# STAM

Technical Review

# Introduction / CV

- Senior Undergrad ISE (2020)
- NCSU OIT ClassTech WebTool Developer - 4 years
- Co-op Manufacturing Engineer - 1 year

- Why Me?
  - Spring 2019 - ISE 316 - Free Textbook

# Summary

❖ Project
  ➢ Semi-automated academic repository and resource hub
❖ Goals:
  ➢ Minimize student costs
  ➢ Increase Professional Participation / Partners
❖ Topics:
  ➢ Fundamentals to Engineering
  ➢ Security, Features and Constraints, Authorship, and Content
❖ Audience: Academic Community

**Easy to update, Simple to access, and Contains the desired knowledge**
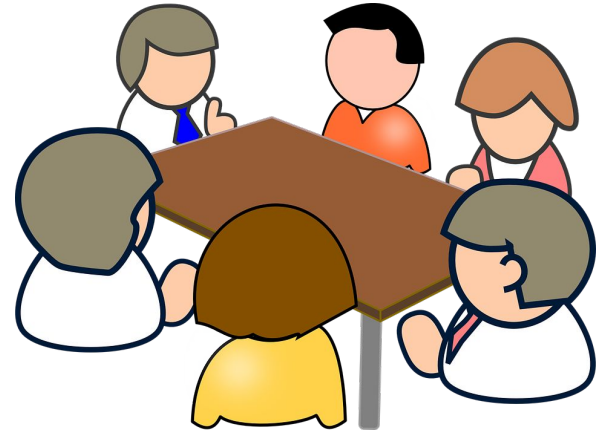
# Agenda -- Technical issues associated with a repository

