Project Plan
3D Product Showcase Application

The Capstone Experience

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Functional Specifications

**Problem:** Difficult to market Dow chemicals

- Visualizing chemical intermediaries on products
- Providing information on the chemicals that makeup the final consumer product
- Making the information easy to access and traverse

**Solution:** 3D Product Showcase using AR

- Mobile application for consumers
- Product catalog across various markets
- Visualize Dow materials on product models
- Learn about products in Augmented Reality
Design Specifications

Market Category Selection
- Search bar
- Drop down menu

Product Catalog
- Preview of model
- Small description of makeup

Model Editor
- Edit the material, rotate and zoom in on the model

AR view
- Plane recognition
- Highlighted regions
- Finger gesture suggestions for move/rotate
- Camera button for screenshots
Screen Mockup: Category Select
Screen Mockup: Product Catalog
Screen Mockup: Model Editor
Screen Mockup: Augmented Reality
Technical Specifications

Unity AR Foundation
- Provide core functionality required for mobile augmented reality applications
- Needed for plane detection and location tracking

MySQL with Microsoft Azure
- Relates consumer products to corresponding markets
- Relates consumer products with Dow materials
- Stores information about Dow materials, consumer products, and markets
System Architecture

Microsoft Azure

Uploas to

Dow

Product Catalog

Updates

Gives access to

Authenticator

Model select

Model generation

AR Model View

Android view

iOS view

User’s Device
System Components

Software Platforms / Technologies

- **Unity 2019.2.4f1**
  - Software engine for developing the mobile application

- **MySQL with Microsoft Azure**
  - Stores information on consumer products and Dow materials

- **Unity AR Foundation**
  - Tool kit for Augmented Reality support on mobile devices

- **Xcode**
  - Used to deploy application to iOS

- **Android SDK**
  - Used to deploy application to Android
Risks

Interactive models in Unity AR Foundation
- **Difficulty** – Medium | **Importance** - Medium
- **Description**: Current AR model viewer built with third-party library Vuforia
- **Mitigation**: Build simple app with AR foundation.

Undocumented Legacy Project
- **Difficulty** – Low | **Importance** - Medium
- **Description**: Legacy project has little to no documentation
- **Mitigation**: Test and incorporate only code that would be difficult to implement

Relational Data Stored in Non-relational Database
- **Difficulty** - Hard | **Importance** - High
- **Description**: Legacy application uses SharePoint to store models
- **Mitigation**: Use Microsoft Azure to store the models and relational data

Deploying Application to IOS
- **Difficulty** - Medium | **Importance** - High
- **Description**: Application must work on both IOS and Android devices
- **Mitigation**: Deploy “Hello World” application to IOS
Questions?