MICHIGAN STATE UNIVERSITY

Project Plan Presentation

Auto-Owners Talent Management

The Capstone Experience

Team Auto-Owners

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From Students…
…to Professionals

Team Auto-Owners

- **Auto-Owners**
  - Established in 1916
  - Auto-Owners Insurance is rated A+ (Superior) by AM Best and are a Fortune 500 company
  - The company is represented by 48,000 licensed agents in 26 states
  - The company provides a wide range of insurance products including life, home, auto, and business insurance
  - It offers personal and commercial property/casualty and life insurance products to approximately 3 million policyholders

Auto-Owners INSURANCE

Project Functional Specifications [2 of 16]

- **Transformative Tool for Workforce Management:** Streamlines and enhances how organizations manage and develop their workforce.
- **Comprehensive Data Entry and Management:** Integrates data entry, advanced management features, and reporting tools.
- **Integrates AI:** to optimize work-flow and candidate selection.
- **Empowers Leaders:** Enables strategic planning and optimization of talent management processes.
- **Proactive Employee Development:** Helps align employee skills with future organizational goals by fostering growth and identifying potential.

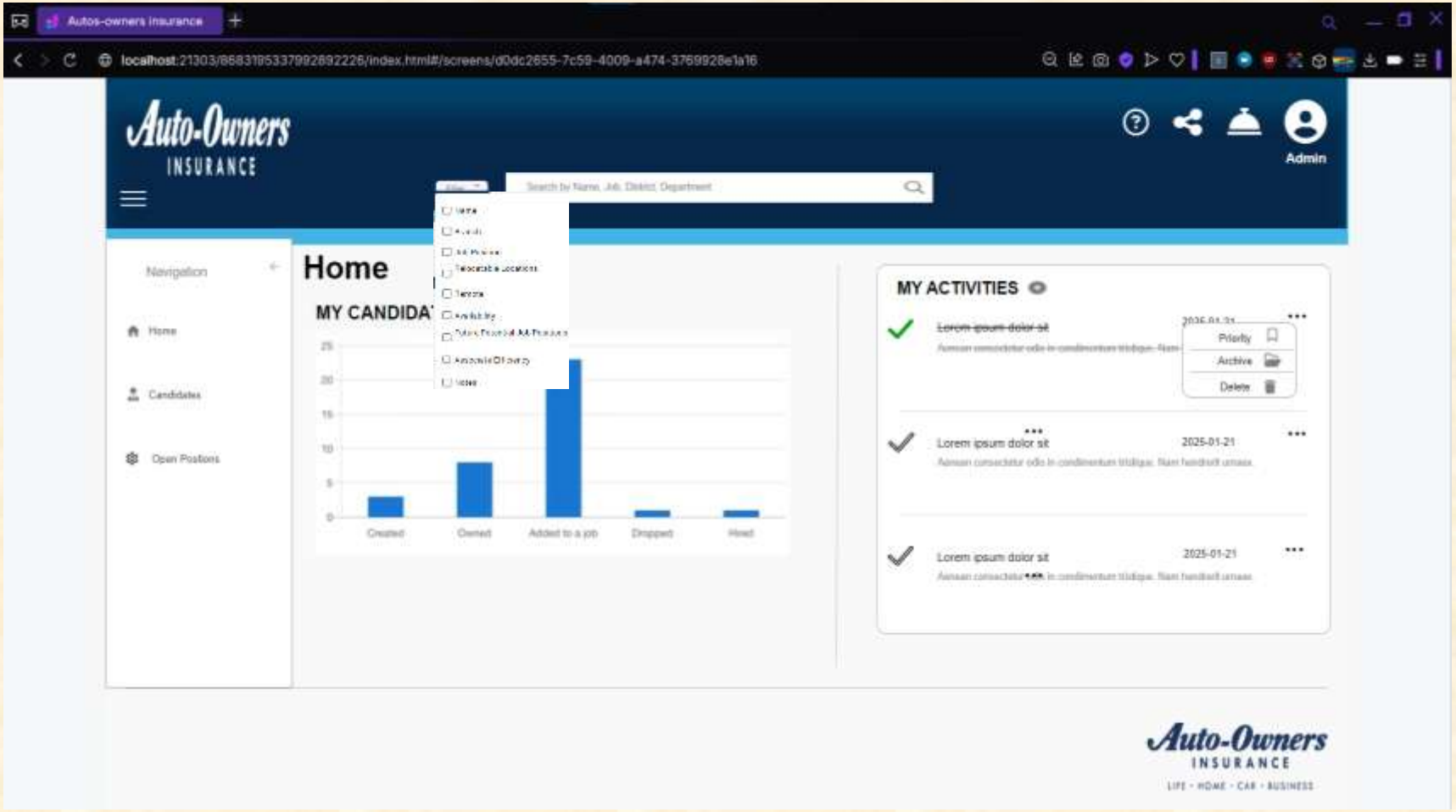
Project Design Specifications

Overall Design:

