MICHIGAN STATE UNIVERSITY

Project Plan Presentation

Customer Intent Engine and Training Tool

The Capstone Experience

Team HAP

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From Students…
…to Professionals

Project Sponsor Overview

- HAP is a nonprofit health insurance plan organization founded in 1960.
- Located in Troy, Michigan.
- Subsidiary of Henry Ford Health.
- Partner with doctors, employers and community groups to enhance the overall health and well-beings.
- HAP was among one of the first 21 health plans in the United States to publicly report on quality of care.

Project Functional Specifications

- Enhance HAP customer service skills training.
- Build a web application.
- Provide insights from past call transcripts via an interactive dashboard and graphs.
- Identify customer intents from call transcripts.
- Provide a Chatbot that answers customer service concerns.

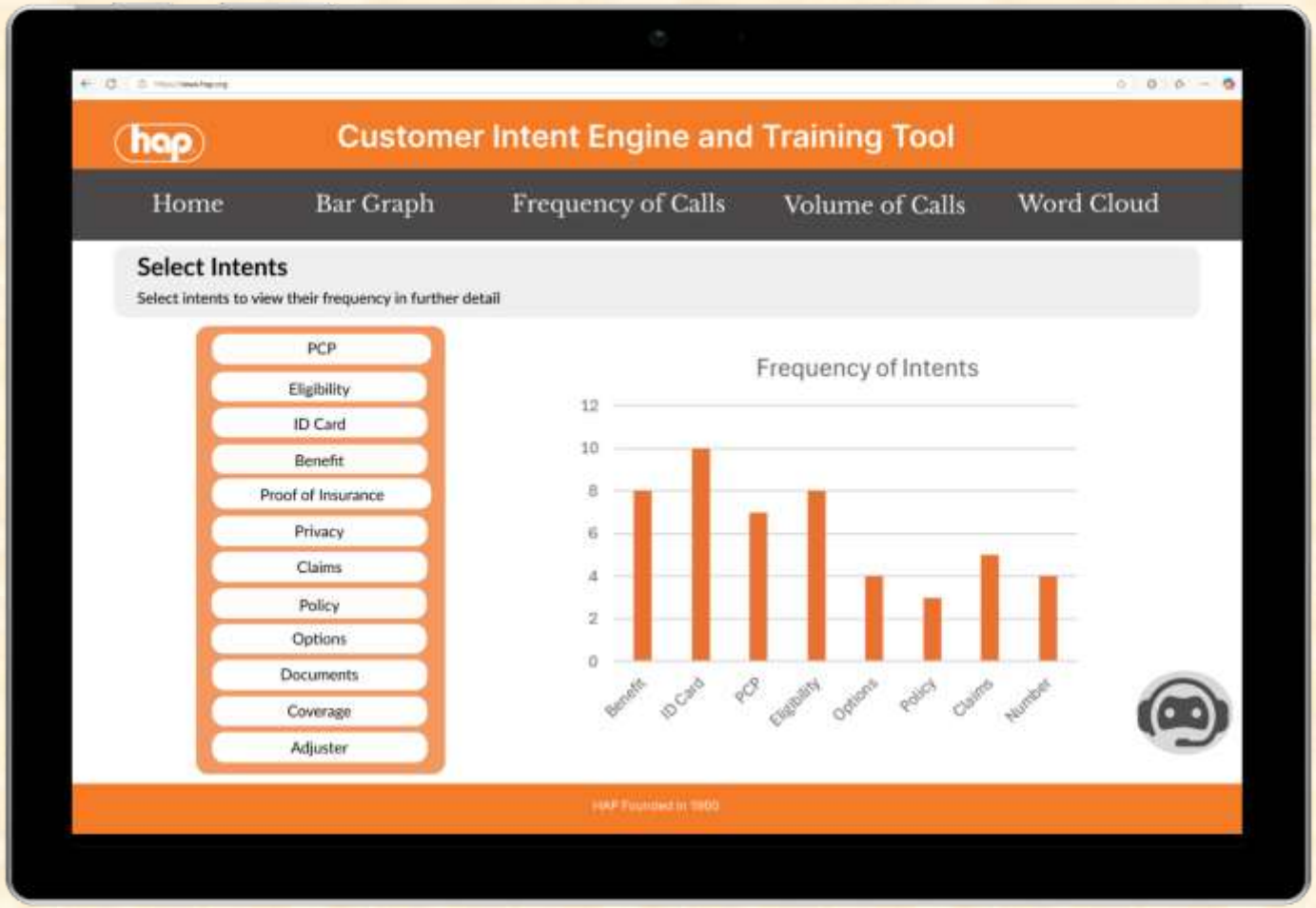
Project Design Specifications

- The web application includes interactive graphs and a dashboard to enhance employee training.
- Detailed information is presented in a modal popup.
- A smart Chatbot is integrated in the lower right corner for easy access.

