



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.



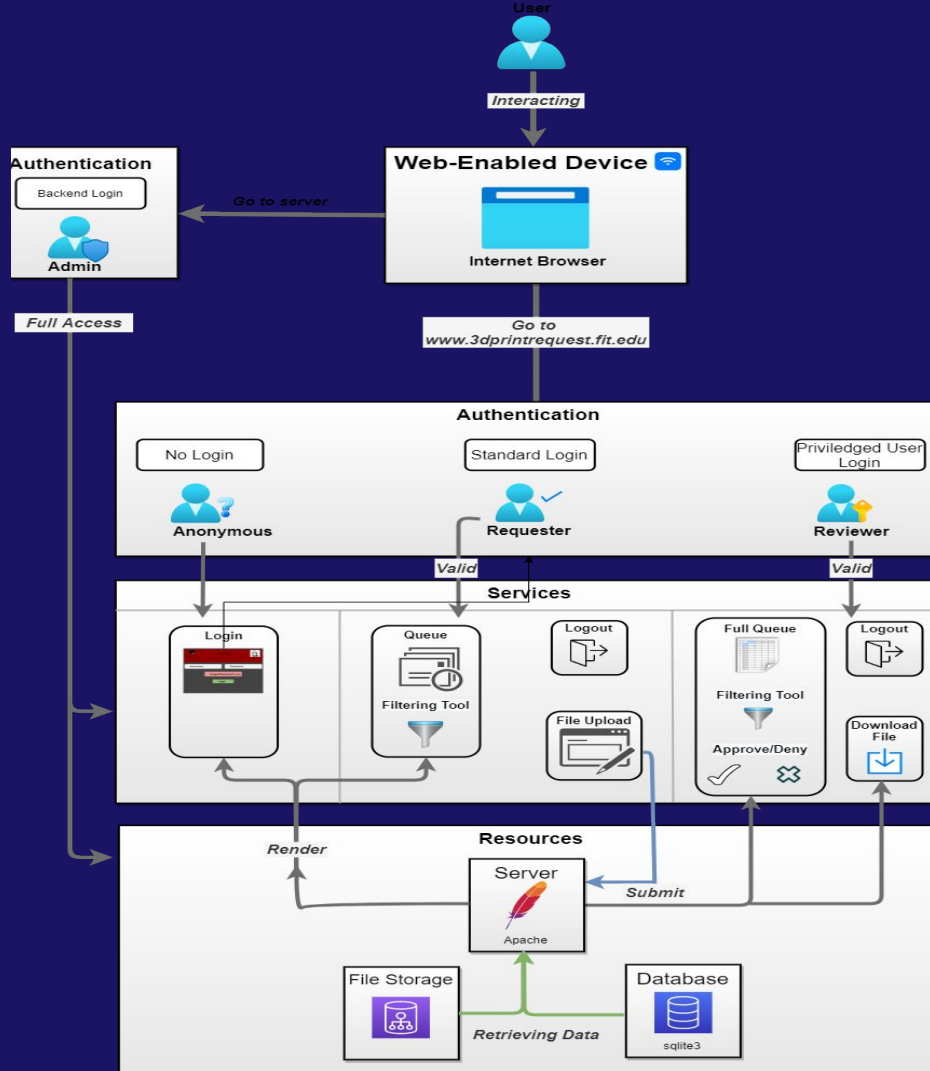
4. File Queue

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

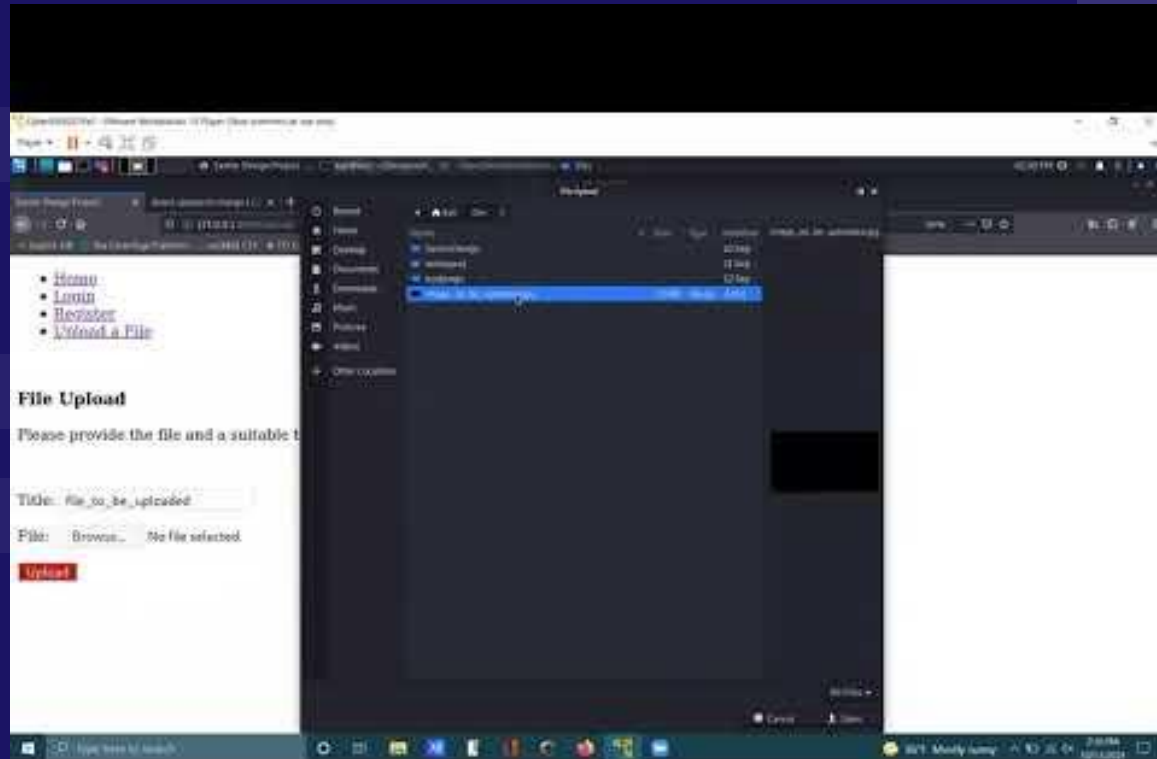
5. Backend & Site Deployment

