CS 3604 Case Study Library

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Project Recap

- Client: Dr. Dunlap, CS 3604

- Digital Library Program (DLP) held students’ case studies from CS 3604
  - Reports & Presentations
  - Used by students to see examples of past projects
Problem Recap

- Had no student authentication

- Became harder to maintain over time
  - AWS Amplify build errors
  - DLP root repository now private
  - 1.5 years out of sync
Changed Approach

- Met with a DLP team developer

- Developed 3 possible plans
  - Pull DLP updates and continue
  - Host on DLP managed instance
  - Build custom site

- Decided to build custom site
Tools Used

- Microsoft Azure
  - Python: CSV module

- MERN Stack
  - React: Presentation Layer
  - Express & Node: Application Layer
  - MongoDB: Database Layer
Presentation Layer
Presentation Layer Status

Work Completed

- Homepage
- Navigation bar
- Search page
- Profile page
Application Layer

End User

Profile API

Search API

File API

MongoDB

File System
Application Layer Status

Work Completed

- Layer set up with controllers and routes
- Profile, Search, and File API completed and tested with Postman
Work Authentication

- **Microsoft Azure**
  - Invite students as external users
  - Uses app registration to grant authentication

- **JavaScript library: msal-react**
  - Uses auth templates to display webpages
  - Determined by whether user is authenticated
Automation

- Must invite 100s of students a semester

- Python script for 3604 instructors
  - CSV module: Makes CSV file of students’ emails

- Microsoft AD: imports file as a batch invite
Authentication Progress

Work Completed

- Authentication for students inside Microsoft AD tenant
- Restricting web pages based on authentication
- Automation of Microsoft AD’s batch invite process
Database Layer

- MongoDB is a NoSQL database
  - Using schema to enforce formatting
  - NoSQL is flexible for future changes

- File data stored on disk
  - Simple, easy to access
Database Layer Progress

Work Completed

● MongoDB schema created

● API updates to DB tested

● File system structure created
Future Work

- Finish the edit profile page (current capstone group will complete)
- Extensive automated testing
- Add levels of authentication, including administrative access
- Create in depth data backup plan with AWS S3 or other remote storage
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References


Questions?