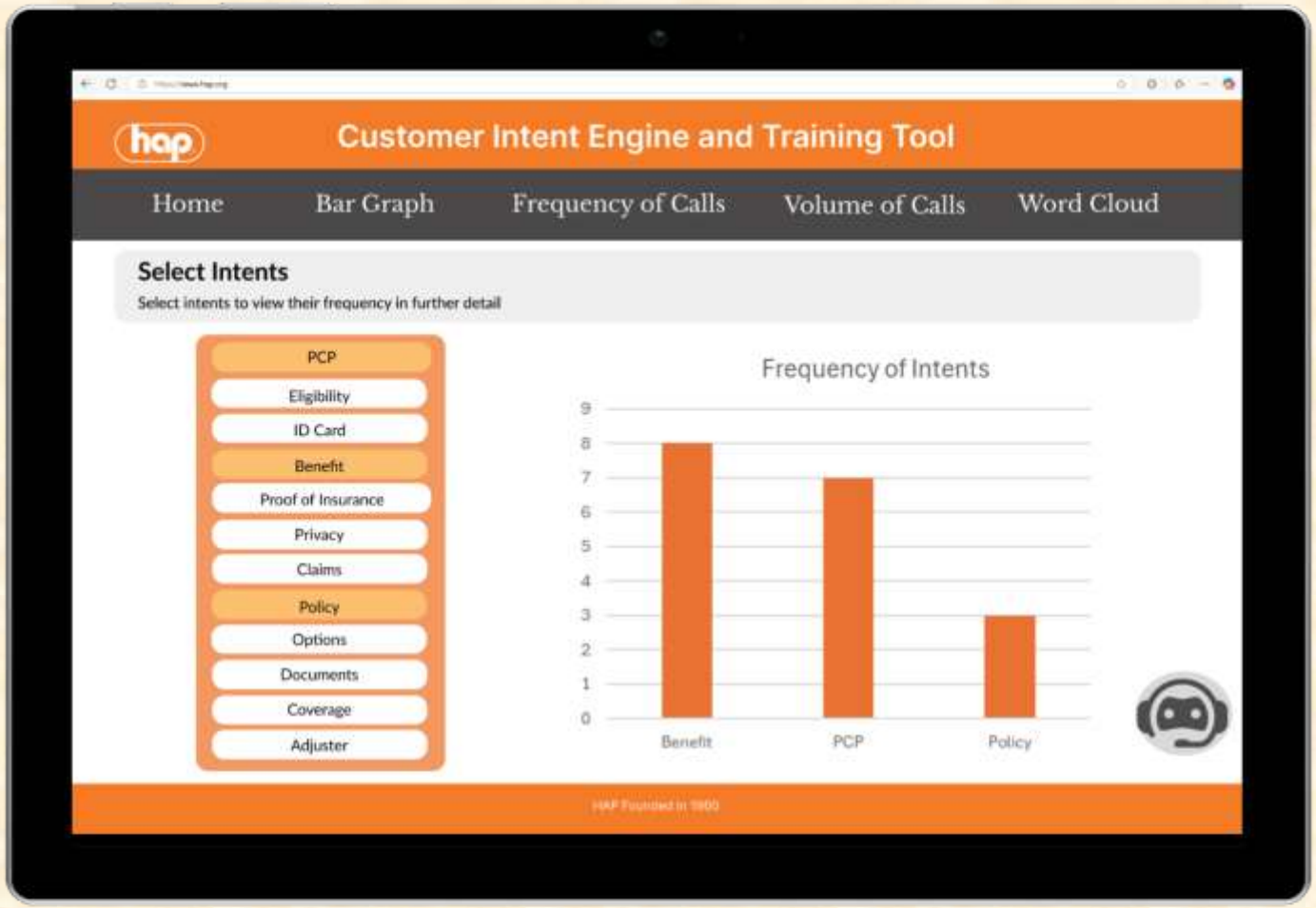
Screen Mockup: Homepage

Screen Mockup: Chatbot

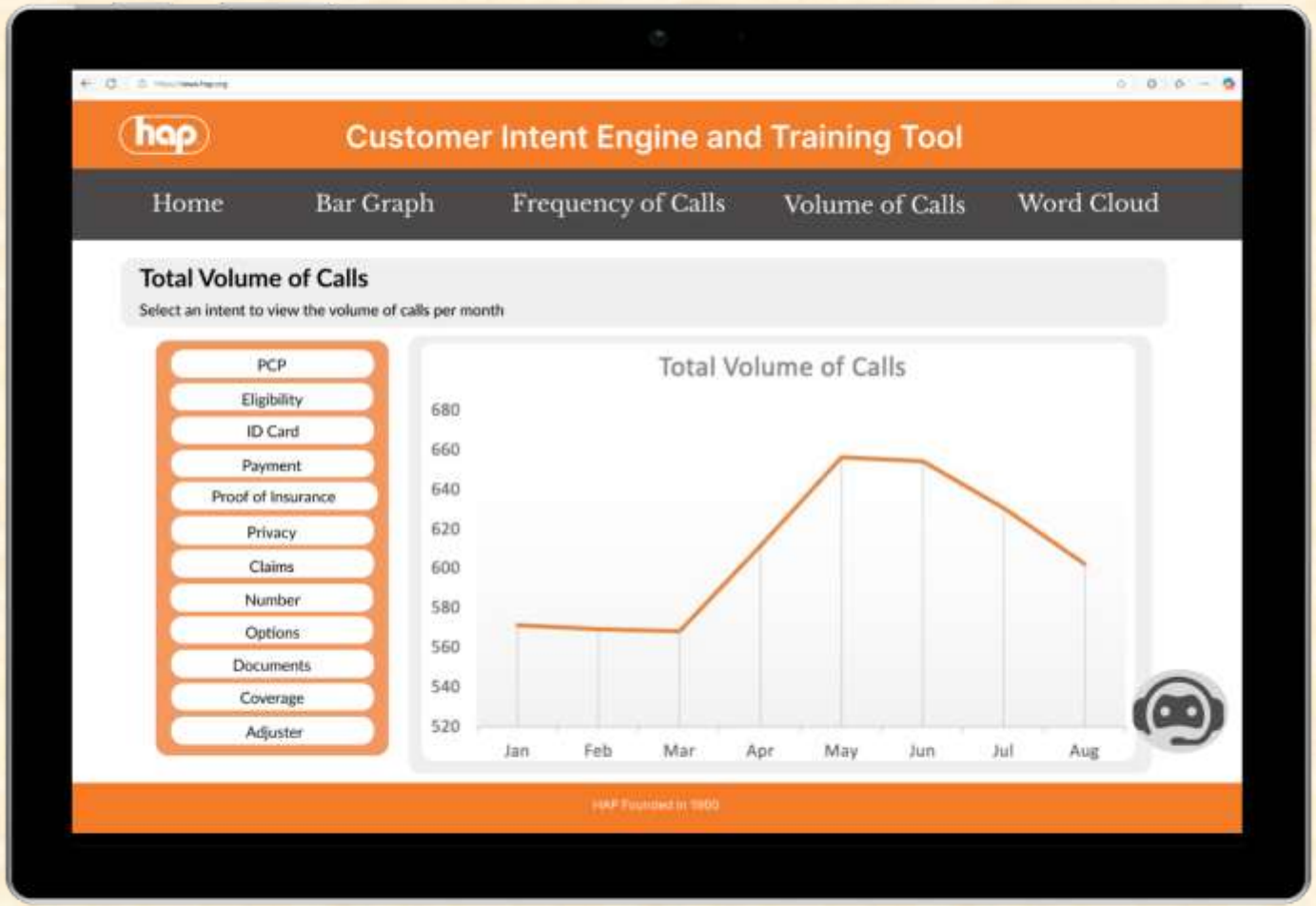
Screen Mockup: Bar Graph



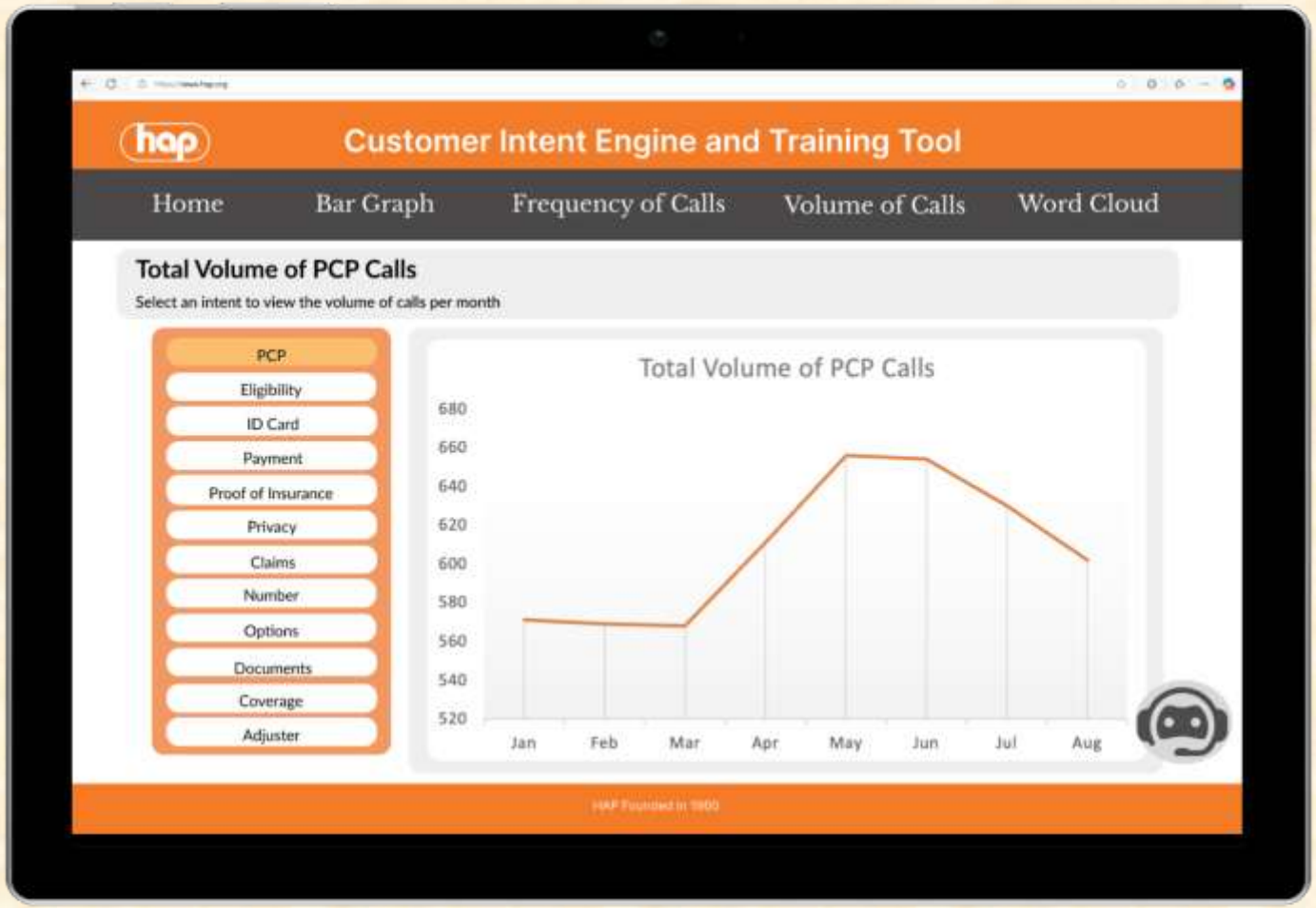
Screen Mockup: Bar Graph



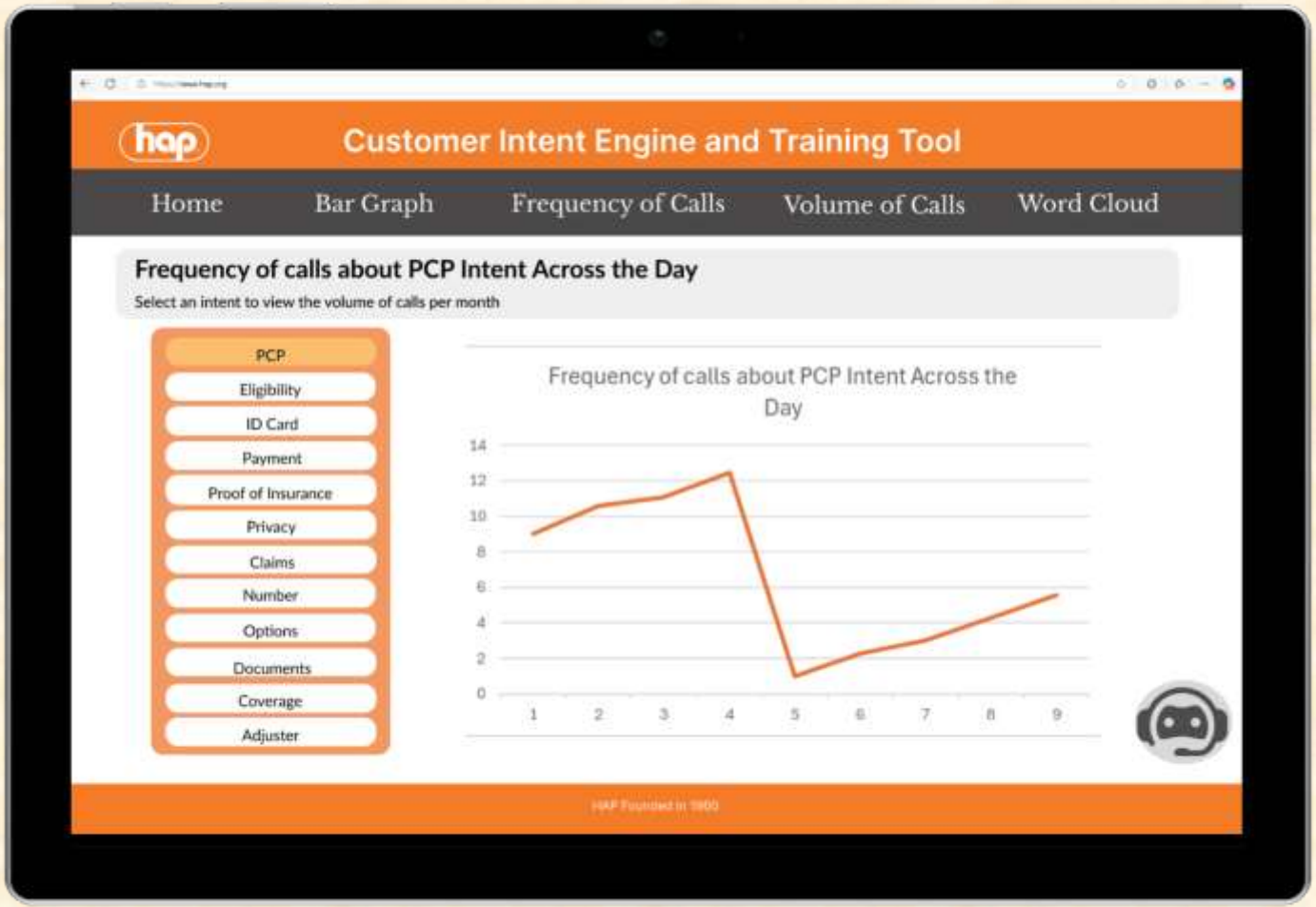
Screen Mockup: Volume of Calls



Screen Mockup: Volume of Calls



