



# Secure and Remote 3D Printing

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# General Information:

## Meeting Dates:

- September 17th
- September 30th

## Faculty Sponsor

Dr. Sid Bhattacharyya

## Client

Mike C Newton

# Milestone 1



1. Investigative tools
  - a. Django web development, CAD (3D modeling)
2. Hello World demos
  - a. Upload and Home web pages
3. Requirement Document, Design Document, Test Plan
4. Resolve Technical Challenges
  - a. Django framework, Ender-3, G-code and 3D modeling
5. Collaboration Tools
  - a. Google drive (docs, slides, calendar), Discord, Email, Github

# Requirements



1. Security
  - a. SQL Query, Cross Site Forgery Protection, DoS Protection, Exterior File Storage, File Hashing, User Privileges, Protect User Information
2. User Interface
  - a. Home Page, User Registration, Admin Approvals, Mobile Friendly, Navigation Bar, Login page, Submit button
3. File Uploading
  - a. File Information, File Limitations, Upload Directory

# Requirements Cont.



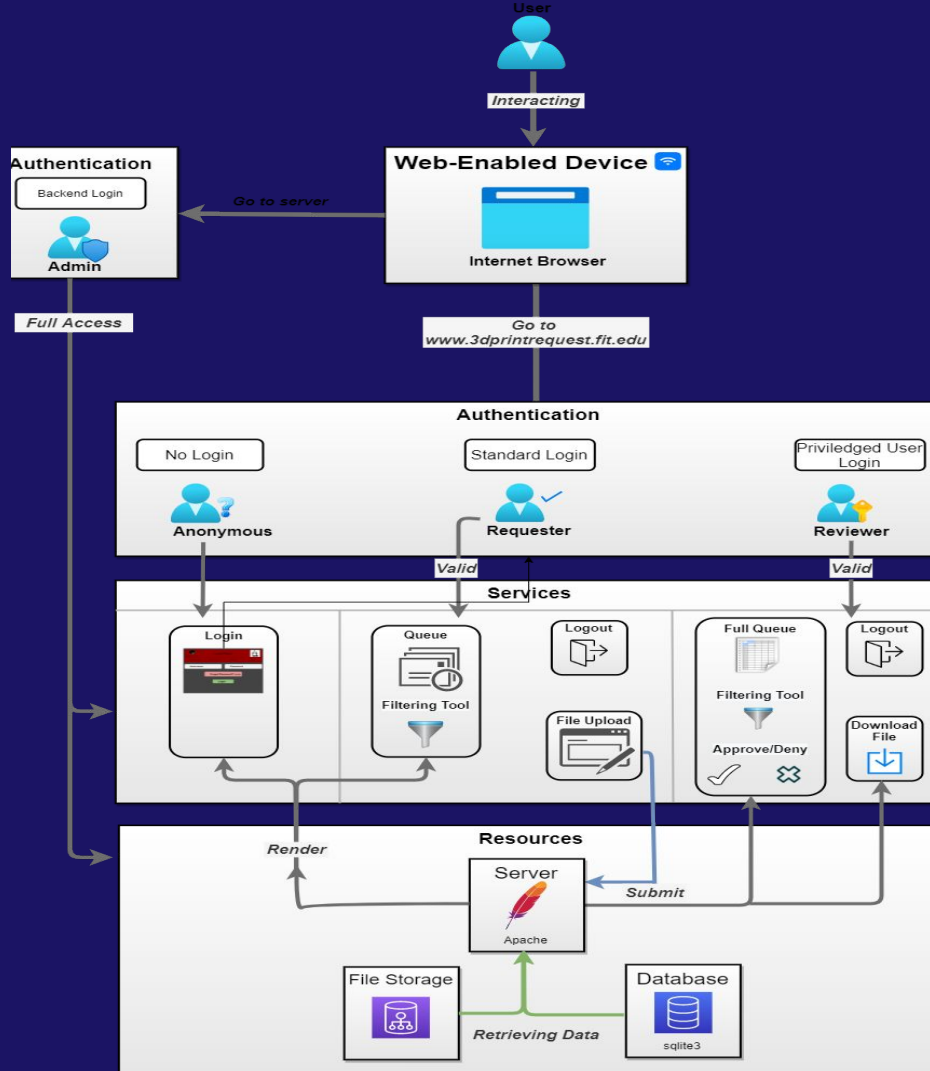
## 4. File Queue

- a. Queue Page (admin/user), Admin Approval/Rejection, Removal of projects (admin/user)