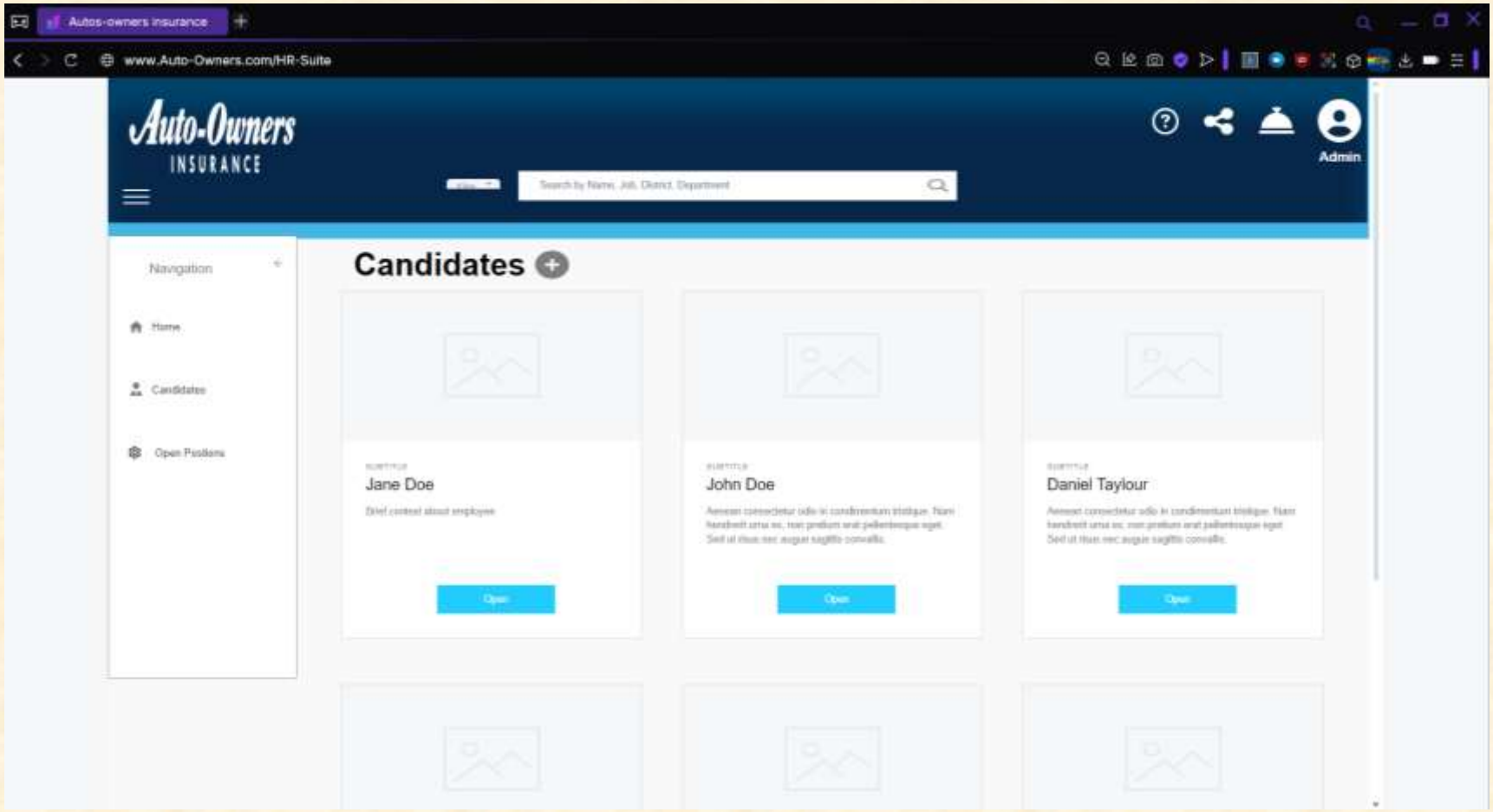
- **User-Centric Design**: Clean layout with easy navigation and efficient workflow for all application pages.
- **Responsive and Adaptive:** Tailors functionality for various user roles from supervisors to vice presidents.
- **Visual and Interactive Elements**: Employs graphical dashboards, and interactive elements to facilitate user engagement and decision-making.
- **Comprehensive Candidate and Position Management**: Provides clear, detailed views of candidates and position overviews for easy access and understanding.
- **Advanced Filtering and Search**: Efficiently sifts through the employee database with comprehensive filters to identify suitable managerial candidates..
- **Dynamic Reporting and Analytics:** Features bar graphs and AI-generated summaries for insight into recruitment and candidate fit.
- **AI Integration**: Matches candidates with positions using AI, displaying match percentages and recommendations to optimize recruitment.

