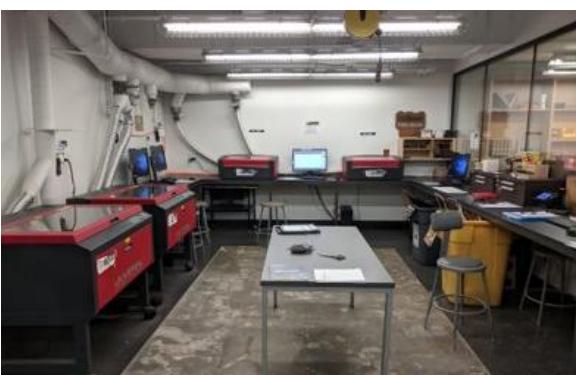
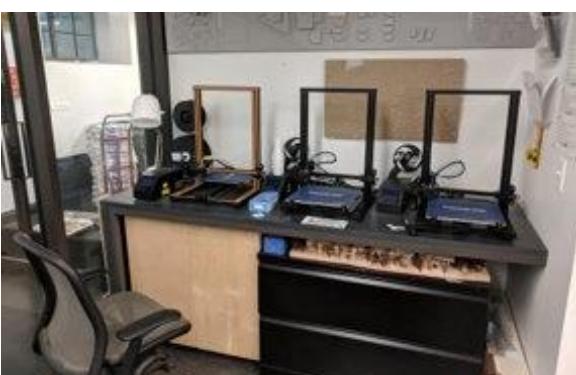
A photograph of a modern architectural complex. In the foreground, a large building with a curved, light-colored facade and a glass-enclosed section is visible. Behind it, a smaller, older brick building with arched windows and a gabled roof is partially visible. The sky is clear and blue.

Fay Jones Lab Request System

Aaron Faubion, Elliot Mason, Matthew Brooke, Tanner
Paschal, and Zachary Thiher



The Lab Space

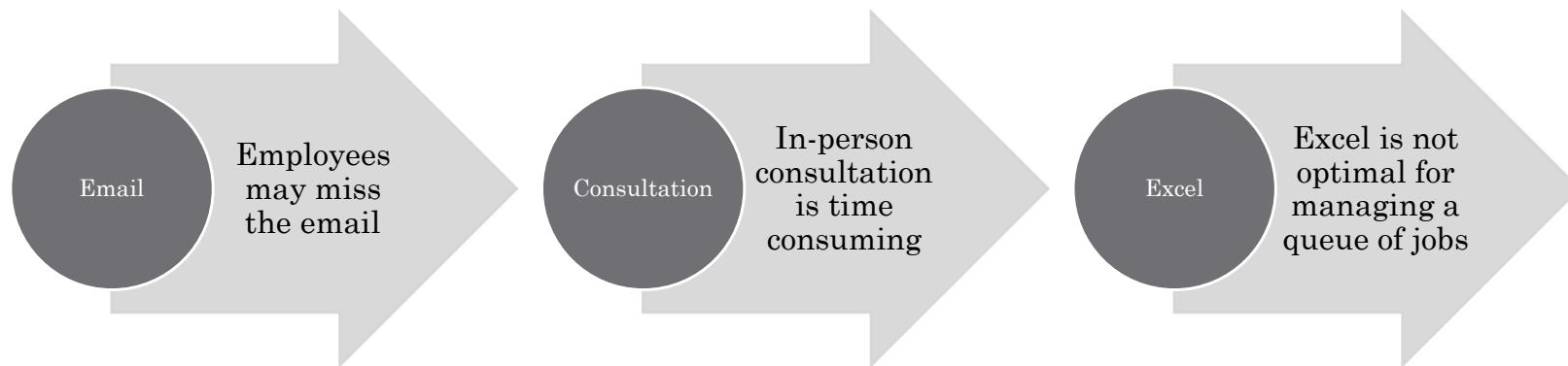
What is FJLRS?

- Online webapp that allows students to submit print jobs to a queue
- Allows staff to have a single point to view the queue, interact with the jobs, and update the status

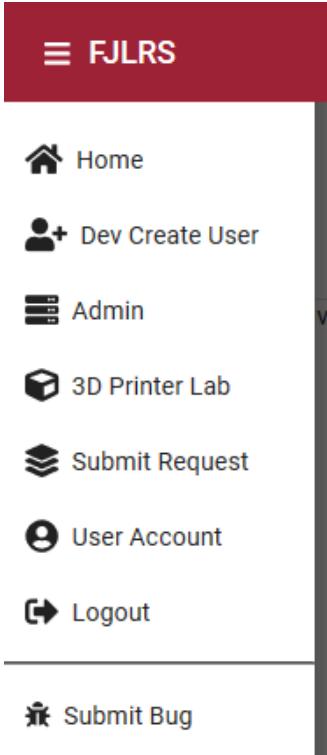


Why?

