | Restructure folders | Everyone |
| 3/13/2021 | Create home page | Everyone |
| 3/20/2021 | Update floor page | Everyone |
| 3/27/2021 | Update case page | Everyone |
| 4/3/2021 | Update shelf page | Everyone |
| 4/10/2021 | Get login/book search working | Everyone |
| 4/17/2021 | Finishing touches, possibly get clickable books, | Everyone |
| 4/24/2021 | Make slides, report, documentation | Everyone |