HOKIEGUIDE
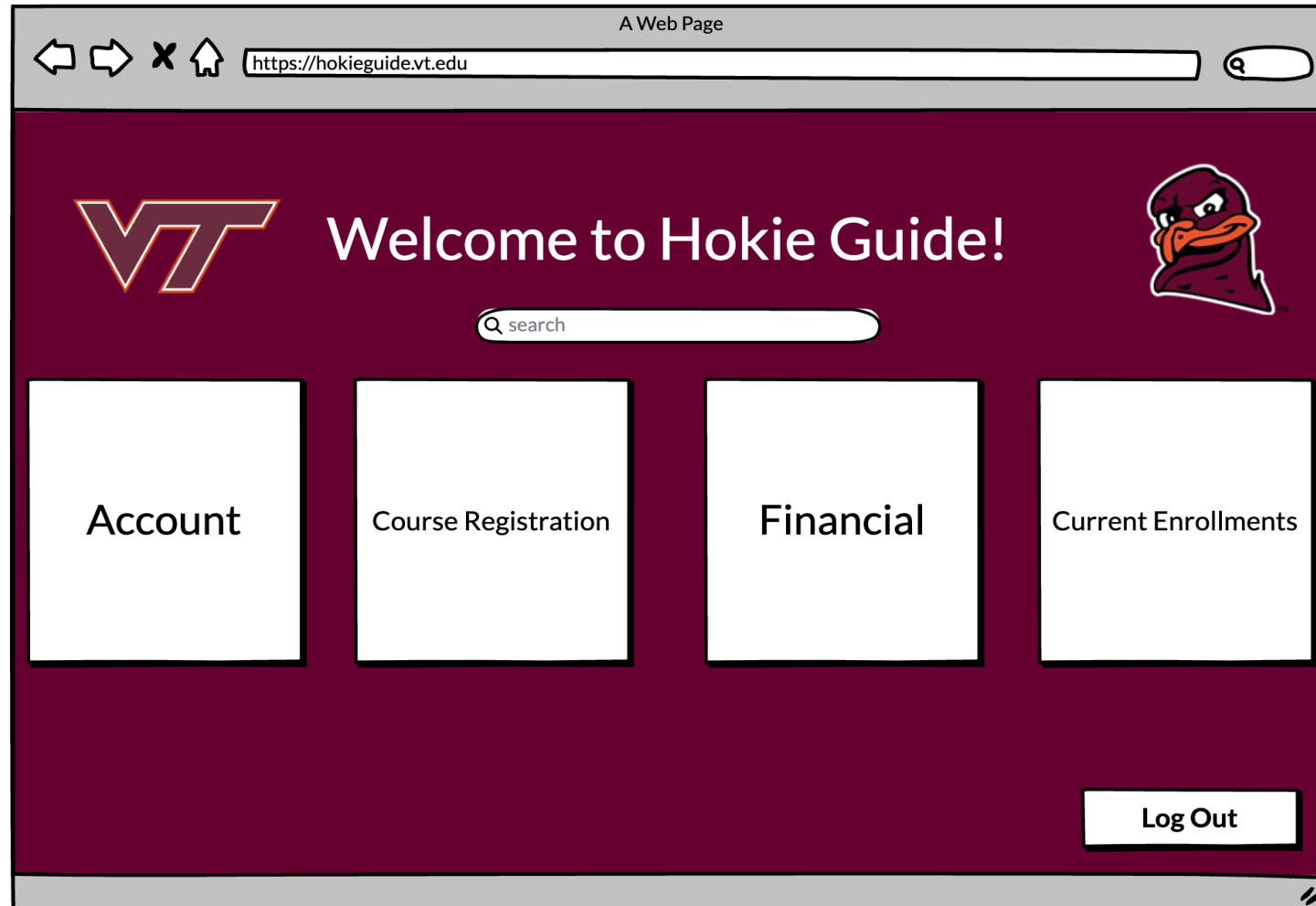
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INTRODUCTION TO HOKIEGUIDE

- HokieGuide is a one-stop shop for any resources a student may need while enrolled at Virginia Tech

- AI-powered features to ensure a smooth and comprehensive college experience such as course recommendations, course difficulty, career guidance, and final grade prediction

- Aids students in course registration by allowing access to wait-list positions, setting up meetings with advisors, and notifications for add/drop deadline and class registration status

