Project Plan
Ford Mobility Product Metrics
The Capstone Experience
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Functional Specifications

• Deliver Ford developers a convenient way to monitor API and website usage by communicating with a Slack or WebEx Teams chatbot
• Create a pixel tracker to analyze data from tracking pixels on web pages
• Visualize the pixel tracker data to view metrics configurable by product and time periods on a Grafana dashboard
Design Specifications

• WebEx Teams & Slack Chatbots
• Pixel Tracker: Analytical tool for tracking pixels
• Metrics Dashboard: Website to display visualized data
• Data Interface: Interface for pulling data from databases
Interactive ChatBot
Reports Chatbot

**Daily Report**

- Sessions: 9,053
- Users: 4,873
- Pageviews: 123,249
- Pages per Session: 15.43
- Average Session Duration: 00:03:35
- Bounce Rate: 1.53%
- % New Sessions: 60.12%
Grafana Dashboard

Ford API Usage

Sessions API Average Usage

Current Traffic

Vehicle API Average Users

Time

90

20:03:55

101

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Pixel Tracker Mockup

![Graph showing page visit overview from September 12, 2019 to October 12, 2019. The graph shows the number of sessions over time, with a drop in sessions around September 22 and a peak around October 6.](image-url)
Technical Specifications

- OpenPixel
- Slack/WebEx Teams API
- Grafana
- MySQL
- Chart.js
- Azure Log Analytics
- Chatbot engine
- Pixel Tracker
System Architecture

- Tracking Pixels in Ford's website:
  - Sends Data to
  - Queries
  - Oversees Database
  - Admin Portal

- MySQL Database:
  - Oversees

- Pixel Tracker:
  - Sends Data to Queries
  - Sends Data to

- Grafana:
  - Creates
  - Gets Data
  - Accesses

- Dashboard:

- Chatbot Engine:
  - Data interface
  - Tested with Postman

- Slack/Teams Webex Chatbot:

- Log Analytics API:
  - Sends Data to

- Postman:

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System Components

- Hardware Platforms
  - Ubuntu Server(rack)
- Software Platforms / Technologies
  - Ubuntu
  - Azure
  - MySQL
  - MacOS
  - Web platform
Risks

• Risk 1
  ▪ How do we make a chatbot engine?
  ▪ Created a basic chatbot to become familiar with it

• Risk 2
  ▪ The chatbot may not recognize every question the user asks
  ▪ Train and test the chatbot in addition to implementing fuzzy string matching

• Risk 3
  ▪ Collecting bad pixel tracker data (i.e. web crawler)
  ▪ Create a filter to analyze the metadata (i.e. timestamps, UID)

• Risk 4
  ▪ Malicious access of MySQL database through data leaks
  ▪ Create a firewall to limit the IP addresses
Questions?