Screen Mockup: Home Landing Page

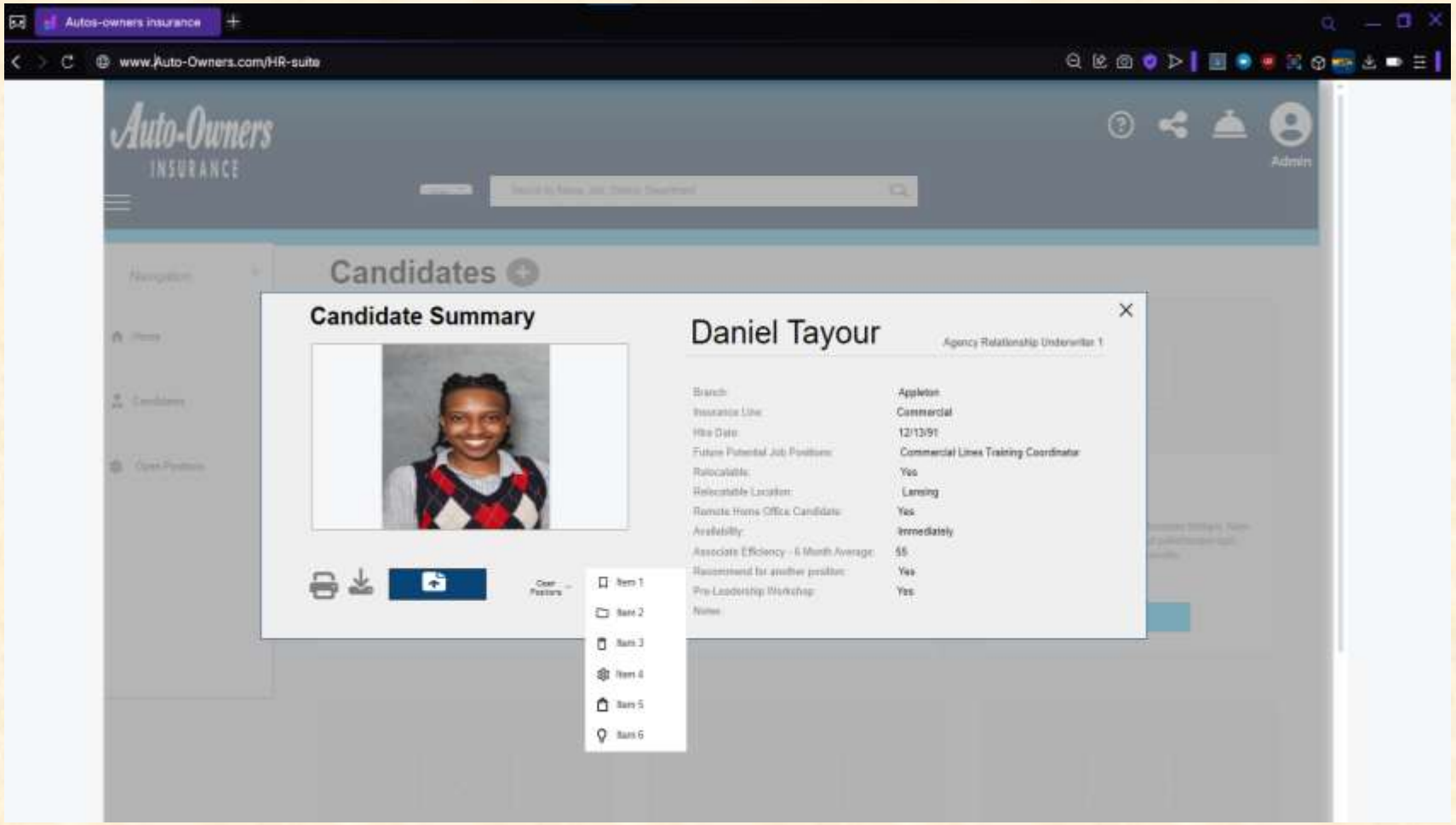
[4 of 16]