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

Architecture Diagram



File Upload Demo



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...

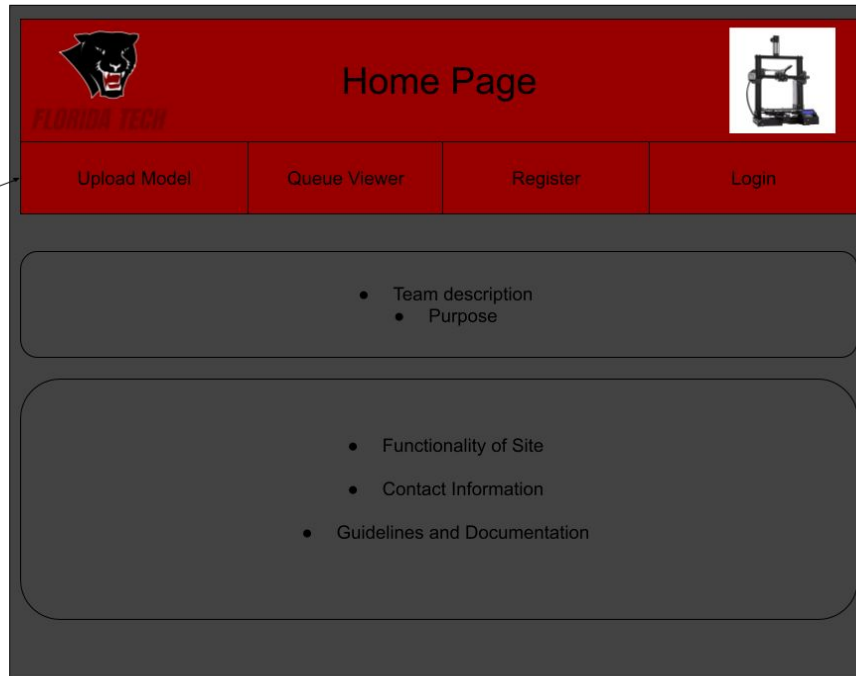
 No file selected.

