MICHIGAN STATE UNIVERSITY

Project Plan
Phish Phinder

The Capstone Experience

Team Auto-Owners

Gabrielle Singher – Client Liaison & Back-End Developer
Madison Bowden – Data Science Lead
Jacob Loukota – Project Manager & Front-End Developer
Hunter Hysni – Back-End Lead
Alex Larson – Front-End Lead

Department of Computer Science and Engineering
Michigan State University

Spring 2020

From Students…
…to Professionals

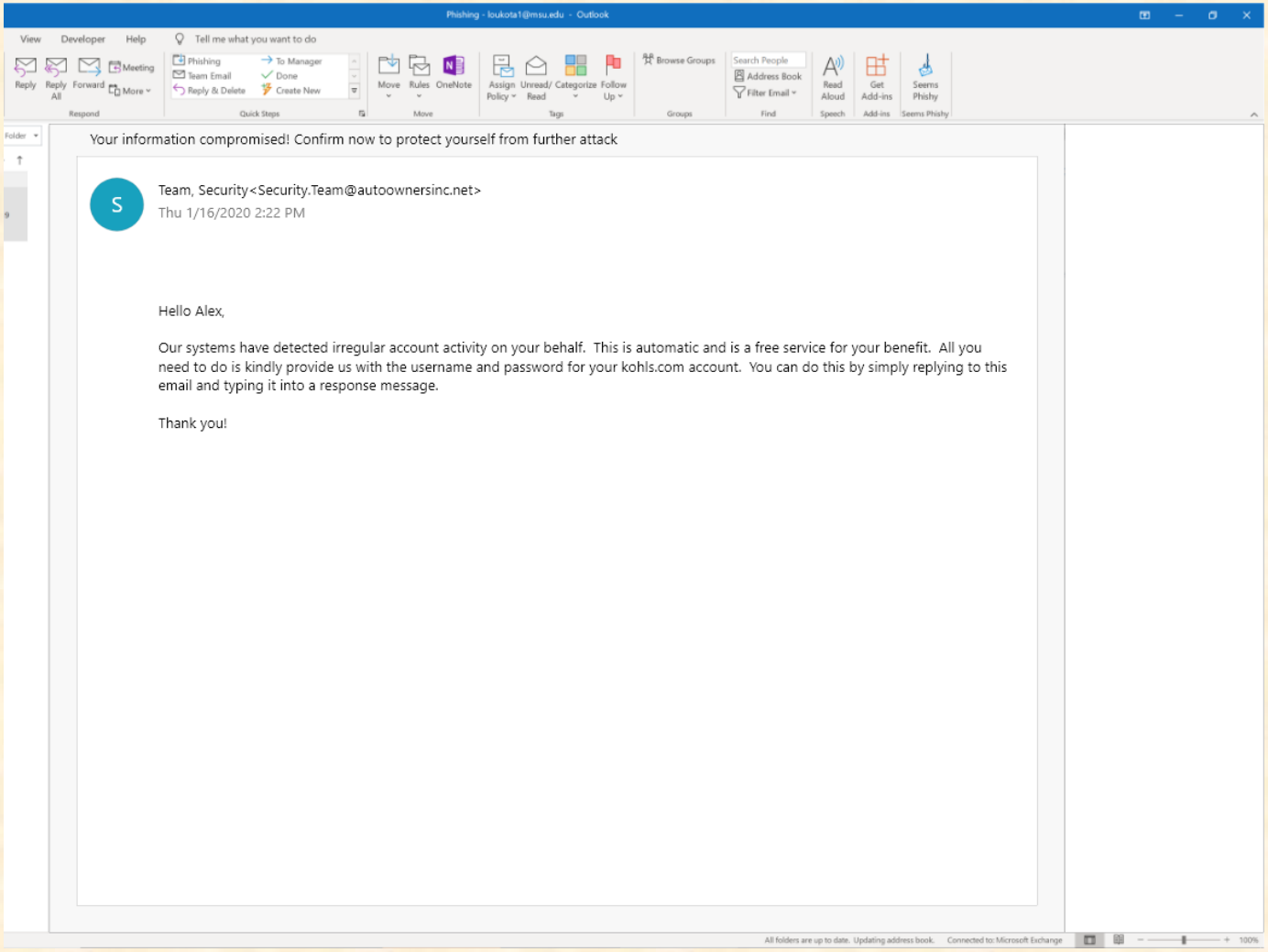
Functional Specifications

- Improve current methods for dealing with phishing emails in the workplace.
- Outlook Add-in
  - Allows users to send emails to an algorithm that will scan them.
- Phishing Detection Algorithm
  - Determines whether an email is Innocuous, Suspected Phish, Confirmed Phish, or Spam with an associated confidence score.
  - The algorithm will also pull key features known to phishing attempts from the email to present back to the user in Outlook an educational manner.
- Adminnistrator and Executive Webpages
  - Two webpages will be available for admin users and executives to view aggregated reports and logistics relating to the Outlook Add-in.