Screen Mockup: Candidate Page

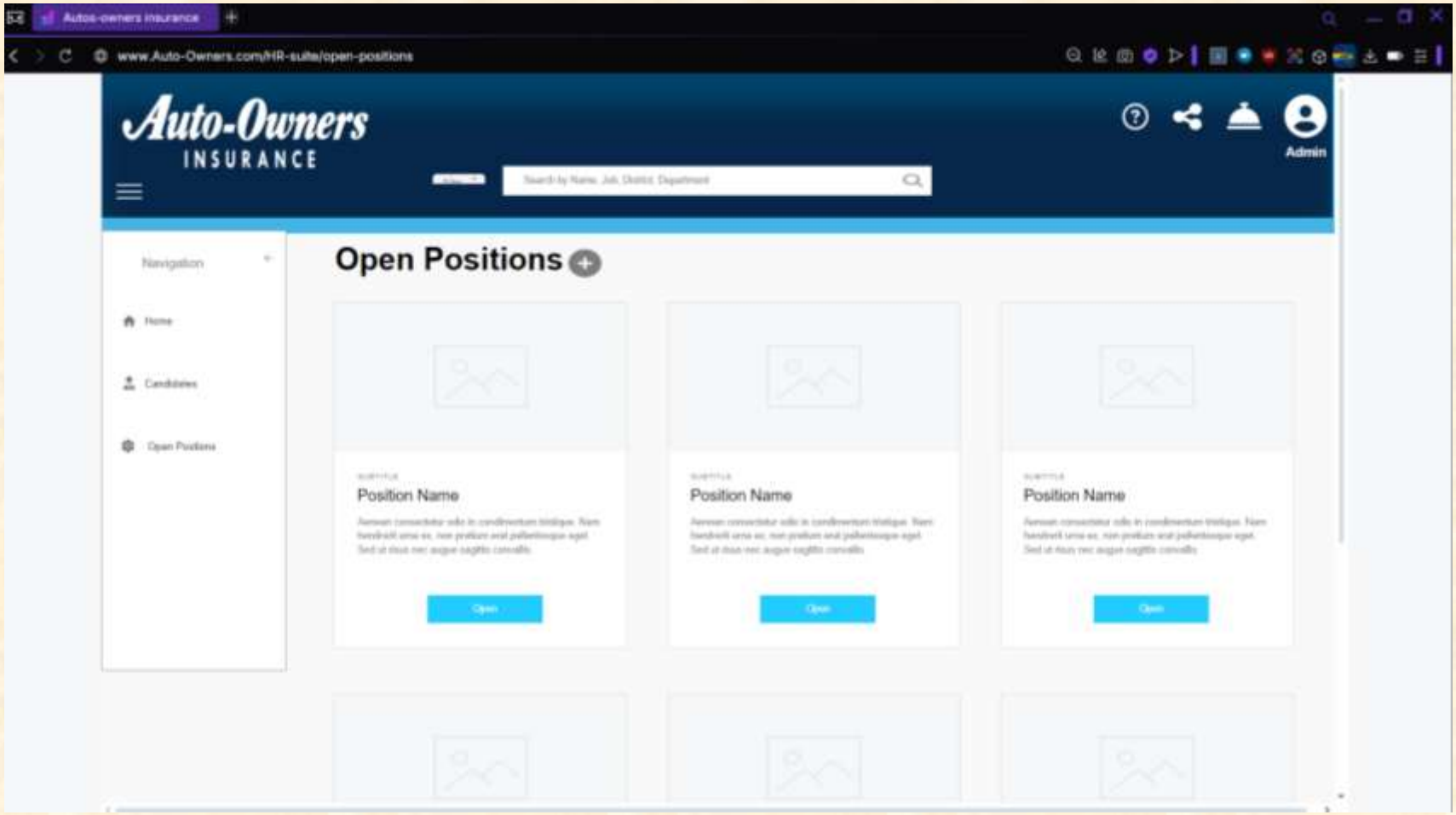


Screen Mockup: Candidate Summary [6 of 16]