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

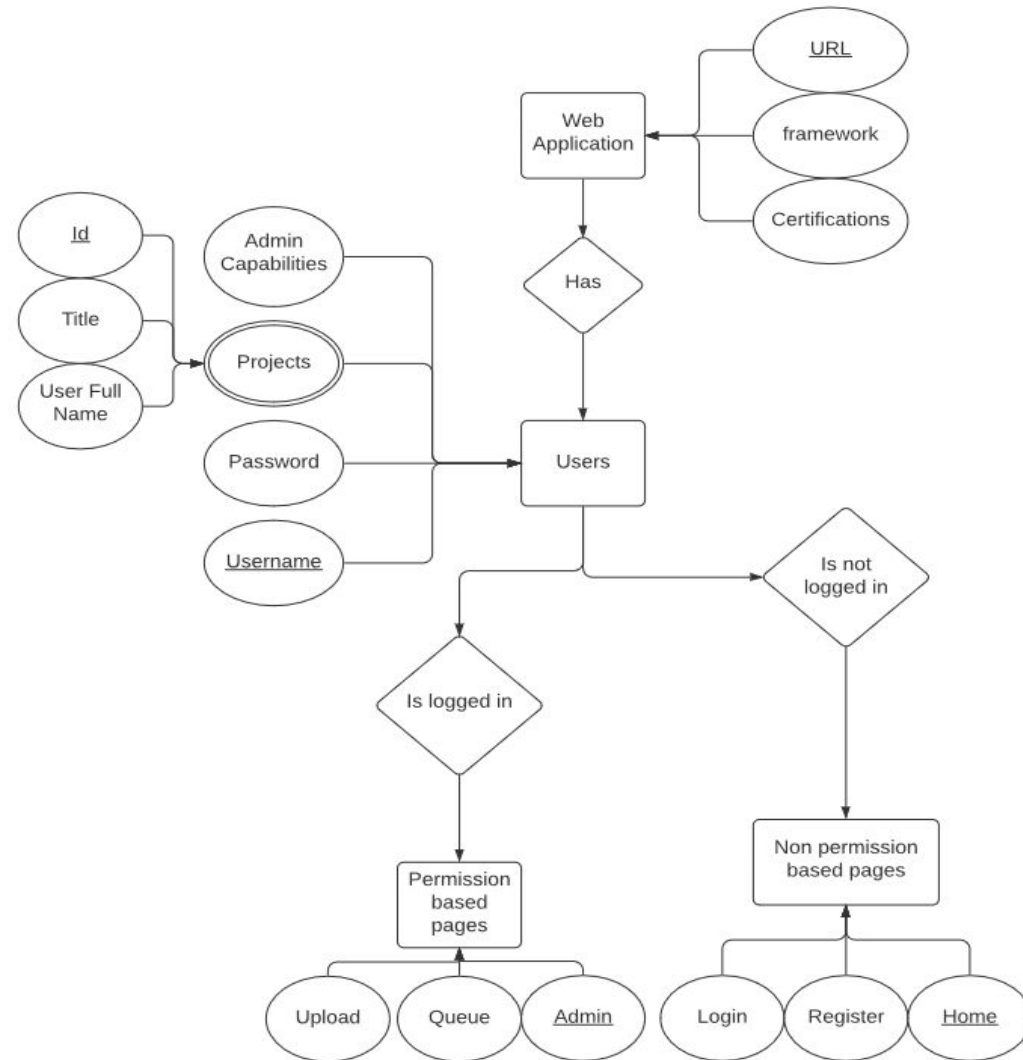
Password

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!