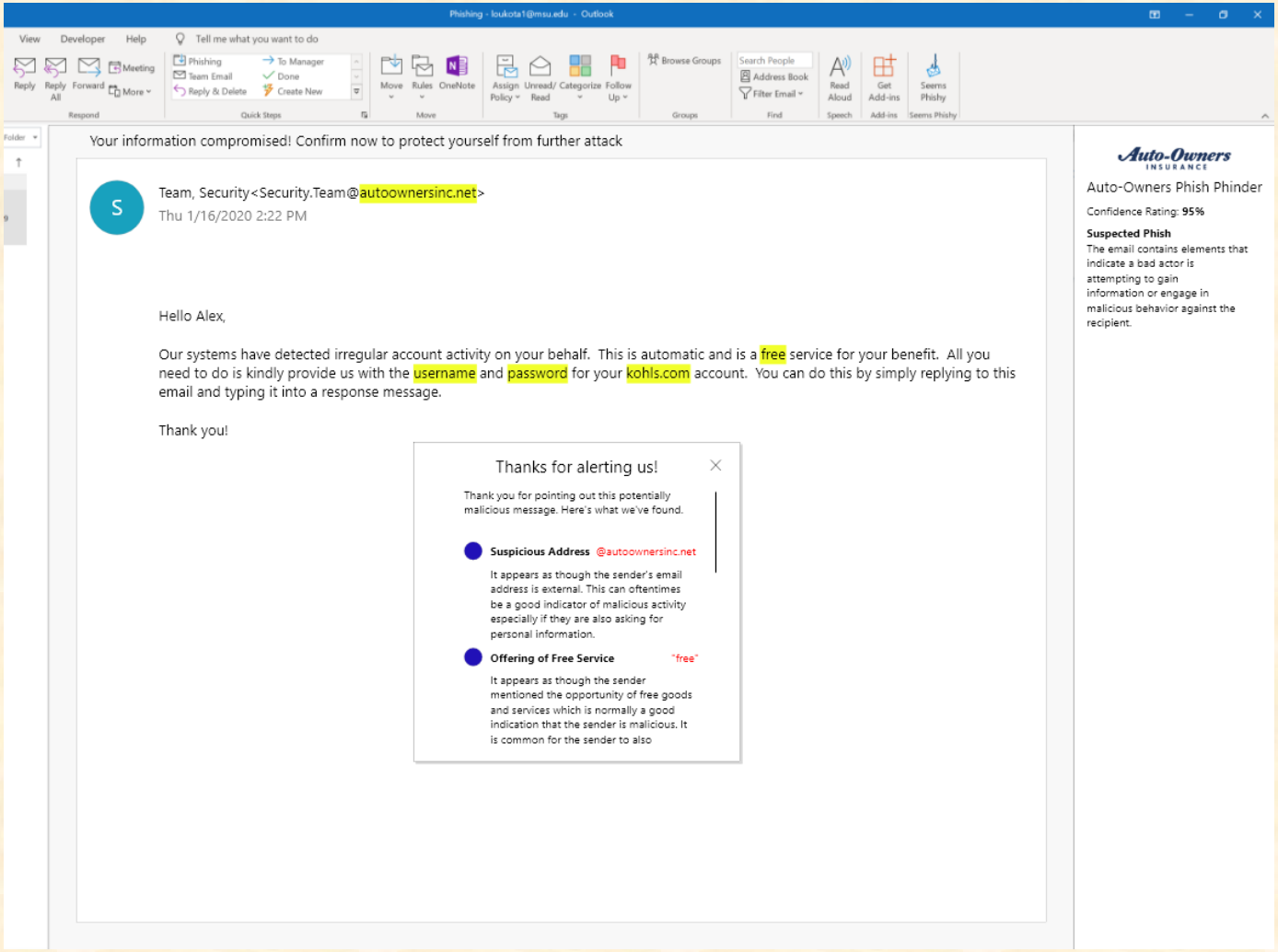
Design Specifications

- Outlook Add-in
  - Associate-facing feature
  - Needs to have a button in a convenient and noticeable place.
  - Provide quick feedback times and be convenient for the associates so they will actually read and understand the contents of the tutorial to be presented to them in a sidebar on Outlook.
- Analytics Dashboard Webpage
  - Simplistic using graphs and visuals to get the most important aggregated statistics across so that the logistics can be understood and used by executives to monitor the effectiveness of the Phish Phinder and any current threats to the company.
- Email Review Webpage
  - Allow filtering and categorization so that the admins and security team feel less overwhelmed by allowing the team to deal with potential threats in a more streamlined manner.