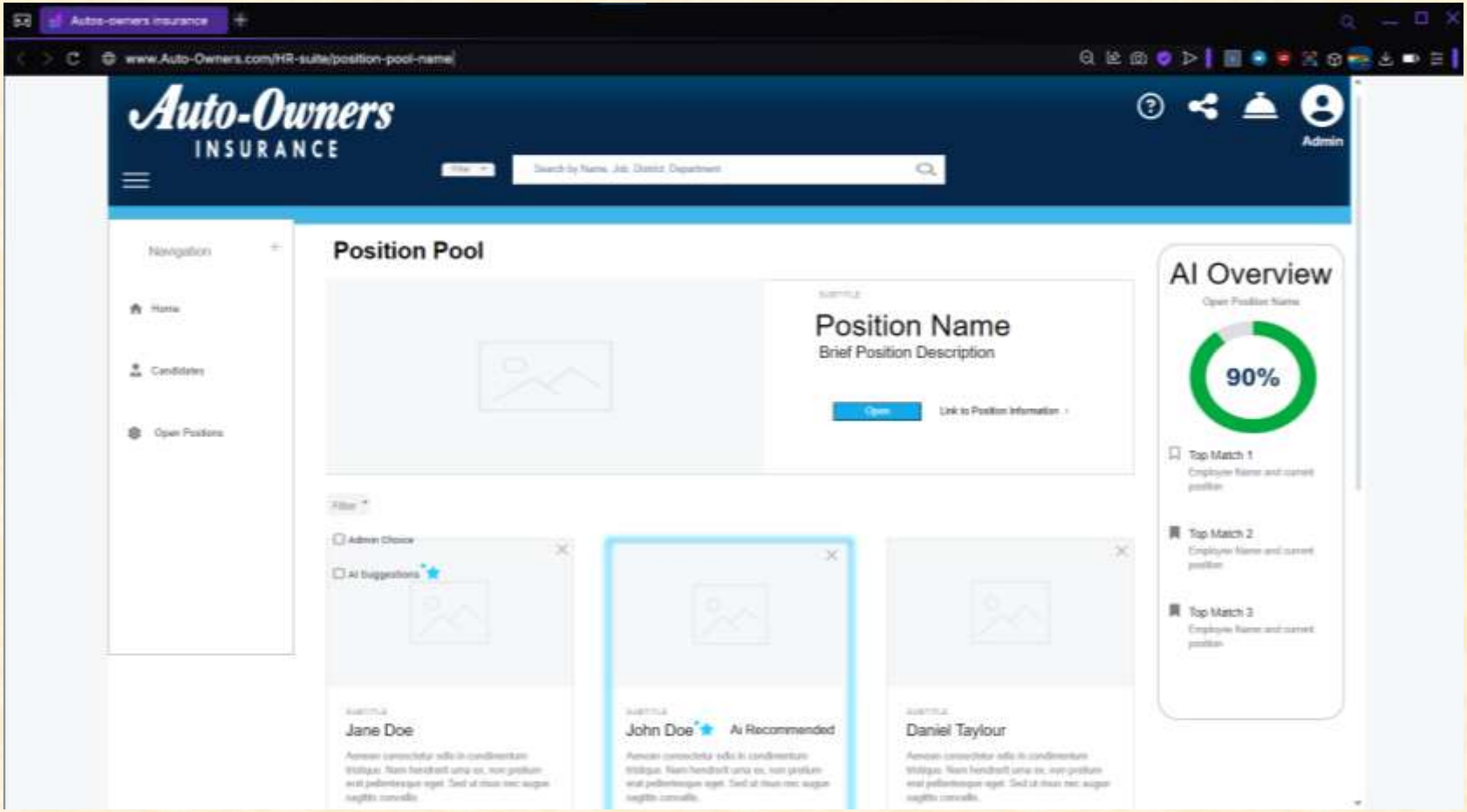


Screen Mockup: Open Positions

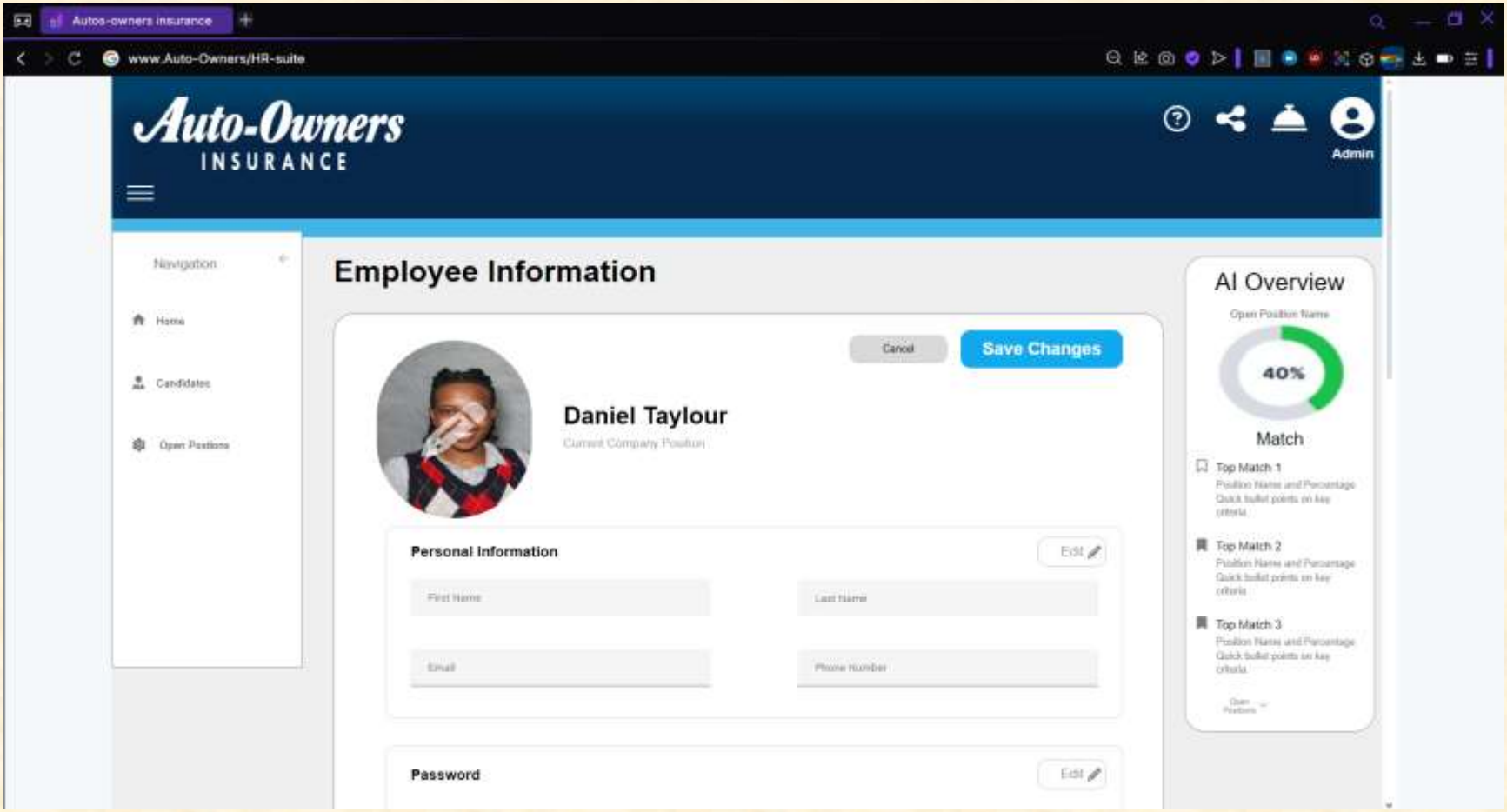
[7 of 16]



Screen Mockup: Position Pool [8 of 16]



Screen Mockup: User Data Entry [9 of 16]



Project Technical Specifications [10 of 16]