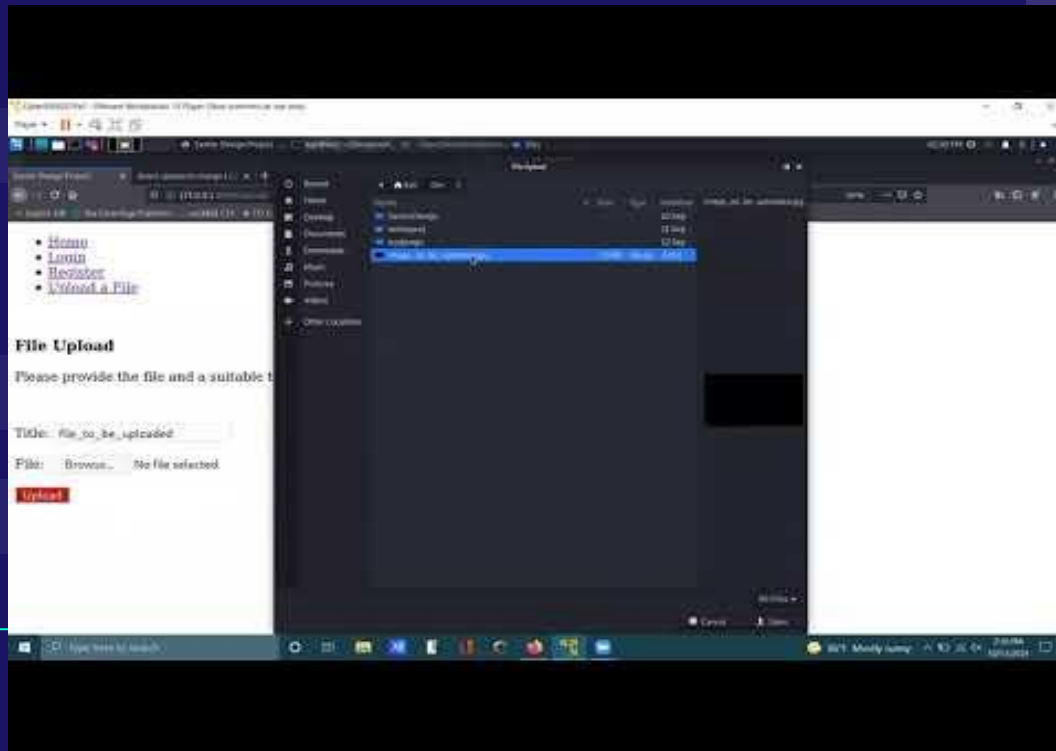
## 5. Backend & Site Deployment

- a. Robots.txt, Domain Registration, Deploying web server, Forwarding requests, Enabling SSL/HTTPS

# Architecture Diagram



# File Upload Demo



<https://www.youtube.com/watch?v=nANZZkc1wSo>

# Admin Page

Django administration

WELCOME, SENIOR. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

## Site administration

### AUTHENTICATION AND AUTHORIZATION

#### Groups

[+ Add](#) [✎ Change](#)

#### Users

[+ Add](#) [✎ Change](#)

### UPLOAD

#### Upload\_models

[+ Add](#) [✎ Change](#)

## Recent actions

### My actions

[+ upload\\_model object \(2\)](#)  
Upload\_model

[✗ upload\\_model object \(1\)](#)  
Upload\_model

[+ upload\\_model object \(1\)](#)  
Upload\_model



# Successful Upload (Admin View)

Django administration

WELCOME, SENIOR. [VIEW SITE](#) / [CHANGE PASSWORD](#) / [LOG OUT](#)