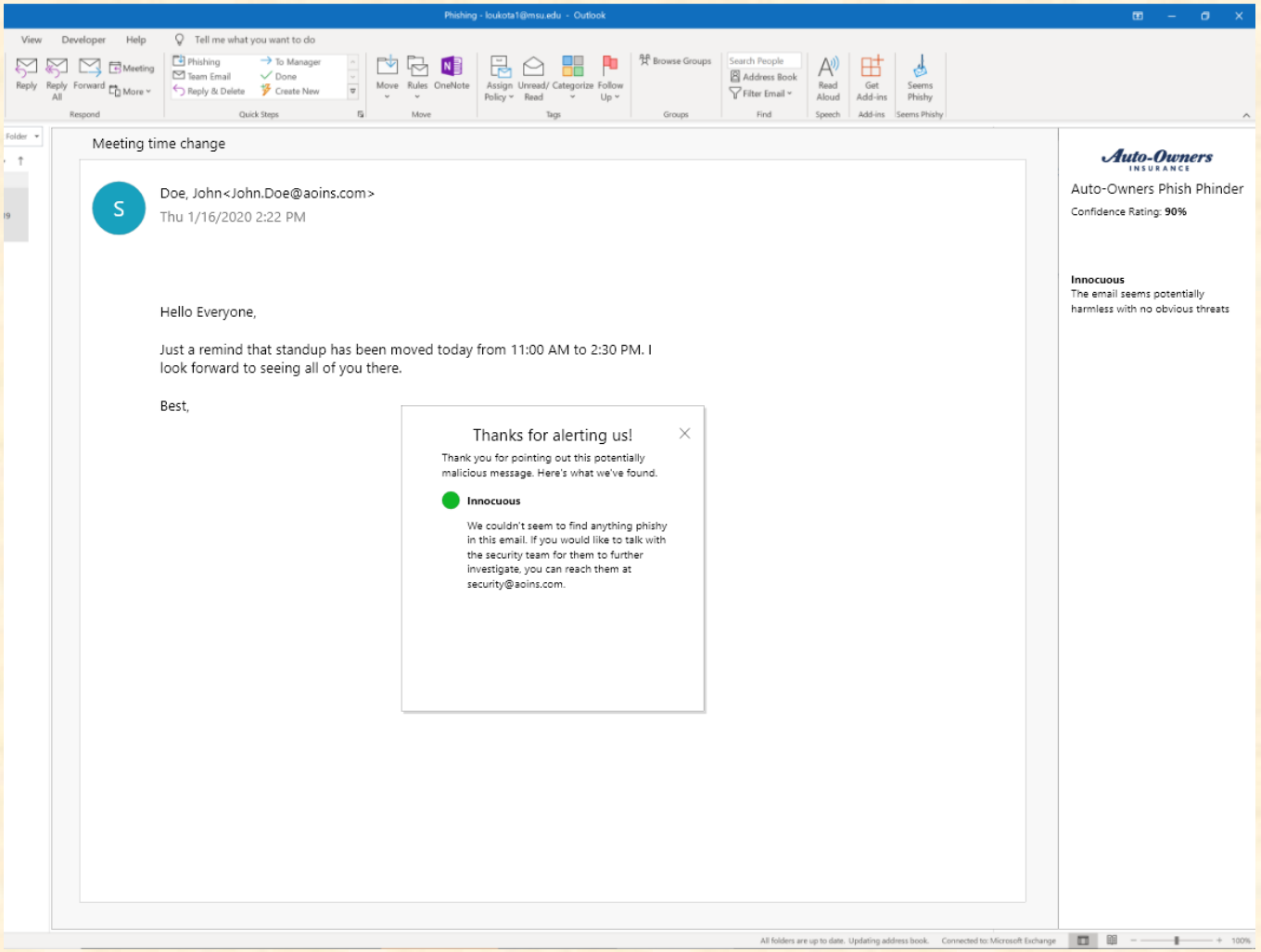
Screen Mockup: Outlook Add-in