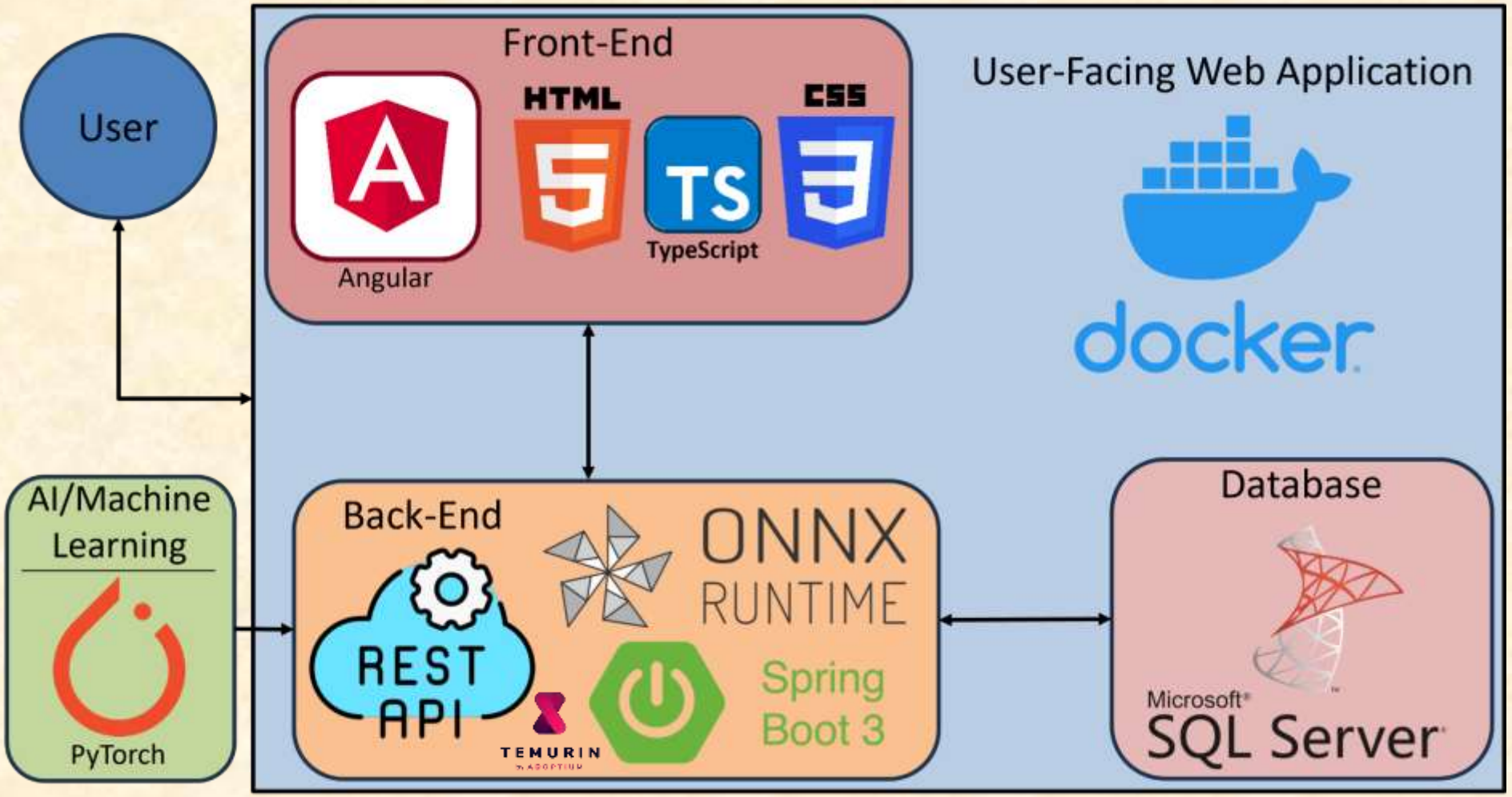
AOTM Implementation Strategy

- **Angular-based Web Application**: Our team will use Angular to develop a responsive, single-page application that optimizes user experience and load times.
- **Use of Spring Boot 3**: Simplifies backend processes by managing database transactions and reducing redundant code with Microsoft SQL to ensure data security.
- **Microsoft SQL for managing data**: Leverage robust querying capabilities to sort and query candidates with specific criteria. It can also be used to facilitate real-time updates for pages enabling features such as dynamic content rendering.

Project Technical Specifications [11 of 16]

- **Integration of RESTful APIs**: Facilitates secure and efficient data communication between the front-end and back-end.
- **Machine Learning with PyTorch and ONNX Runtime**: Implements machine learning models to rank and summarize candidate data effectively, optimized for performance with ONNX Runtime.
- **Docker for Deployment Consistency**: Ensures that our application runs consistently across all environments by containerizing the AOTM software.

Project System Architecture



Project System Components

Front-End Technology

- **Angular Framework**: Enhances UI with dynamic single-page applications for better responsiveness and reduced load times.
- **Node.js**: Provides efficient development with live page reloading.
- **HTML, TypeScript, CSS**: Supports scalable and maintainable UI design.

Project System Components

Back-End Technology

- **Spring Boot 3**: Utilizes the Adoptium Temurin JDK for streamlined transaction management and reduced boilerplate code.
- **Microsoft SQL Server**: Manages secure data storage and processing.
- **REST Endpoints**: Enables efficient data transfer within the web application, integrating machine learning insights into candidate management.

Project System Components

Machine Learning Integration

- **Model Training with PyTorch**: Utilizes extensive data sets for training machine learning models.
- **ONNX Runtime**: Ensures model optimization for enhanced performance and reduced latency.

