Project Plan Presentation
MSU Enviroweather Mobile

The Capstone Experience
Team MSU Enviroweather

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Project Sponsor Overview

• Enviroweather is a collaborative project between the Michigan Climatological Resources Program and the MSU Integrated Pest Management Program.

• Their goal is to create a weather-based information system that helps users make pest, plant production, and natural resource management decisions in Michigan.
Project Functional Specifications

• A mobile friendly application for providing detailed weather information for farmers in Michigan
• Ensures easy access to relevant and dependable weather data for informed decision making in agricultural pest, production and natural resource.
• Provides timely and sustainable weather information facilitating strategic planning and resource allocation for improved agricultural practices in Michigan.
Project Design Specifications

• Design a user-friendly mobile app
• Interactive point-based map and searching functionality for weather stations
• Collect and visualize data from client and NWS service database
• Customized models of information based on selected weather stations
• Support different weather model selections
Screen Mockup: [Map and Search Bar]
Screen Mockup: [Data Visualization]
Screen Mockup: [Customized Models]
Screen Mockup: [Model Selections]
Project Technical Specifications

• Front End
  ▪ React Native, JavaScript, and CSS

• Back End (API)
  ▪ Enviroweather PHP Server and the National Weather Service
  ▪ Postman for testing API

• Building
  ▪ Expo Application Services and Expo Go
System Architecture Slide Notes

**Back End**
- PHP server
  - Powered by MSU Enviroweather
- NWS Website
  - Powered by the National Weather Service

**Front End**
- React Native
- CSS

**npm packages**
- axios
- react-native-maps
- react-native-chart
- react-native-table-component

**Build**
- Expo/Expo Go

**Deploy**
- iOS / Android
Project System Components

• Hardware Platforms
  ▪ Android/IOS Mobile device

• Software Platforms / Technologies
  ▪ National Weather Service API
  ▪ Enviroweather API
  ▪ Expo and NPM
  ▪ React Native
Project Risks

• Mobile compatibility of Expo
  ▪ Features of IOS app may not be compatible on Android
  ▪ Constant testing and optimizing app on both Android and IOS

• Integrating Graph API into React Native
  ▪ Graph to display Meteogram needs to be integrated into react native
  ▪ Deciding with client which API and content for this feature on mobile

• Offline support of application
  ▪ Application will be used in areas with limited cell phone service
  ▪ The app should cache and show previously loaded data

• Integrating client’s API
  ▪ Establishing connection between mobile app and client’s backend
  ▪ Test with postman and decoding client’s JSON objects
Questions?