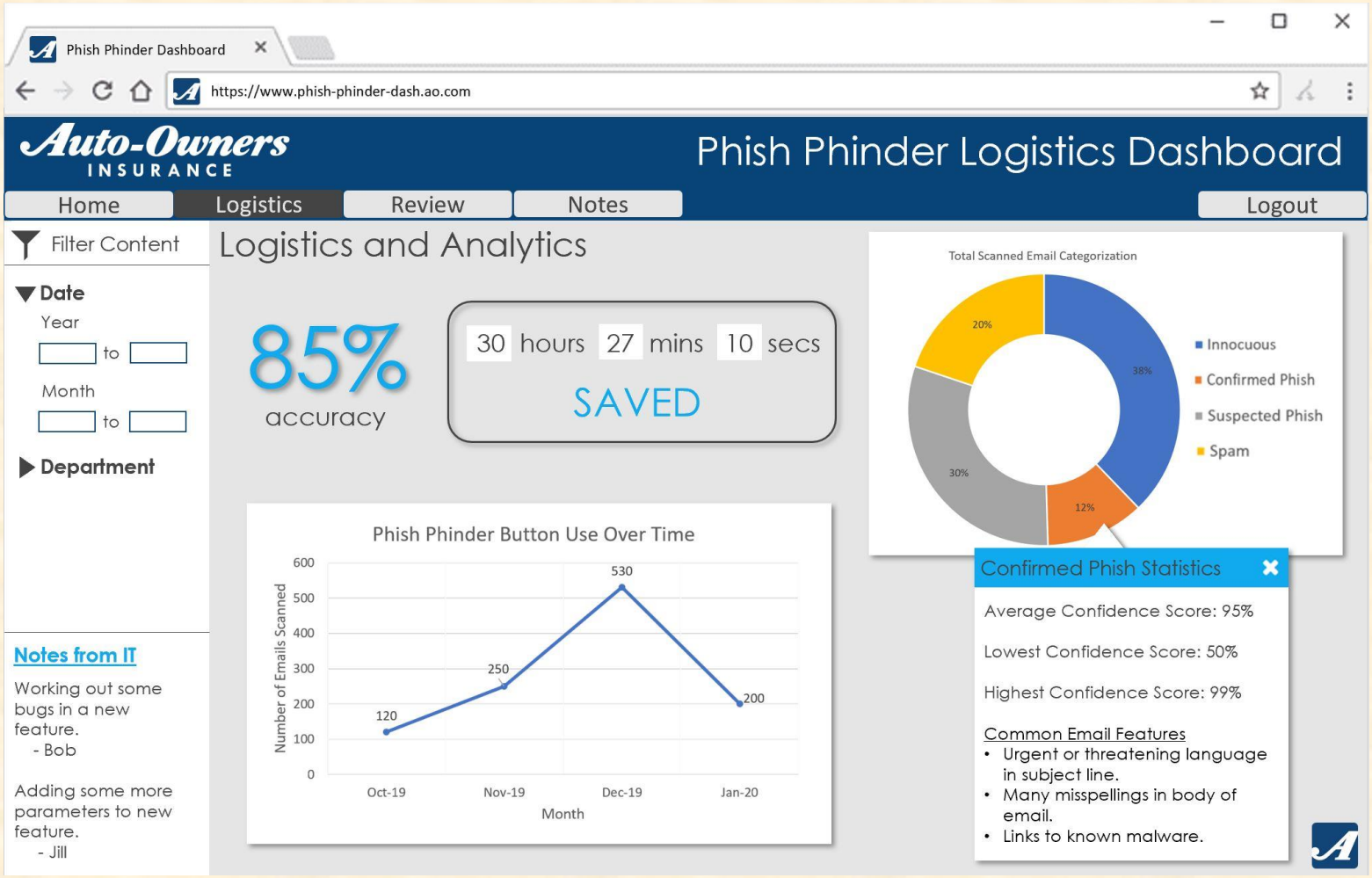
Screen Mockup: Outlook Add-in (Phishing Email)



