

MICHIGAN STATE
UNIVERSITY

Alpha Presentation
Reducing Shoplifting Using Machine
Learning
The Capstone Experience

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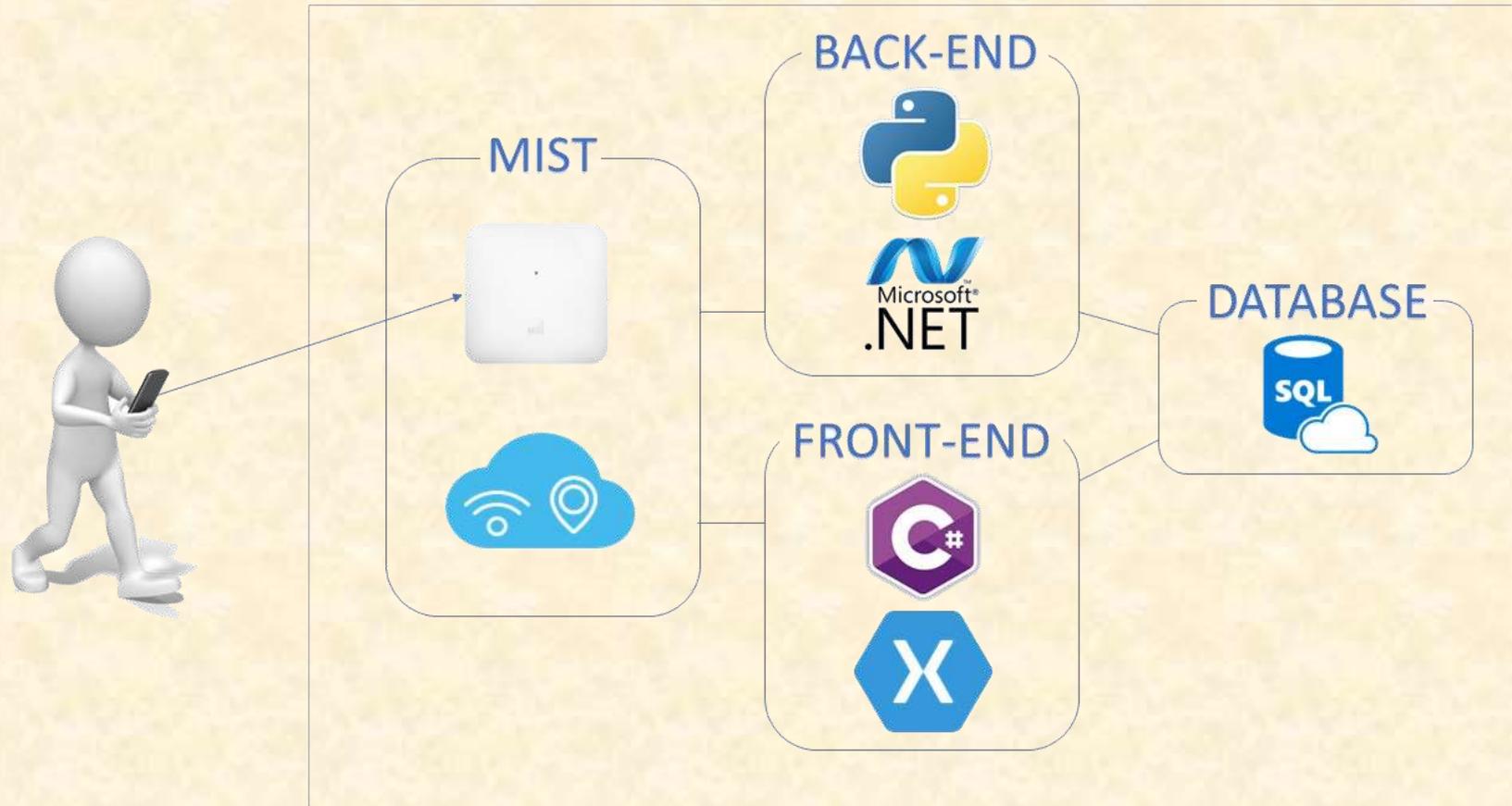
From Students...
...to Professionals