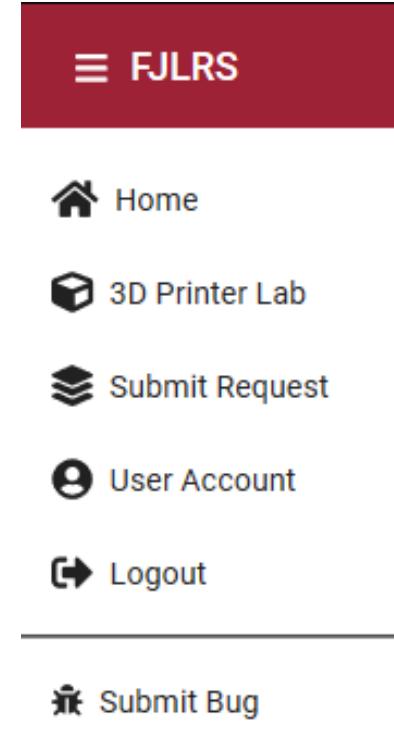
- The current system for the print lab is inconvenient.
- Students must email to schedule an in-person consultation in order to print.
- Jobs are manually added to an Excel file to track them.



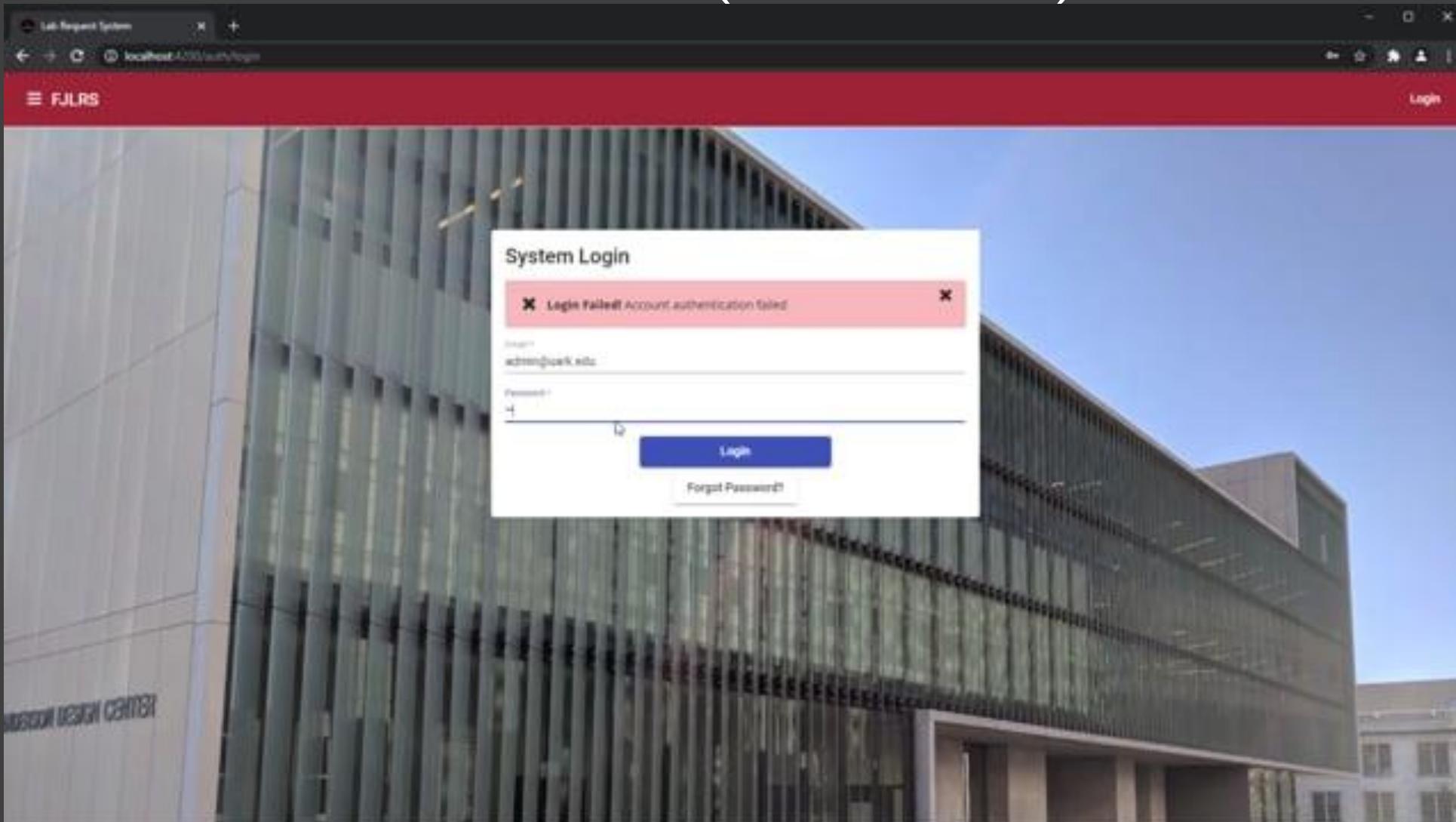
Employee & Student Navigation Views



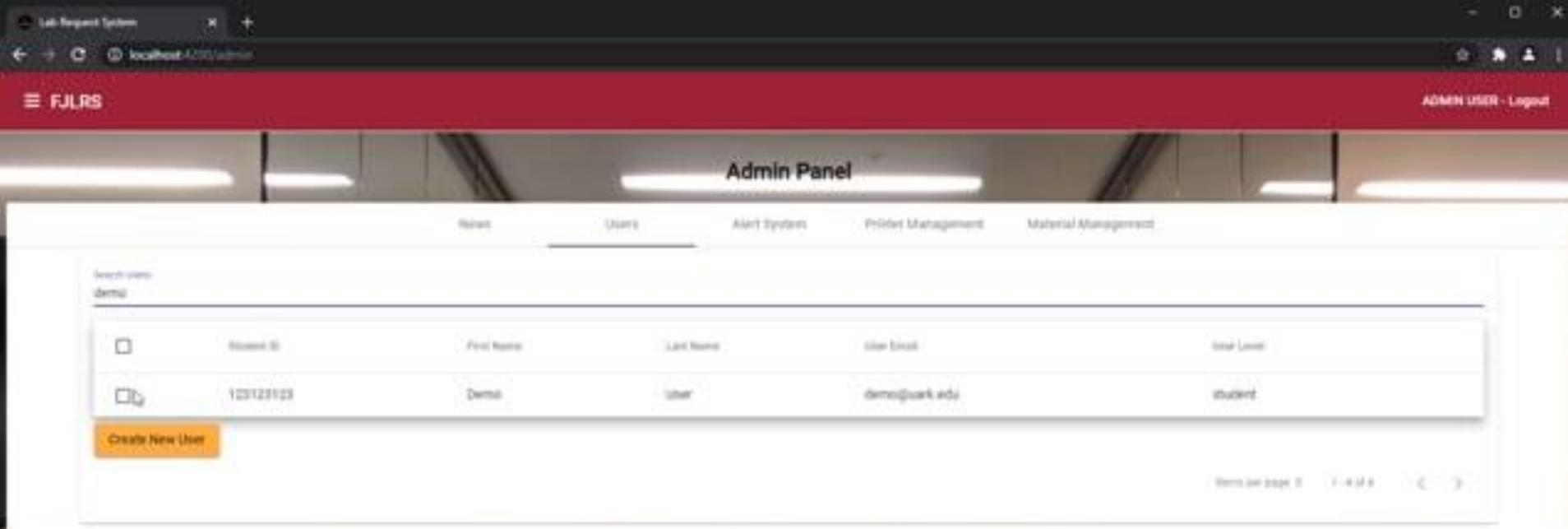
Admins have exclusive capabilities



User Enrollment (ADMIN)



User Management (ADMIN)



Admin Panel

	Account ID	First Name	Last Name	User Email	User Level
<input checked="" type="checkbox"/>	123123123	Demo	User	demo@spark.edu	student

[Create New User](#)

demo

123123123

Demo

User

demo@spark.edu

student

2 items per page 1 2 3 4 5 6



Manage Printers (ADMIN)

The screenshot shows a web-based Admin Panel for managing printers. The top navigation bar includes links for 'Logout', 'Admin User - Logout', and a logo for 'FJLRS'. The main menu has tabs for 'Admin Panel', 'Report', 'Users', 'Alert System', 'Printer Management', and 'Material Management'. The 'Printer Management' tab is currently selected. The 'Search Printers' section displays a table with two rows of printer data. Each row includes columns for 'Printer Name', 'Printer Type', 'Printer Info', and 'Delete' buttons. The first row shows 'Printer 01' as a 'Prusa' type with info 'octoprint'. The second row shows 'Printer 02' as a 'Prusa' type with info 'octoprint2.0f'. Below this is a 'Create New Printer' form with fields for 'Printer Name' (set to 'Demo Printer 03'), 'Printer Type' (set to 'Prusa'), and 'Printer Info' (set to 'octoprint2.0f'). A 'Create New Printer' button is at the bottom of the form. The background of the page features a blurred image of a hallway with bookshelves.