- Streamlines financial information with a scholarship application tracker, and a system to check tuition balance and payments

- Assists students to excel in their classes with an assignment tracker, office hour information site, and exam schedule retrieval

HOKIEGUIDE HOME PAGE

MOST APPEALING FEATURES

- HokieGuide has a plethora of appealing features that could prove helpful and useful to a lot of students, including but not limited to:

  o Course difficulty estimation

  o AI-Powered career guidance

  o AI Grade prediction

  o Course Recommendations

- Note: a number of these features utilize AI, which provides a more personalized experience for students

ESTIMATING COURSE DIFFICULTY

A Web Page

https://hokieguide.vt.edu

Course Difficulty

Select your class: Math 1225

Course description: MATH 1225 is a four-credit first-semester calculus course that is included in the Pathways curriculum for Quantitative and Computational Thinking. The main topics covered are limits, continuity, differentiation, and integration.

Average GPA of students: 3.04

AI difficulty estimate: 8/10, hard course

- Uses AI to analyze several statistics regarding the course, such as the drop rate, GPA distribution, and course level

- An estimate of the difficulty will be generated based on these statistics

- Some factors will be weighted more than others when the AI determines the difficulty. Ex. GPA distribution > course level

AI POWERED CAREER GUIDANCE

- Uses AI to recommend some potential career paths based on information from the student's profile (classes taken, major, etc.)

- Also searches for jobs that are currently open on the web that match the student's profile

- Upon clicking the links, users will be taken to a website that provides more insight on the potential career, or a website to apply for a role

AI GRADE PREDICTION

- Analyzes student's current performance based on completed assignments, exams, and current grade (manual input also accepted)

- Uses AI to predict the final grade on the class based on its analyzation and course grading criteria

- Has buttons for the student to look at their professor's office hours as well as to contact their professor or advisor

COURSE RECOMMENDATIONS

A Web Page

https://hokieguide.vt.edu

Course Recommendations

Input your interests: Math

Course	Prerequisites	Add
Math 1225	None	Add
Math 1226	None	Add
Math 2114	Math 1226 or B in Math 1225	Add
Math 2204	Math 1226	Add
Math 2214	MATH 1114 or MATH 2114 or MAT or MATH 2405H; and Math 1226	Add

- Uses AI to analyze information based off the student's academic performance/standing, course content, and student interest

- Recommends courses to take based off this information with an add course link

- Shows prerequisites to the course as well as giving a link to a webpage about the course content

MAJOR CHALLENGES/LIMITATIONS/CONSIDERATIONS

- Accessing confidential User Data (Class Schedule, Financial Information, etc.)

- Integrating external services such as GPA Distribution, Job Postings, Calendar

- Scalability

- User-friendly UI Design

SOLUTIONS

- User inputs confidential data manually (through input fields or PDFs or transcripts, payments, etc.), then compare it to web-scraped data

- Ensure the correct APIs are used to access other services and correct data is scraped

- Implement scalable cloud infrastructure (AWS, Azure, etc.)

- Created a more simplistic UI, and improved useability for the user

LESSONS LEARNED

- The Importance of Real-Time Validation

  - What Happened: Early in testing, mismatches between user inputs (like class schedules) and scraped data weren't flagged immediately, causing user frustration.

  - Lesson: Implementing real-time validation (e.g., checking course data during add/drop as it's uploaded) improved both user experience and app reliability.

- Prioritizing Security from Day One

  - What Happened: Testing revealed vulnerabilities in storing and transmitting sensitive user data

  - Lesson: Security must be a priority from the start, with encryption, secure protocols, and regular audits to potential threats.

- Handling Inconsistent Data Inputs

  - What Happened: PDFs and manual inputs had formatting issues, breaking validation against web-scraped data.

  - Lesson: We implemented robust data parsing tools and error handling systems, teaching us the importance of accounting for messy real-world data during development.

SUMMARY

- Purpose: A centralized platform to enhance students' academic and personal growth through innovative tools and user-friendly features.

- Highlights: Offers personalized assistance with academic planning, career exploration, and managing essential university tasks.

- Innovation: Employs AI to provide tailored insights, recommendations, and support for a seamless college experience.

- Development Takeaways: Focused on security, scalability, and usability to ensure practical implementation and user satisfaction.

- Vision: To create an all-in-one solution that simplifies and enriches the student journey at Virginia Tech.