Project Overview

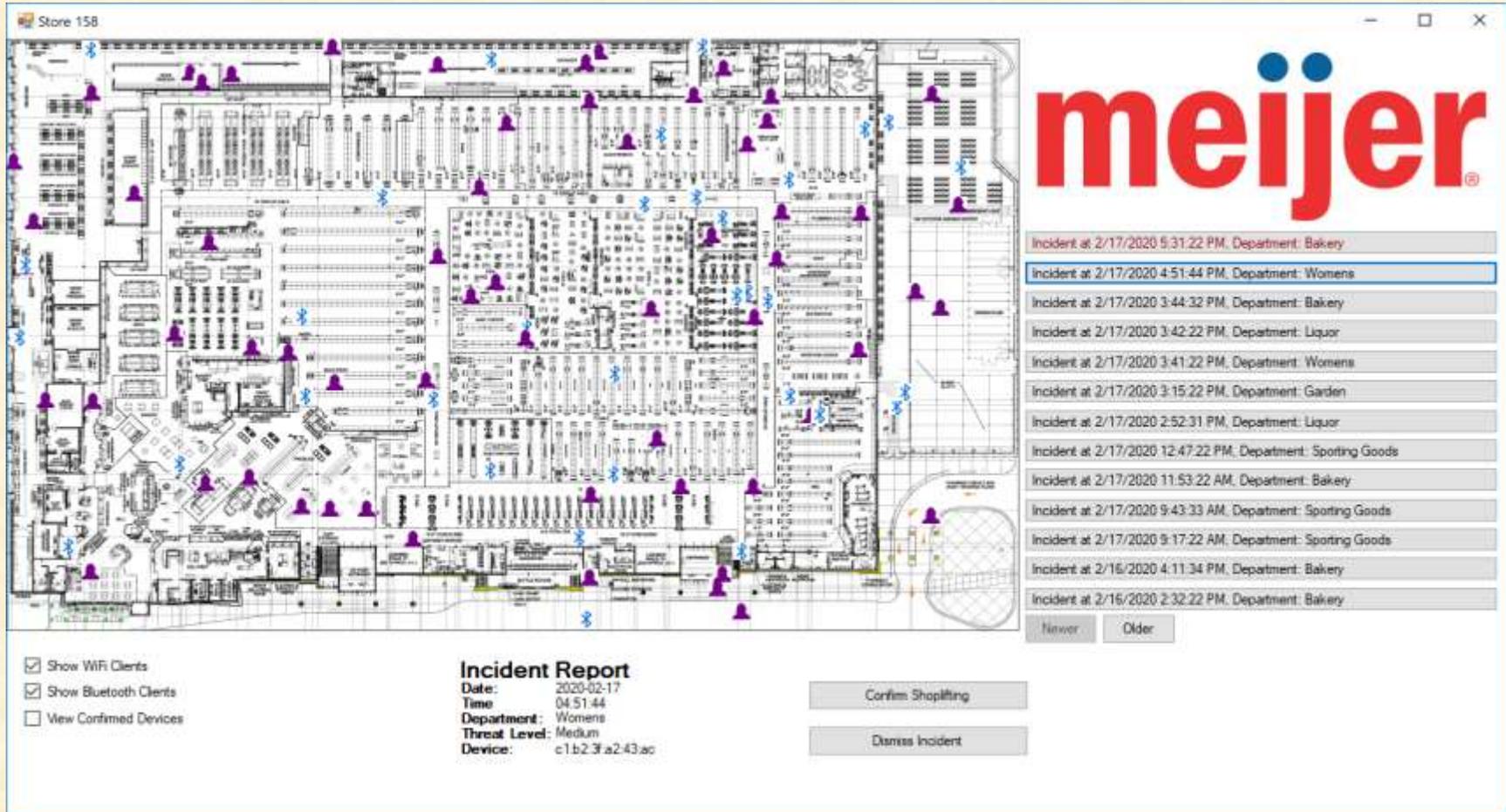
- Monitor shoppers with Mist access points
- Look for shoplifting patterns
- Identify potential shoplifting incidents
- Send alerts to prevent the incident



System Architecture



Desktop App



The screenshot displays a desktop application window titled "Store 158". The main area shows a detailed floor plan of a store with numerous purple and blue markers indicating incident locations. On the right side, the Meijer logo is prominently displayed above a list of incident reports. The list includes the following entries:

- Incident at 2/17/2020 5:31:22 PM, Department: Bakery
- Incident at 2/17/2020 4:51:44 PM, Department: Womens
- Incident at 2/17/2020 3:44:32 PM, Department: Bakery
- Incident at 2/17/2020 3:42:22 PM, Department: Liquor
- Incident at 2/17/2020 3:41:22 PM, Department: Womens
- Incident at 2/17/2020 3:15:22 PM, Department: Garden
- Incident at 2/17/2020 2:52:31 PM, Department: Liquor
- Incident at 2/17/2020 12:47:22 PM, Department: Sporting Goods
- Incident at 2/17/2020 11:53:22 AM, Department: Bakery
- Incident at 2/17/2020 9:43:33 AM, Department: Sporting Goods
- Incident at 2/17/2020 9:17:22 AM, Department: Sporting Goods
- Incident at 2/16/2020 4:11:34 PM, Department: Bakery
- Incident at 2/16/2020 2:32:22 PM, Department: Bakery