Discuss - Requirements and Goals

Describe - Features, Constraints, and Welfare

Define - Resources, Interaction, Security, Roadblocks

Decide - Platform, Structure, Credit

# What should the repository do?

Store materials
- Chapters
- Tests and quizzes
- Presentations
- Videos

Users
- Students
- Instructors
- Administrators

Features
- Economic
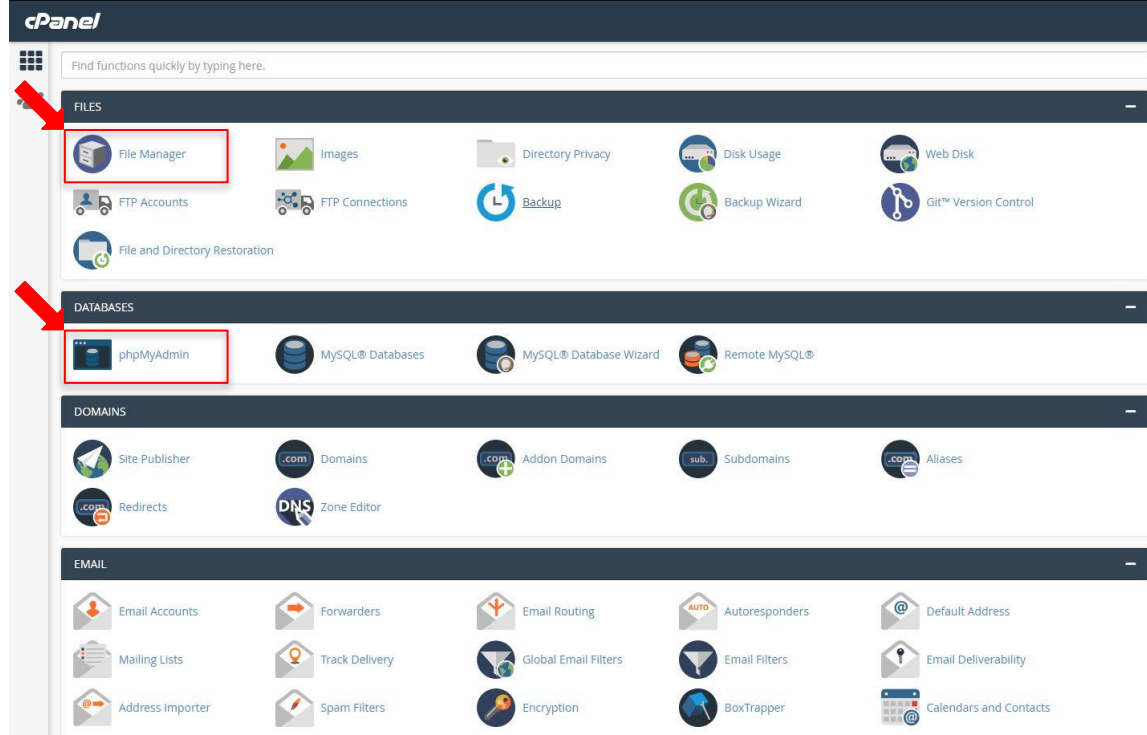- Easy to use

# Platform

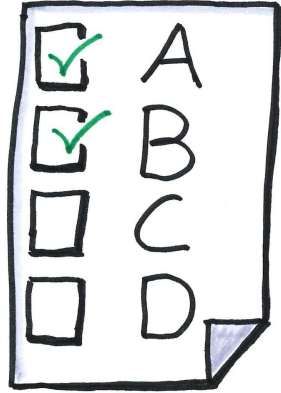Custom cPanel Server

     NCSU OIT Hosting

     Intuitive Controls

     Increased Functionality

     Total Customization

# Materials

1. Lectures - Presentations, Notes
2. Examples
3. Tests / Quizzes
4. Textbook Sources
   a. PDF?
   b. TEXT?
   c. HTML?
5. Videos
   a. Lectures
   b. Demonstrations
      i. Lab Safety
      ii. Machine Setup

# Competition?

Khan Academy

Openstax.org, FlatWorld, OpenEd, etc.

Youtube

# Opportunity

Built By and For Academic Subject Matter Experts (You)

Supported through a collective interest in furthering your field

Shared materials allows for global education, and online learning

Enhances current schools with 1 singular depot of information for students

Provides a starting point for new programs or new faculty

# Network of Academics

Connecting Across Campus

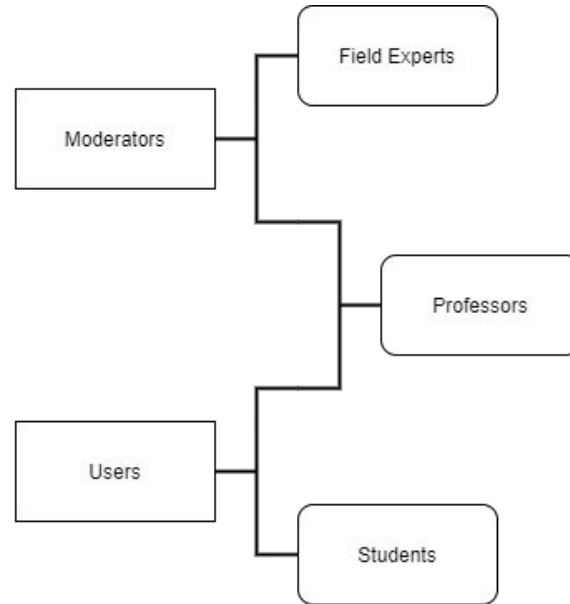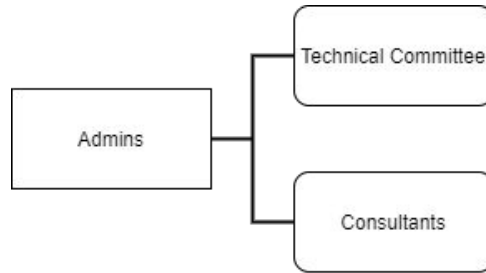Utilize 3PL for Forums/FAQ (Piazza) - Link between Admin and Mods

Social Aspect Critical to "Re-upload Feature"

