4. API

Express is the web application framework that is used to connect the front end and the back end. It is a simple API that exposes what are known as Middleware functions. These are functions that help facilitate the response-request cycle that is typical of web applications.

The templates engine in Express was also used to transform static template files to dynamic HTML files that are then forwarded to the client.

The front and back ends of the project communicate any time an update is made to the product database. One example is when editing an order. A user completes the HTML form with the desired data for a given product. The HTML form data is parsed, and the requisite information is formatted then sent to the database.

Another example of communication between the two sides is when an order is placed. Again, the user completed the HTML form which parsed then sent to the database. The necessary changes are made in the database and then this updated information is served back to the front end to update the displayed values.

As for the chatbot, it was created using Chatbase's chatbot API. The large language model used was built on top of OpenAI's ChatGPT.

Future Work

There are several considerations for future work considering what was delivered is the minimum viable product. One consideration for future work is to make improvements to the chatbot that is available in the current version. As of now the chatbot utilizes the ChatGPT language model which is very useful for general tasks; however, the specific implementation of the chatbot was given a few PDFs containing information related to our product to train it. The performance is adequate but can be improved by training it more to create a good knowledge base related to the product. It can also potentially be replaced by OpenAI's new Assistants API that is used to create virtual assistants. This can help narrow down the focus on the chatbot to tasks that are specific to the application instead of being a more generalized chatbot.

Originally, the application was envisioned to record data and provide analytics that were useful for optimizing stock inventory and providing time series analysis and prediction; however, due to time and technological constraints, this feature had to be cut from the project. Future development of this product should include these features as those could give the inventory system an edge in the market.