Project Plan Presentation
Dashboard for Data Visualization

The Capstone Experience

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Project Sponsor Overview

• Founded in 1957, Magna is the largest automotive parts manufacturer in North America
• They employ over 161,000 people
• They have manufactured cars for companies like Toyota and BMW
• They are committed to expanding the electric vehicle market
Project Functional Specifications

• Increase accessibility to deliver robot fleet data
• Provide daily updates on the status of bot fleet or individual robots
• Display fleet history for analysis
• Allow for management of fleet by filtering data
Project Design Specifications

• Display various metrics about Magna's fleet of automated delivery bots in an interactive dashboard
• Refresh automatically or by button
• Allow user to filter data
• Ability to change dashboard to display weekly, monthly, or lifetime reports
• Dashboard integrated into Magna's website for employee use
Screen Mockup: Daily Fleet Data
Screen Mockup: Weekly Fleet Data
Screen Mockup: Life Data for Single Bot

Data Visualization Dashboard

Lifetime Statistics for A325875

- Sum of Distance Traveled (Km)
- Sum of Battery Consumption (Kw)
- Sum of Trip Time

- Sum of Battery Consumption (Kw) by Trip Number
- Sum of Distance Traveled (Km) by Trip Number
- Sum of Trip Time by Trip Number
Screen Mockup: Monthly Breakdown
Project Technical Specifications

• Backend
  ▪ Storage: AWS S3 database
  ▪ Data Processing: MySQL/python script
  ▪ Data Virtualization/Crafting: QuickSight
  ▪ AWS SDK for python script and APIs allow frontend interactions with backend services

• Frontend
  ▪ These dashboards will be integrated into Magna's website which is coded in JavaScript in the Vue.js format
Project System Architecture

Backend

- Amazon Web Services
- S3
- MySQL
- Amazon QuickSight

Frontend

- Vue.js
- JS
- Magna
- Dashboard
Project System Components

- **Software Platforms / Technologies**
  - Amazon Web Services
    - AWS Code Commit Repository
    - Amazon QuickSight
    - AWS S3 storage
    - Lambda – use to store functional code which is Python
    - Amazon API Gateway – easy way to pull data from database
  - Jira
  - JavaScript
  - MySQL
  - Visual Studio
  - Vue.js File Format
Project Risks

• Refreshing data in real time
  ▪ Bots will collect large amounts of data on a consistent basis
  ▪ Data will be pulled from database on a regular interval

• Integration of dashboards into Vue files
  ▪ Connection and authentication between QuickSight and Vue
  ▪ Format will be matched with existing files

• Displaying data in a user-accessible manner
  ▪ Users of varying technical knowledge can use dashboard
  ▪ Clear labels and UI, consistent check-ins with Magna

• Integration of visualization software with AWS
  ▪ QuickSight is native to AWS, but Magna has free access to PowerBI
  ▪ Amazon Quicksight has been chosen over PowerBI
Questions?