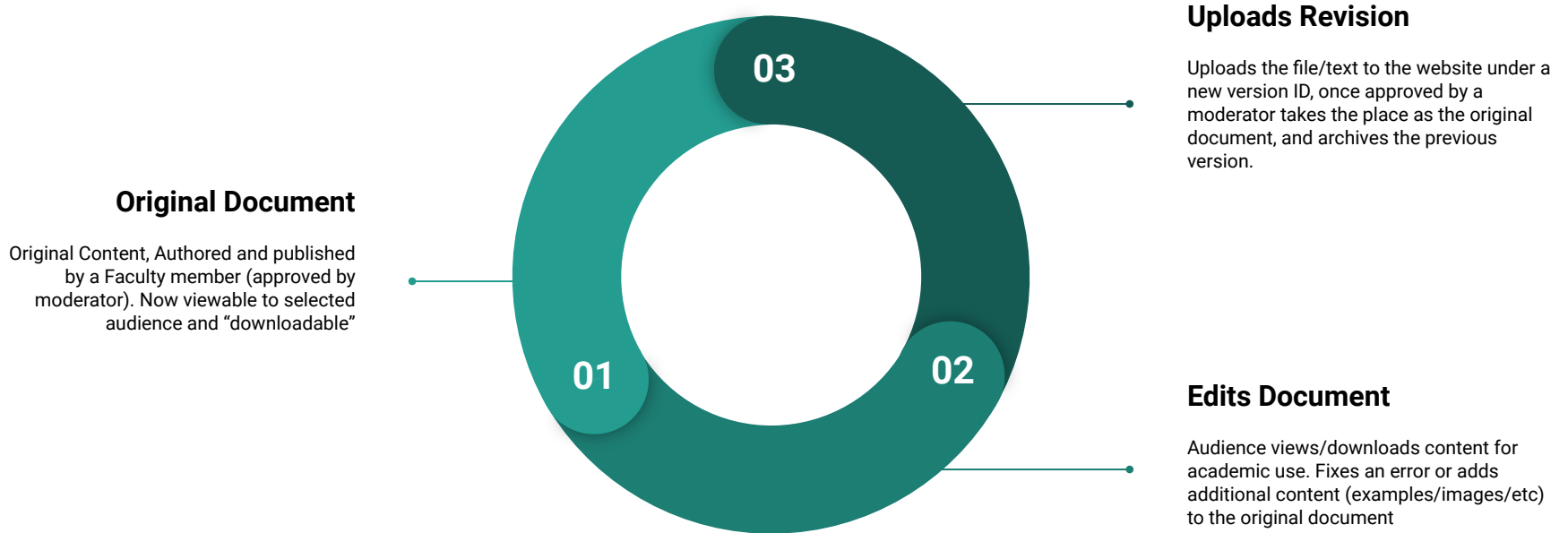Larger Community built to support the website
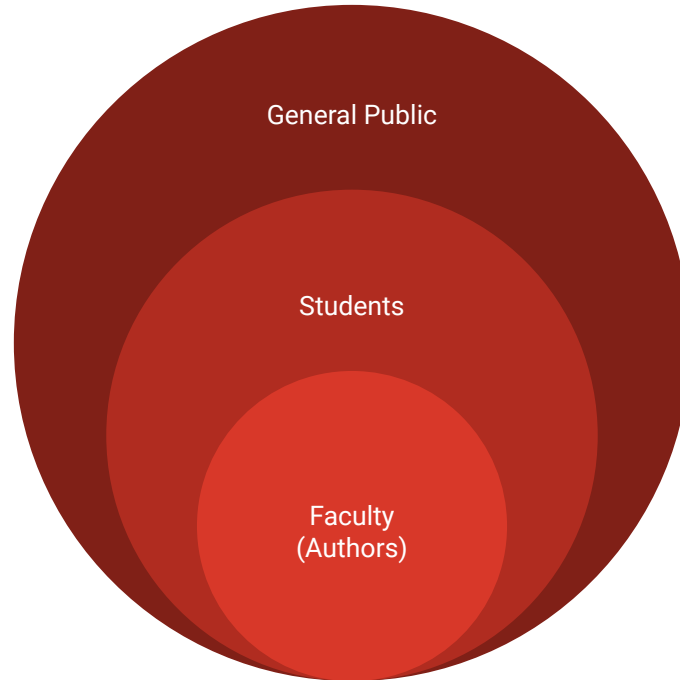
# Technical Hierarchy

- Admins - Site Controllers, assign access
- Moderators - technical experts, volunteers to review submissions
- Users - provide materials, and use site

# Technical Process of Similar Sites

**03**

**02**

**01**

## Uploads Revision

Uploads the file/text to the website under a new version ID, once approved by a moderator takes the place as the original document, and archives the previous version.

## Original Document

Original Content, Authored and published by a Faculty member (approved by moderator). Now viewable to selected audience and "downloadable"

## Edits Document

Audience views/downloads content for academic use. Fixes an error or adds additional content (examples/images/etc) to the original document

# Security



General Public

Students

Faculty
(Authors)