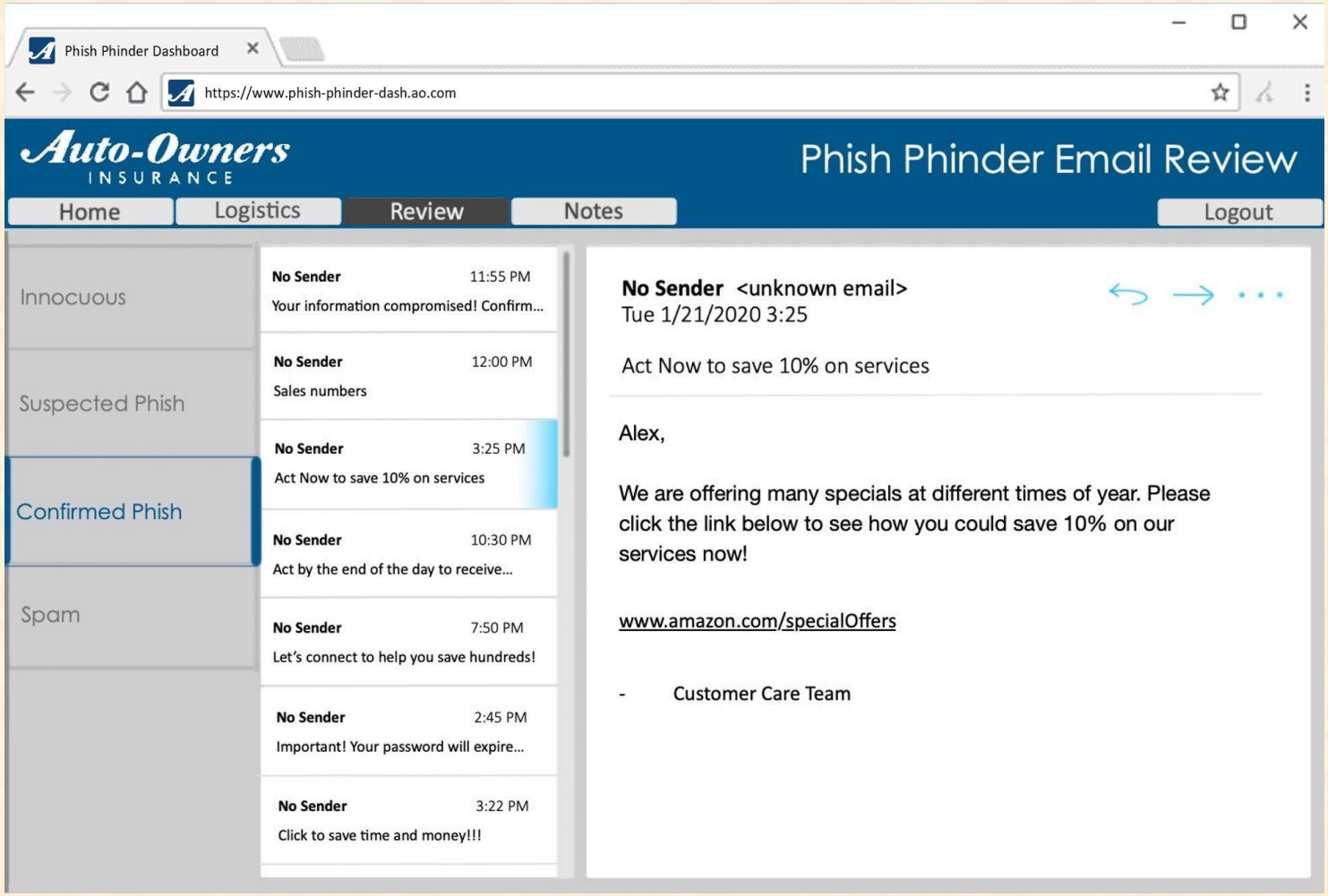
Screen Mockup: Outlook Add-in (Innocuous Email)