Printer Name	Printer Type	Printer Info	
Printer 01	Prusa	octoprint	Delete
Printer 02	Prusa	octoprint2.0f	Delete

Create New Printer

Printer Name	Printer Type	Printer Info
Demo Printer 03	Prusa	octoprint2.0f

[Create New Printer](#)

Manage Materials (ADMIN)

The screenshot displays a web-based Admin Panel for managing materials. The top navigation bar is red, featuring the FJLRS logo on the left and an ADMIN USER - Logout link on the right. Below the navigation, a banner image of a modern office interior serves as the background for the Admin Panel. The main content area is titled "Admin Panel" and includes tabs for Notes, Users, Alert Systems, Printer Management, and Material Management, with Material Management being the active tab. The "Manage Print Materials" section contains a search bar labeled "Search Materials" and a table with columns for Material Name, Material Type, and Material Price/Qty. The table shows two rows of data. Below this is a "Create New Material" form with fields for Material Name, Material Type, and Material Price/Qty, and a prominent orange "Create New Material" button. The bottom of the page features a decorative footer image of a hallway.

Submitting a File and Queue Job



Print Queue Overview

3D Print Lab

[Current Print Queue](#)[Completed Print Jobs](#)[Table View Settings](#)

Search Print Jobs

Description	Material ID	Created At	Submitted By	Status
URGENT! I didn't get this one printed in time!!!	607caa9fb6dc944cc4ca02f0	2021-04-18T19:21:03.450Z	Student User	Submitted
LAB JOB - For cubby hole project	607caa82b6dc944cc4ca02ee	2021-04-18T19:21:03.450Z	Employee User	Submitted
LAB JOB - Filament organizers	607caa89b6dc944cc4ca02ef	2021-04-18T19:21:03.450Z	Employee User	Submitted
None Provided	607caa82b6dc944cc4ca02ee	2021-04-18T19:21:03.450Z	Demo User	Submitted

Items per page: 5 1 - 4 of 4



Print Queue Detail

≡ FJLRS

ADMIN USER - Logout

Job Details

Submitted By: *Student User*
Created At: *04/18/2021 19:21*
Description: *URGENT! I didn't get this one printed in time!!!*
Material: *Light Grey PLA*

[Download File](#)

Current Job Status
Assigned

Assigned Printer
Demo Printer 03

Comments

- **ADMIN USER** *04/18/2021 23:15*
Sorry, but I am unable to expedite your request
- **Student User** *04/18/2021 23:15*
I understand, I was foolish in my ways
- **Student User** *04/18/2021 23:15*
It should still be printed before Friday though right? 😊

comment

Assign Printer
Sets status to 'Assigned'