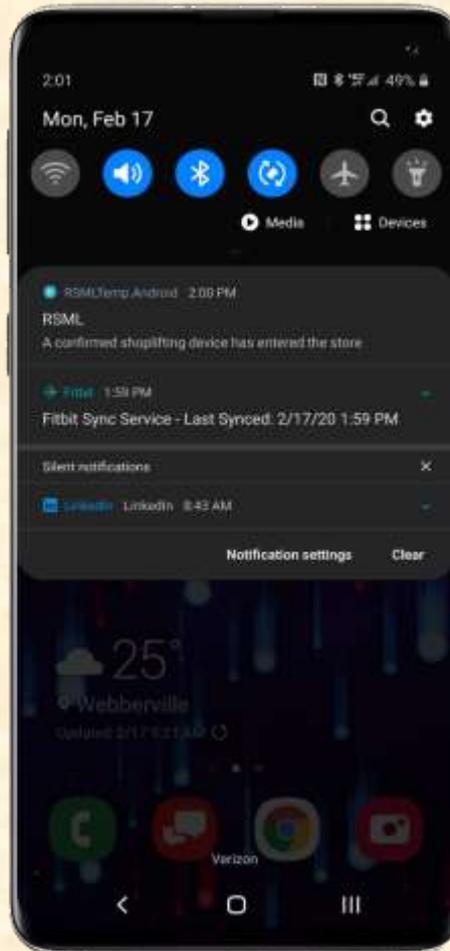
At the bottom left, there are three checkboxes: "Show WiFi Clients" (checked), "Show Bluetooth Clients" (checked), and "View Confirmed Devices" (unchecked). In the bottom center, an "Incident Report" panel shows the following details:

Incident Report
Date: 2020-02-17
Time: 04:51:44
Department: Womens
Threat Level: Medium
Device: c1b23fa243ac

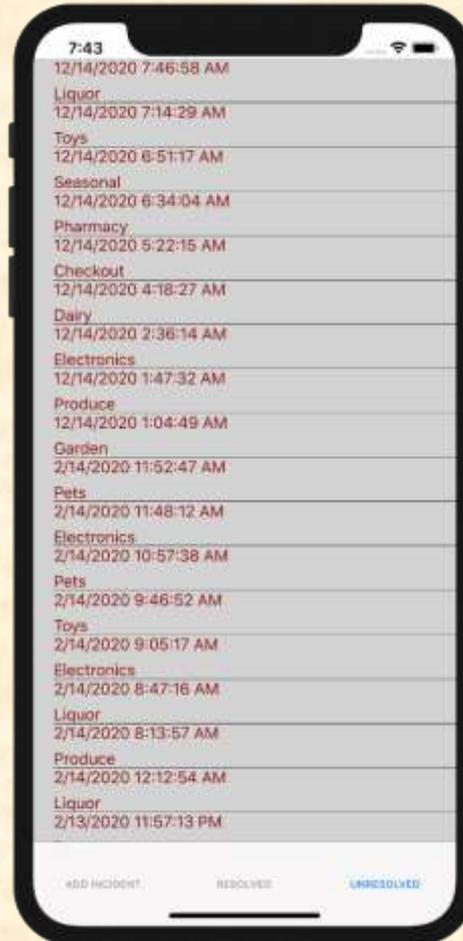
At the bottom right, there are two buttons: "Confirm Shopping" and "Dismiss Incident".



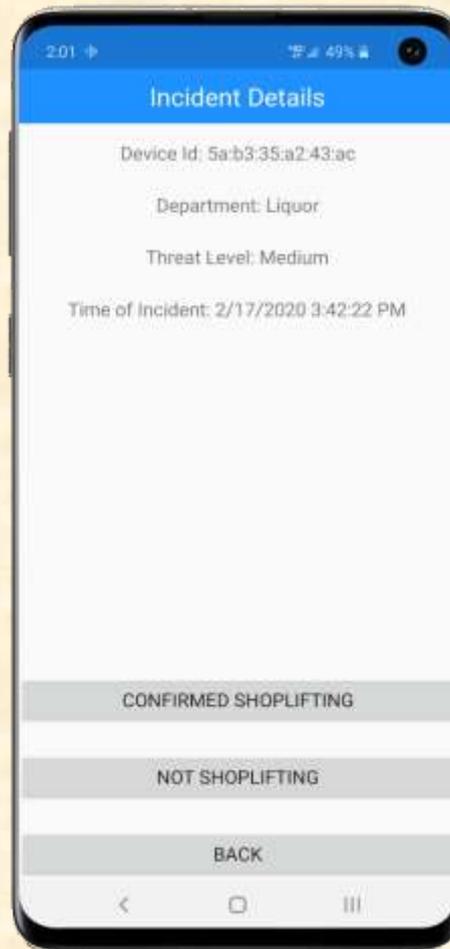
Android Application Notification



iOS Application Unresolved Page



Android Resolve Incident Page



What's left to do?

- Add additional features to the desktop app such as zone monitoring
- Optimize each mobile app towards their respective platform
- Make the system useful for multiple locations
- Categorize confirmed cases for future machine learning analysis



Questions?

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