Screen Mockup: Logistics Dashboard Webpage



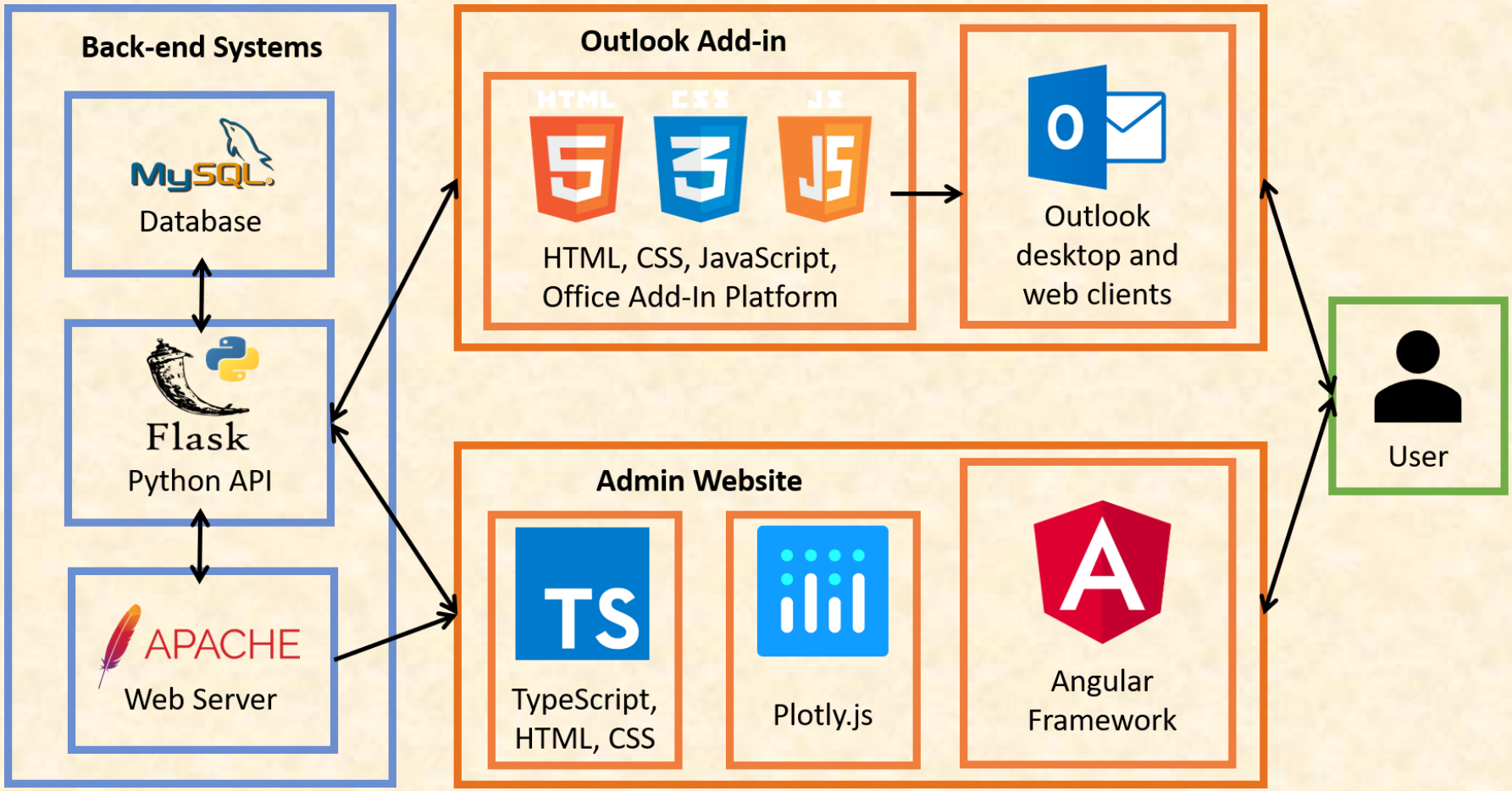
Screen Mockup: Email Review Webpage



Technical Specifications

- Frontend User Interface
  - Outlook Add-in
  - Angular framework for website for analytics dashboards and suspicious email reviews
- Backend Phishing Analysis
  - MySQL server retaining information from email scans
  - Python Flask
  - Apache Web Server
  - Phishing analysis algorithm based on common phish features

System Architecture



System Components

- Hardware Platforms
  - Rack-mounted server running Ubuntu 18.04
  - iMacs running Windows 10 through VMWare Fusion
  - MySQL Database
- Software Platforms / Technologies
  - Outlook
  - HTML, CSS, JavaScript, Plotly.js, Angular
  - Python Flask
  - Apache Web Server

Risks

- **Phishing Detection Algorithm | Difficulty:** High **| Priority:** High
  - **Description:** The algorithm needs to catch all variations of phishing emails and differentiate between Spam, Suspected Phish, Confirmed Phish, and Innocuous.
  - **Mitigation:** Create varying testing emails having aspects ranging from obvious phishing tactics to subtle ones and make sure our algorithm catches all instances.

- **Security Issues with Handling Associate Emails | Difficulty:** Medium **| Priority:** High
  - **Description:** Associate information is important to protect, and it is imperative that our solution handles the protection and security of the information accordingly. This is a scalability issue as well because of the handling of all emails received by all associates.
  - **Mitigation:** Have log-ins for everything that is publicly facing and do not move data unless needed.

- **Creating an Effective and Useable Outlook Add-in | Difficulty:** Medium **| Priority:** High
  - **Description:** The team has not had experience creating Outlook add-ins before. We need to find the right way to create one that will supplement the goal of its function. It also needs to be in a good location in the Outlook application and something that users would utilize.
  - **Mitigation:** Research and ask contacts about the creation of good Outlook add-ins. Create prototypes and have users test the experience.

Questions?