Demo Printer 03

Change Job Status

Select a status

fjrsddb01.printqueueitems

Documents

fjrsddb01.printqueueitems

Documents Aggregations Schema Explain Plan Indexes Validation

FILTER **OPTIONS** **FIND** **RESET** **...**

ADD DATA **VIEW** **REFRESH**

Displaying documents 1 - 7 of 7

`printStatus: "Completed"`
`__v: 0`

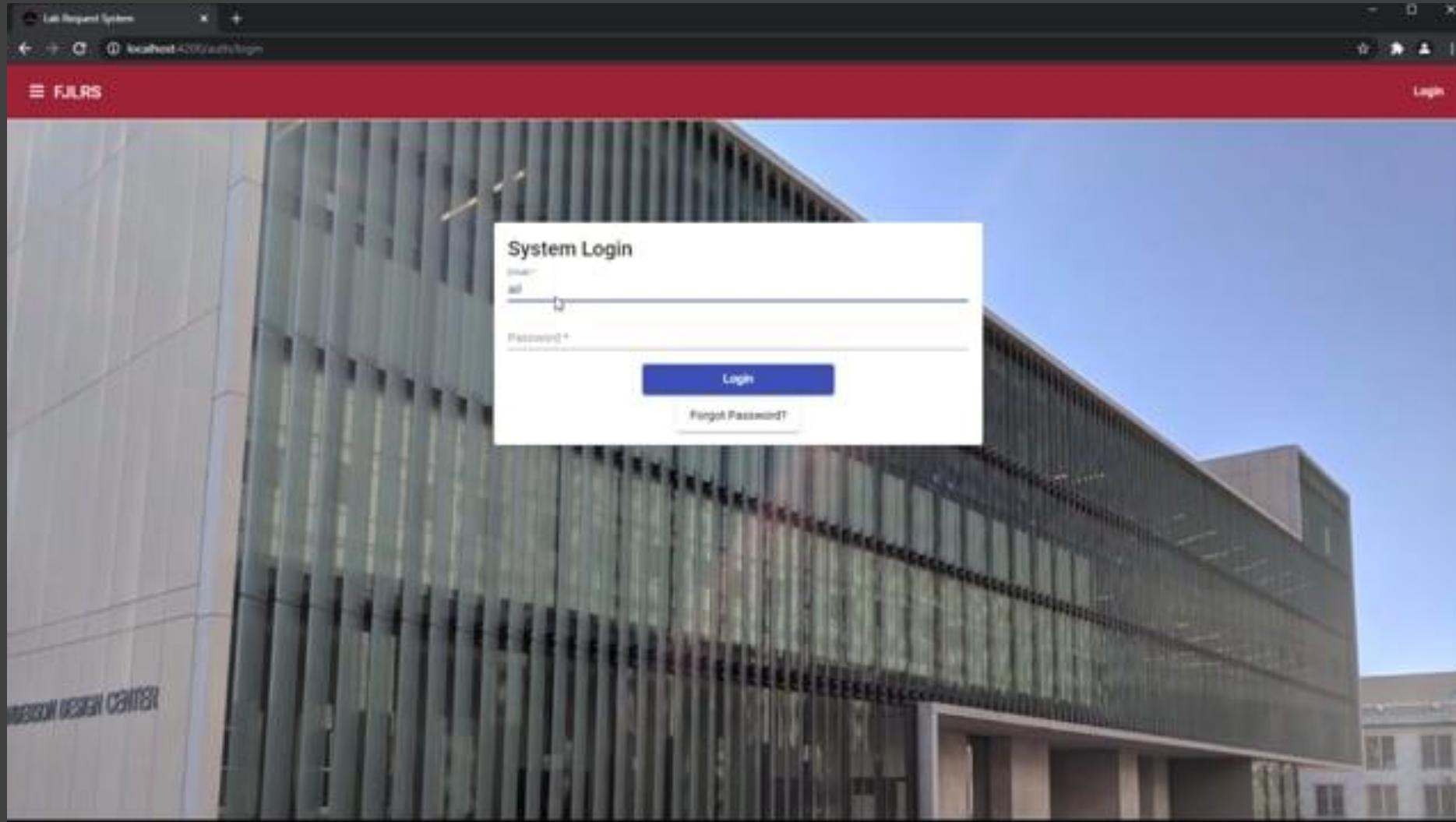
`_id: ObjectId("607c8150846bf45094860606")`
`createdAt: 2021-04-18T18:57:30.795+00:00`
`description: "None Provided"`
`fileId: "1618772304203-flush_cutter_holder_rounded_edges.STL"`
`materialId: ObjectId("60651e8232d47e42f8ca320b")`
`submittedBy: ObjectId("60024e935b1f944d50e09447")`
`printStatus: "Completed"`
`__v: 0`

`_id: ObjectId("607c847292634508445ffbc2")`
`createdAt: 2021-04-18T19:11:14.428+00:00`
`description: "None Provided"`
`fileId: "1618773106115-cutter_holder_square_edges.STL"`
`materialId: ObjectId("6066341e3dd6e74218c336bd")`
`submittedBy: ObjectId("60024e935b1f944d50e09447")`
`printStatus: "Completed"`
`__v: 0`

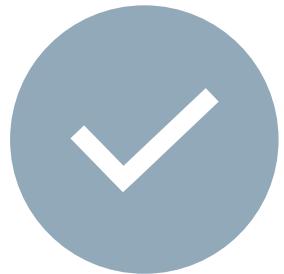
`_id: ObjectId("607cae67b6dc944cc4ca02f1")`
`createdAt: 2021-04-18T19:21:03.450+00:00`
`description: "URGENT! I didn't get this one printed in time!!!"`
`fileId: "1618783847887-Kali_Keychain.stl"`
`materialId: ObjectId("607caa9fb6dc944cc4ca02f0")`
`submittedBy: ObjectId("60024e935b1f944d50e09447")`
`printStatus: "Submitted"`
`__v: 0`

Print Queue in Database

Checking the Print Queue



In the Future



Update the student when their job is complete



Ability to upload multiple files per job item submission



Adding an STL Viewer to allow for users and admins to view the file in real time



Generate a dynamic invoice that takes the size and material prices into account

Thank you!