# General Administration

- View Rights
  - Limited based on Association
  - Login Requirements? (Custom/Shib/3P)
- Form to submit materials for review
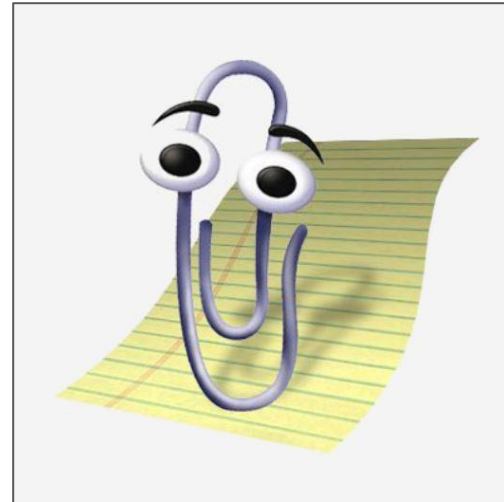- Free access to preliminary/required Materials

# Students

- View Rights
- Access to course materials
    - Textbook Resources
    - Examples
    - Practice Problems / Industry Open Source
    - Video Lectures / Lab Instructions?
- Report Inaccuracies
- Contact Experts?

# Faculty / Staff

- View/Write Rights
- Access to:
  - Course materials viewable to students
  - Shared Lectures on Subjects
  - Sample Exams/Quizzes
- As Moderators: (Potentially IP Credit holders)
  - Provide corrections to subject materials
  - Maintain Revisions
  - Provide new materials
- As Admins:
  - Assess/Assigns new moderators
  - Monitor/Expand Website

# Authorship

Documents receive unique ID

Authors have receipts to their uploads under their profile

Moderators prevent upload conflicts (similar to Github)

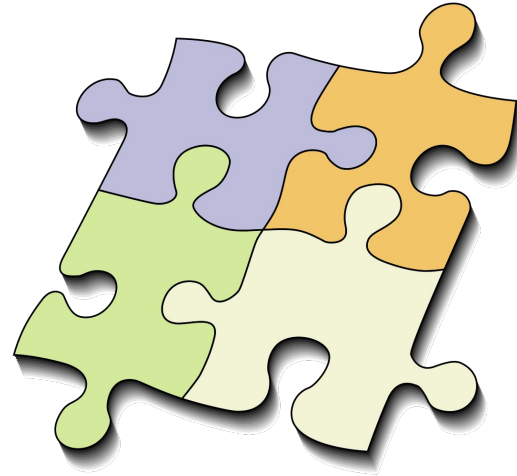Authors alerted to revisions (as Subject Matter Experts)
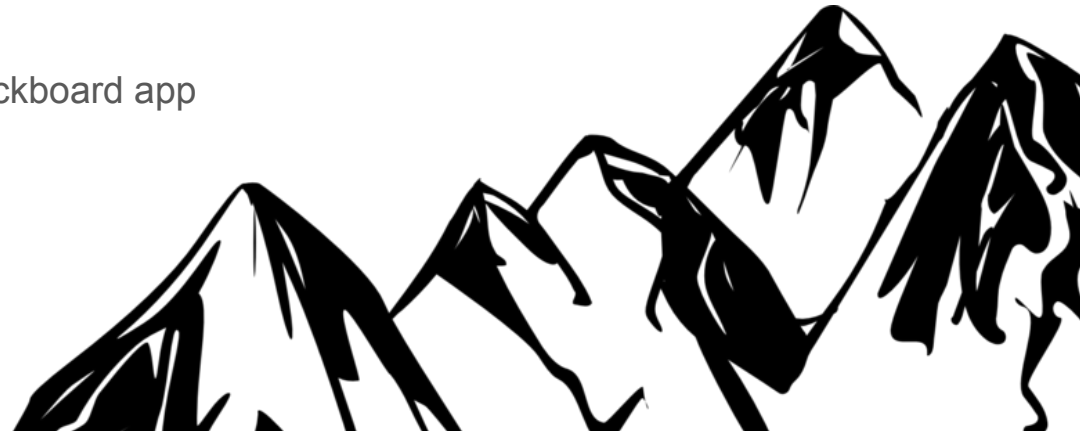
# Resources

Monetary

Material

Volunteers / Admin

Storage (Virtual)

# Constraints

- Accessibility
  - Easily to gain access
  - Desktop / Mobile
- Security
  - Sensitive materials will be protected
  - Currently Limited to NCSU
- Flexibility
  - Fit a variety of course offerings
  - Simply add material to current blackboard app

# Road Blocks

Tracking

Versioning

IP

Funding/Operations

Software platform(s)

    Publishing

    Repository access

# Next steps

Demonstration site

Volunteers to assist with Technical Implementation

Website (continued)

Create a convincing story that we can pull this off

# Questions