Home › Upload › Upload\_models › upload\_model object (7)

AUTHENTICATION AND AUTHORIZATION

Groups

+ Add

Users

+ Add

UPLOAD

Upload\_models

+ Add

«

Change upload\_model

upload\_model object (7)

Title:

BlackScreenTest

Description:

Testing

Summary:

123

Upload:

Currently: user\_uploads/2021/10/04/image\_to\_be\_uploaded.jpg

Change: 

Browse...

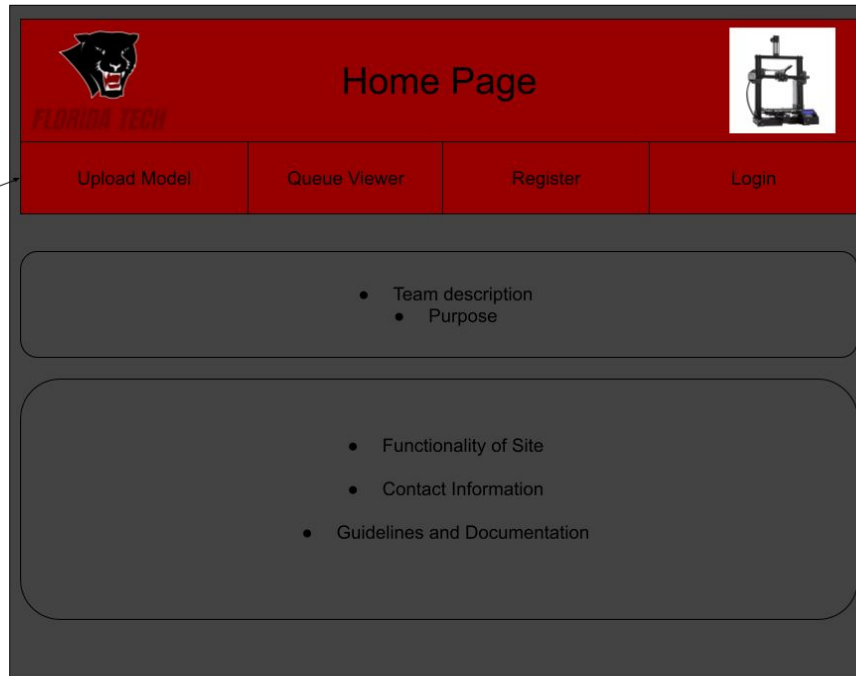
 No file selected.

Delete

Save and add another

Save and continue

# Home Page Mock-up




Navbar


Text Box and  
Images

Text Box and  
Images

# Login Page Mock-up



FLORIDA TECH

Login Page

Upload Model

Queue Viewer

Register

Login


Username

Password


Forgot Password? (Link)

Login

# Registration Page Mock-up



## Registration Page



Upload Model	Queue Viewer	Register	Login
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First Name

