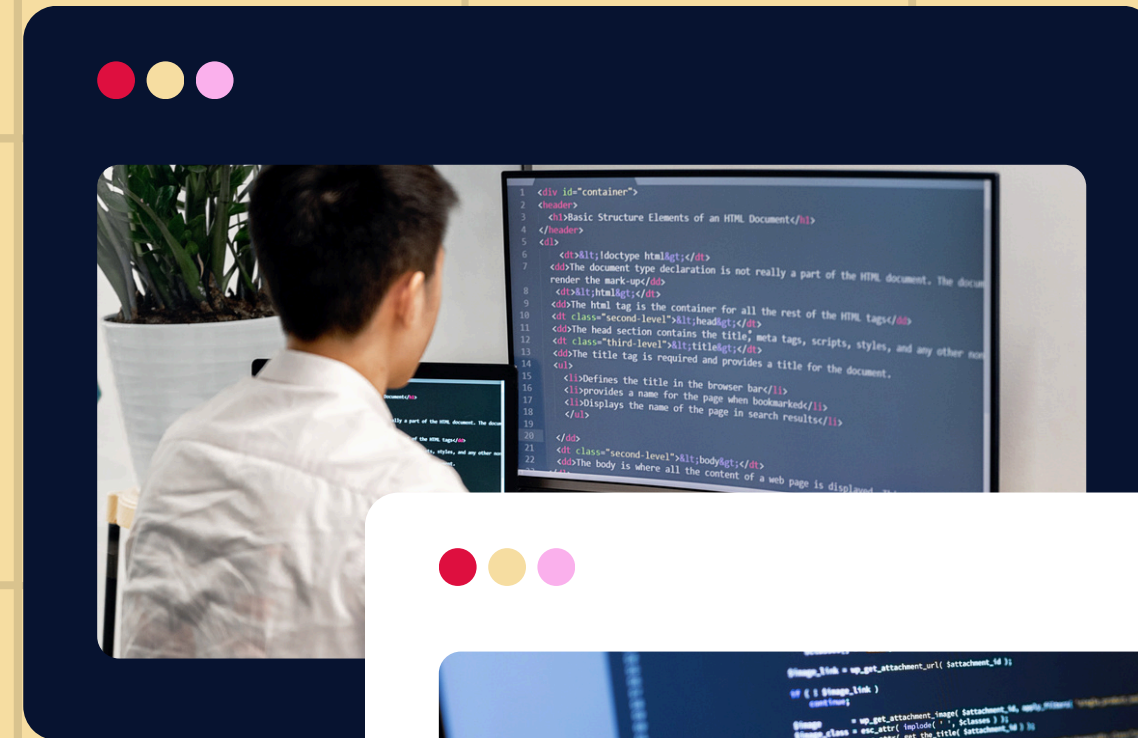# HU COURSE SWAP PORTAL

Presented By

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Objectives

- Allow students to request course swaps
- Enable students to search compatible swap matches
- Store and track interest using Firebase
- Notify Users of interested users.
- Build an easy-to-use platform

System Architecture

Back end

Database: Firestore
Authentication: Firebase Auth
APIs: Firebase SDK

Front End

Framework: React.js
UI: Custom CSS + Component-based layout
State Management: React Hooks (useState, useEffect)
Routing: React Router
Buttons: Dynamic behavior

Key Features Implemented

- Login/Sign up using HU credentials only. (Authentication)
- Add swap requests, search for swap requests, delete existing swap requests, and show interest in someone else's posted swap request.
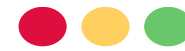
- Get notified when someone shows interest in your request
- View the profile of the user who posted a swap request
- Edit or view your own profile

Testing Strategies

Unit Testing

Tested with planned test cases:
- Submitting empty form shows error
- Submitting valid form adds request to Firestore
- Component renders correctly with props
- Edge cases like missing fields or rapid user input

Manual Testing

- Tested form submission with valid/invalid data
- Verified real-time updates when data was added/removed
- Checked responsiveness on different screen sizes

Component testing

Ensured individual components (Form, RequestCard) rendered as expected

Challenges Faced

Implementing and debugging real-time data syncing with Firestore, ensuring that changes reflected immediately on the dashboard

Integrating notifications revealed inconsistent naming in the database

Tried implementing push notifications via firebase functions and third-party providers like OneSignal and PushWoosh but it was causing too many issues so we opted for a more UI based approach

Combining the different components in UI

Future Improvements

Request Ordering

Order Swap requests with respect to the posting time, i.e. older requests at the bottom. Also add partial searching functionality

Integrate PSCS Student Schedule

Import students' current schedule from PSCS to help them look for requests, also suggest them request wrt to their free slots.

Login/Signup

Add Forgot Password Functionality
Add Remember me Functionality

Algorithm

Algorithm that suggests the requests specific to the major of the student on TOP

Team Members

Ifrah Chishti

Authentication
Notifications
Algorithm to suggest
related swap requests

Roozain Qazalbash

UI
Swap Requests
Functionality

Ayesha Eiman

UI
Database

Amnah Qureshi

UI
Profile Pages
Functionality

Demo Time!

Thank You