Project Risks

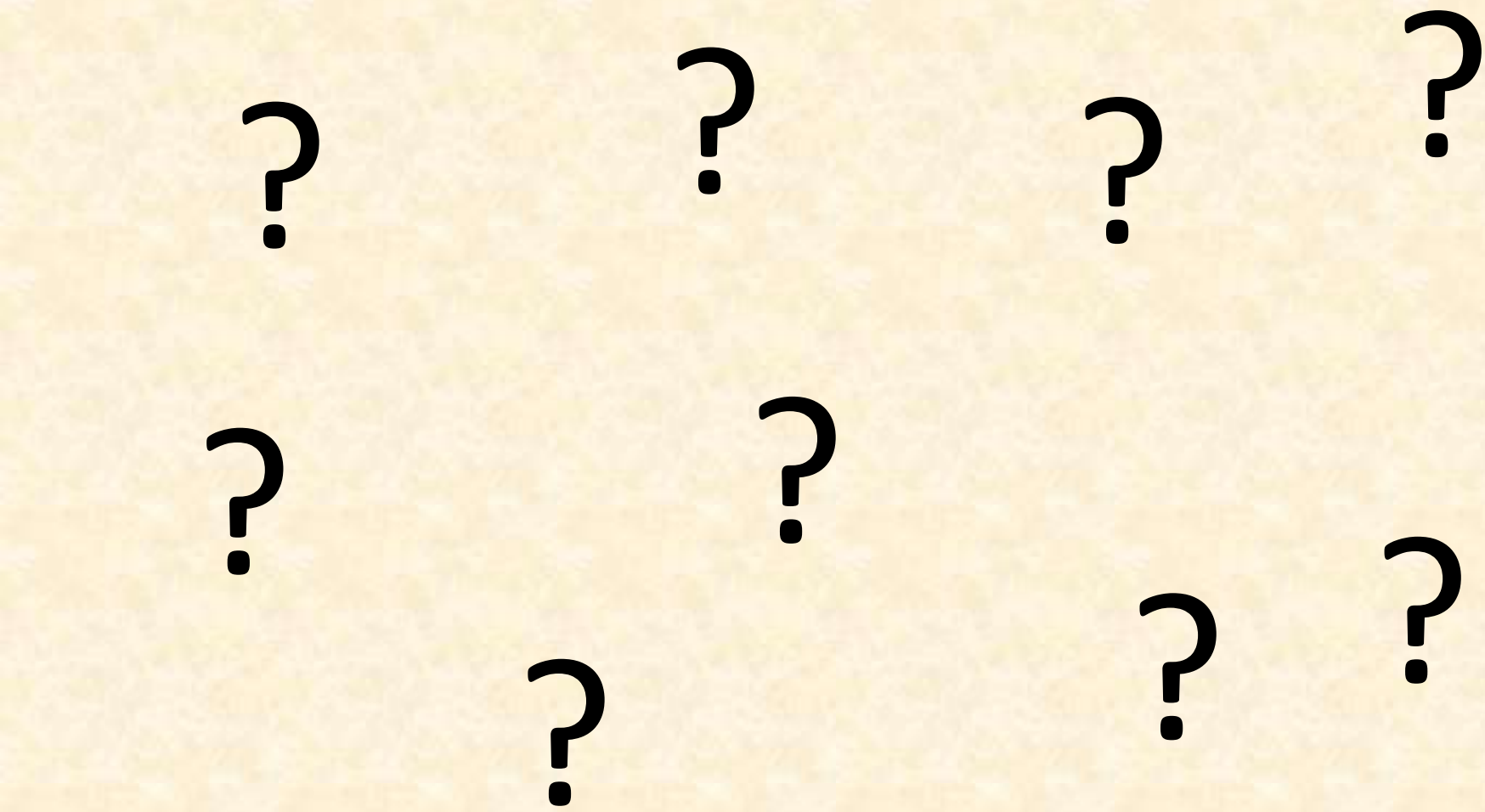
Use of AI

- **Description:** Auto-Owners requested AI integration in the application, potentially requiring paid software and substantial data and computational resources for model training.
- **Mitigation:** We will collaborate with our sponsor to define a feasible AI strategy and explore cost-effective AI solutions.

Compatibility Challenges

- **Description:** Our team must establish a connection between the Microsoft SQL Server and the Angular frontend using Spring Boot and REST APIs, which involves significant preliminary setup.
- **Mitigation:** We will adhere to a strict schedule to ensure all preparatory tasks are completed, enabling the integration of these components.

Complex UI/UX requirements

- **Description:** A complex UI may cause performance problems, implementation difficulties, user confusion, and increased security vulnerabilities.
- **Mitigation:** We will perform iterative usability testing and collaborate with our sponsors to optimize and simplify the UI. We will also investigate API security to prevent vulnerabilities.

Questions?