

MICHIGAN STATE
UNIVERSITY

Project Plan

Degree Navigator

The Capstone Experience

Team Michigan State University ITS

Chad Capuzzi

Tony Fedewa

Sarah Johanknecht

Maaz Khan

Christian Velkovich

Department of Computer Science and Engineering
Michigan State University

Spring 2020



From Students...
...to Professionals

Functional Specifications

- Current process for checking degree requirements is outdated and not intuitive
- Update the process with a modern UI
 - Check degree requirements
 - Plan schedules
 - Search for courses
 - Access helpful information
- Develop applications for iOS, Android, and web



Design Specifications

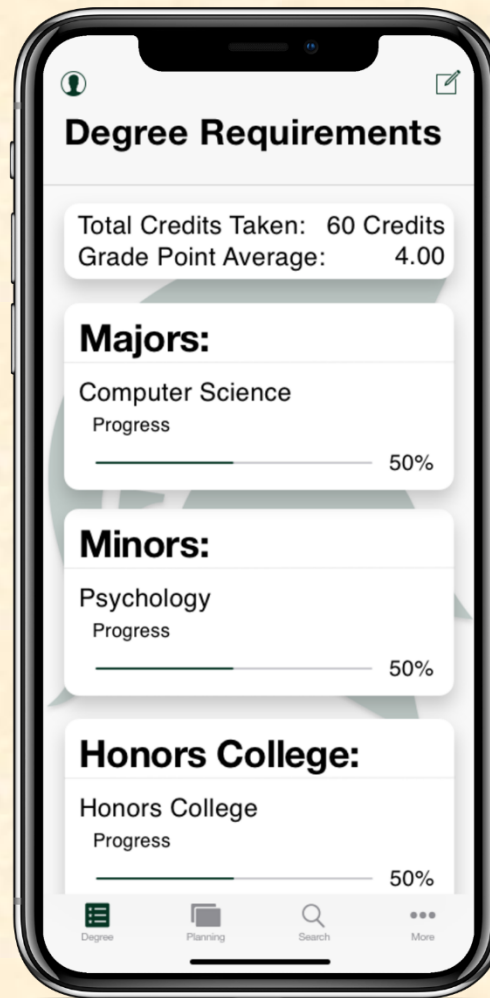
- Design Process
 - Surveyed 206 students to collect pain points and desired features
 - Use pain points for a design workshop to discuss design and features
 - Iterate over design multiple times
- UI
 - Easy to use & understandable
 - Similar flow on web & mobile



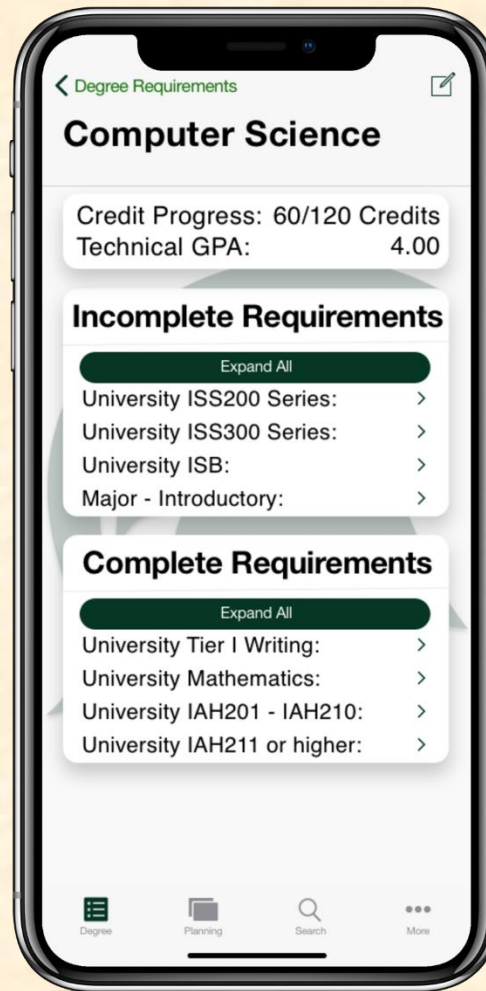
Screen Mockup: Profile



Screen Mockup: Degree Requirements



Screen Mockup: Program Information



Screen Mockup: Degree Requirements on Web

John Doe
Honors College
Overall GPA: 4.00

Degree Requirements

Degree Requirements Degree Planning Search for Courses More

Total Credits Taken: 60 Credits
Overall GPA: 4.00

Majors:

Computer Science
Progress

50%

Minors:

Psychology
Progress

50%

Honors College:

Honors College
Progress

50%



Technical Specifications

- Serverless Framework

- AWS Components

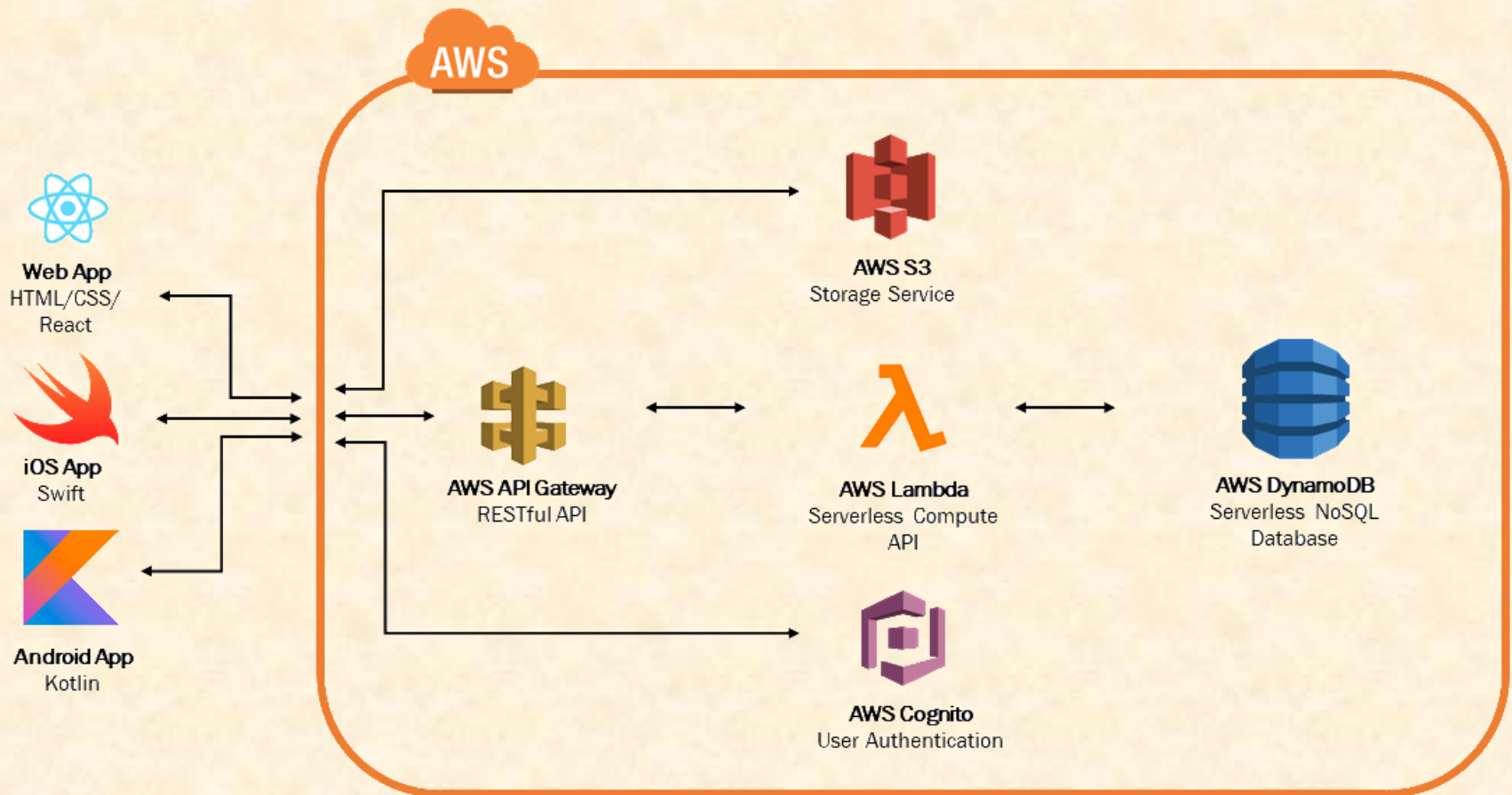
- API Gateway
 - Lambda Functions
 - DynamoDB
 - S3
 - Cognito

- Front-end Components

- HTML/CSS/React for Web
 - Kotlin for Android
 - Swift for iOS



System Architecture



System Components

- Hardware Platforms
 - iMacs in Capstone Lab
 - Personal Android phones
 - Personal iPhones
- Software Platforms / Technologies
 - Xcode, Android Studio, WebStorm for front-end development
 - AWS SDK & Serverless Framework packages for AWS development
 - Postman for API testing



Risks

- Ensuring Degree Navigator Works on Mobile
 - The application must be easy to understand and navigate
 - **Mitigation:** Continue to refine the UI through multiple iterations of user feedback
 - **Importance:** Very High, **Difficulty:** High
- Handling Edge Cases
 - The app needs additional features for students with dual majors, minors, and honors options
 - **Mitigation:** Implemented edge case functionality in the early design stages
 - **Importance:** High, **Difficulty:** Moderate
- Coordinating with Existing MSU Systems
 - The app should store user information similarly to how other MSU technologies do
 - **Mitigation:** Maintain frequent communication with our clients about mock data and our schemas.
 - **Importance:** Low, **Difficulty:** Moderate



Questions?

?

?

?

?

?

?

?

?

?