Screen Mockup: Frequency of Calls



Screen Mockup: Word Cloud

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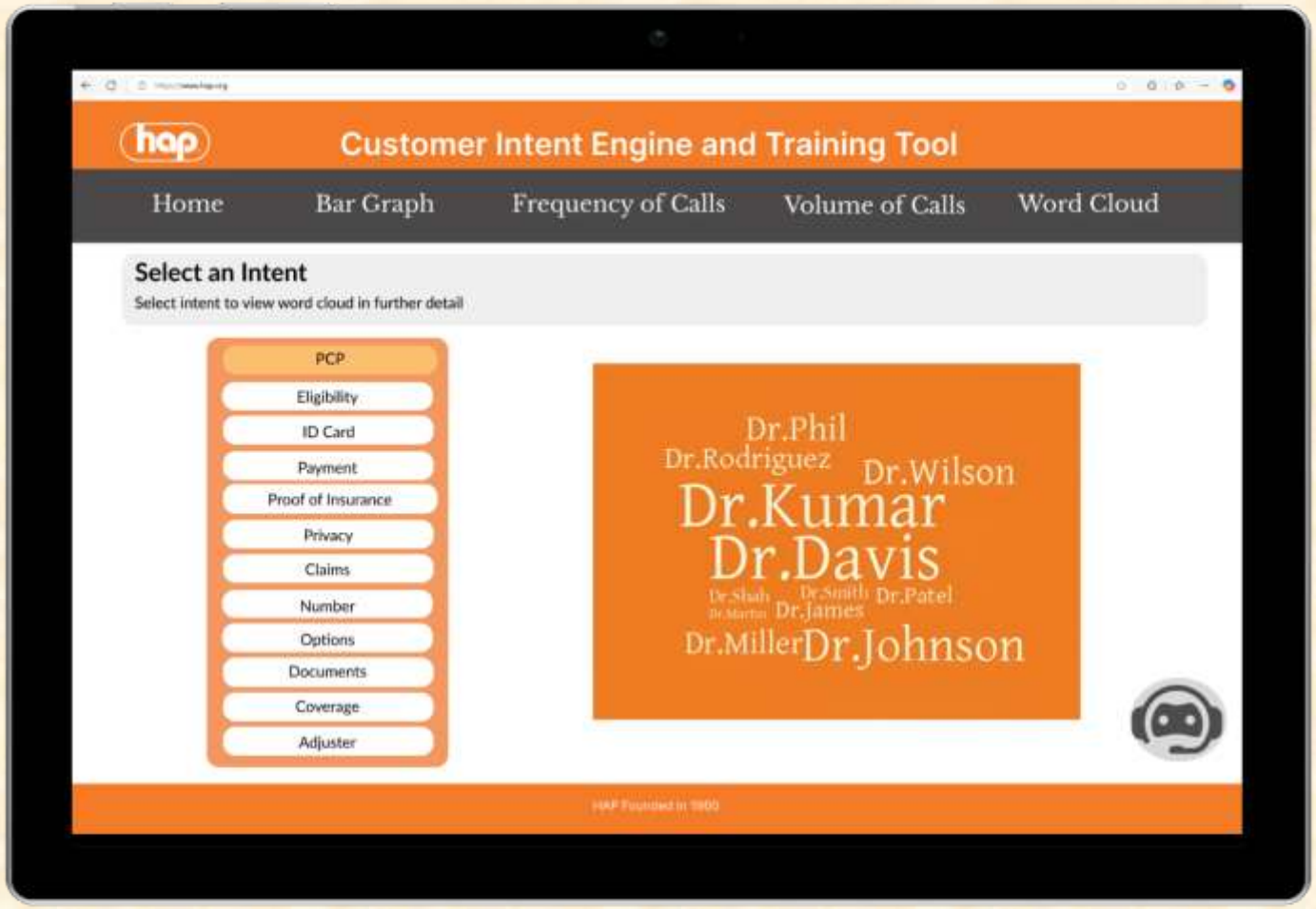
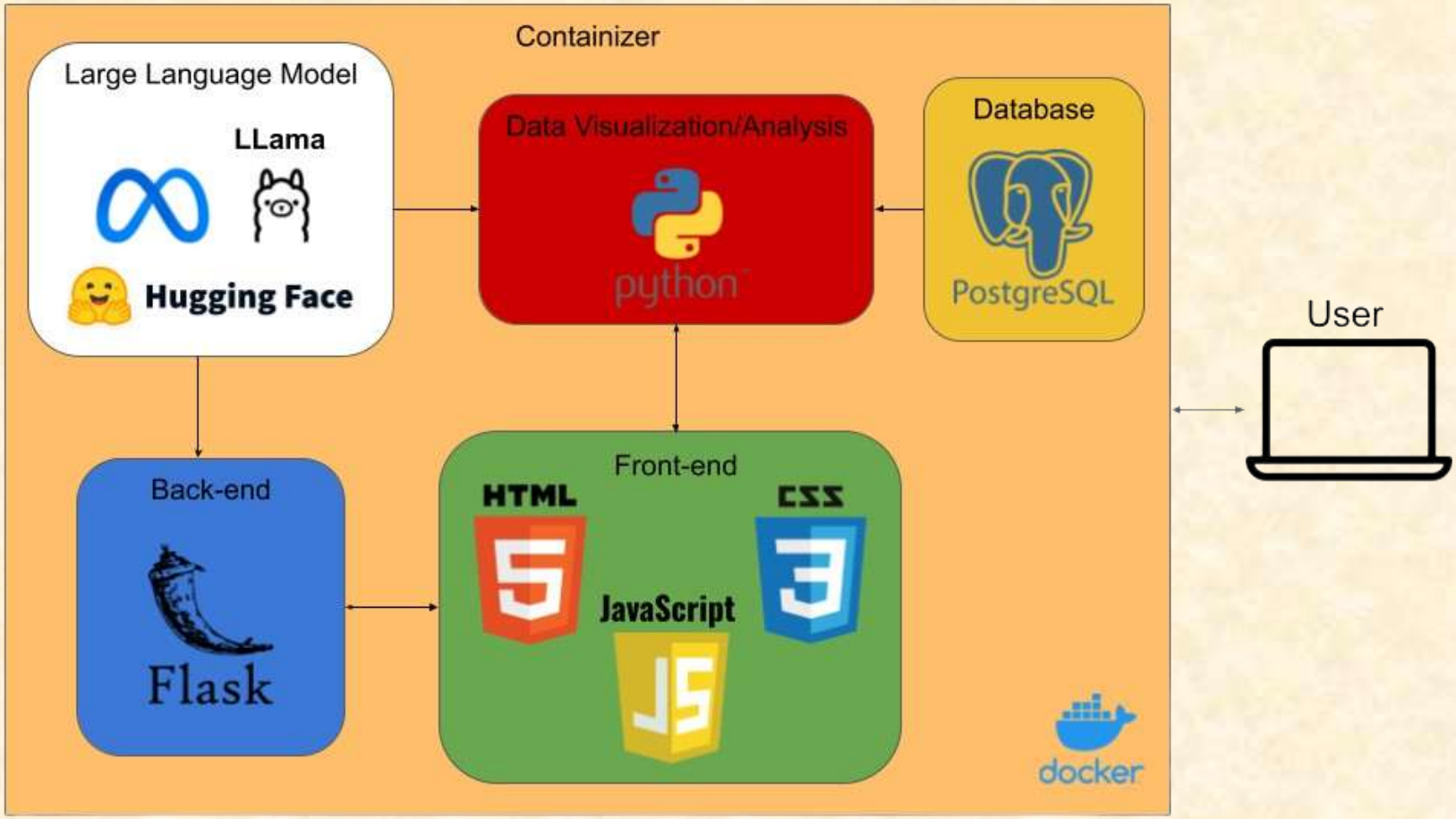


Project Technical Specifications

- Train an AI model to detect intents from call transcripts.
- Train a smart Chatbot to answer customer service training questions.
- Perform data analysis to get insights from call transcripts.
- Build a web application with multiple interactive dashboard and graphs.

Project System Architecture



Project System Components

- Hardware Platforms
  - Hardware is not applicable to our project.
- Software Platforms / Technologies
  - Web Development: HTML, CSS, JavaScript, Flask.
  - Data Visualization/Analysis: Python.
  - Database: PostgreSQL.
  - AI models: Local LLMs like Llama.

Project Risks

- Unlabeled Dataset
  - The dataset is unlabeled.
  - We will manually label it or use a pre-trained model like GPT to generate labels.
- Noisy Transcripts
  - Some transcripts generated with Genesys software may not be accurate based on the user's call.
  - We will use context clues to determine intents or remove the noisy transcript based on the AI model's low confidence score.
- Multiple Intents
  - The transcripts contain multiple intents, so the AI model may be confused.
  - We will manually review the transcripts and specify which parts of the call correspond to different intents.
- Slow Inference Time
  - The AI model is large, so the inference time may be slow, which could negatively impact the user experience.
  - We will perform model optimization, such as quantization or pruning.

Questions?