Last Name



Username

Email

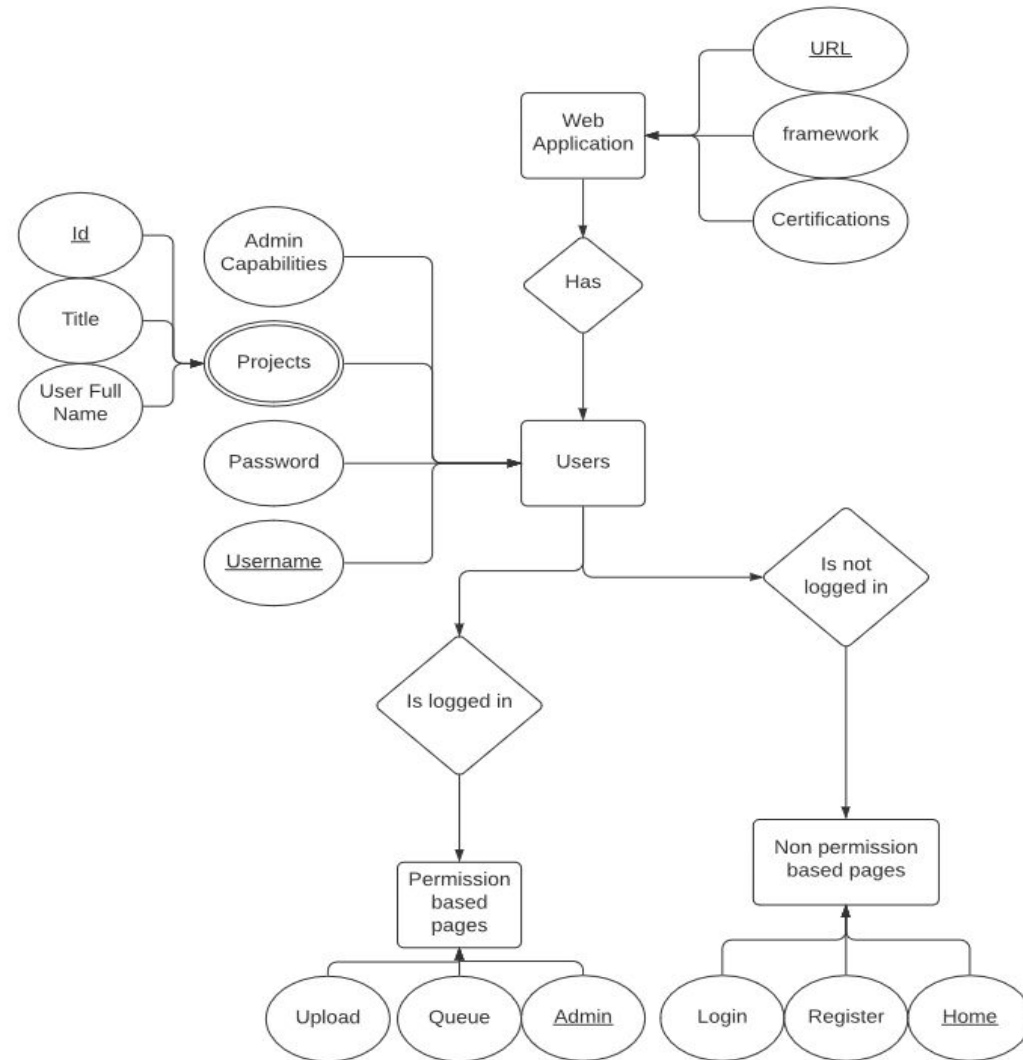
Password

Submit

# Queue Page Mock-up

<div><div>Queue Page</div></div>			
Upload Model	Queue Viewer	Register	Login
Username	Email	Upload Name	Queue Position
JaneDoe	janedoe@gmail.com	JanesFile.gcode	1
JoeShcmo	joesh@gmail.com	JoesSecretPrint.gcode	2
...	...	...	...
...	...	...	...
DrOc	droc@gmail.com	drocprint.gcode	11

# Database ER Diagram



Entity Table:

Web Application

Users

Permission Based Pages

Non-Permission Based Pages

Table Attributes:

web\_app(primary key: url, framework, certifications)

users(primary key: username, password, multi-valued: projects, admin capabilities)

perm\_pages(primary key: admin, queue, upload)

non\_perm\_pages(primary key: home, login, register)

# Test Cases:



1. Functionality Tests:
  - a. Network Connectivity
  - b. User Creation
  - c. Web Page Restrictions
2. Security Tests:
  - a. Cross-Site Scripting
  - b. Input Sanitation
  - c. DoS Protections

# Milestone 2



1. Implement, test & demo *front end of the web application*
2. Implement, test & demo *user features for uploads and creating accounts*
3. Implement, test & demo *Admin account abilities*



**Any  
Questions?**

**Thank You!**