Proposal for MSE Capstone Project

Project Title: Collect and Display Data Metrics of a
Product Ordering Site

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Project Sponsor: Trane Technologies

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Collect and Display Data Metrics of a Product Ordering Site

Objective

The aim of this project is to compile and organize data metrics about products from a product ordering website, and then display this information in a simple and appropriate manner.

Background

This project was a request from the business leaders of the project sponsor, Trane. One portion of Trane's services is creating orders of their products for their customers. This process uses two company sites: Trane Select Assist (TSA) and WorkSight. In TSA, customers, employees, and other designated people can browse the products and units available, and then compile orders as needed. This site also provides reports, price estimates, and other information that may help in the planning stage before the order is officially made. When one wishes to submit an order, they export it from TSA and import it to WorkSight to officially process the order.

The business leaders wish to gain a deeper understanding of the actions performed by the TSA users. For example, one of these actions is that employees can create pseudo-orders and generate reports to send to customers. Since we are not compiling any data from TSA at the moment, we have no way of keeping track of which products were selected for consideration nor that a report was generated. This project aims to compile any data metric from TSA and display it to the business leaders so they may use it for future predictions.

Current Project

The current project focuses on compiling any data metrics requested by the business leaders and displaying the data in a simple manner. The goal is to provide real-time data from TSA which is often used for the planning process of orders. The business leaders wish to analyze the data to predict future trends. The project aims to answer a multitude of questions for each product, such as:

- How many selections are made during a specified period of time? (Day, Week, Month, Quarter, Year)

- Within the product, which specific units are people selecting?

- What kind of user is selecting this product? (customers, employees, etc)

- In what region are these users selecting this product?

- What types of reports are being generated? How many reports over a specified period of time?

The business leaders should be allowed to request the answers to any of these questions for any of the products offered by Trane. Any additional questions may be requested as well for this project and communication will be maintained with the business leaders to ensure that all their requirements are met. This project will also display the requested information to the business leaders as they see fit. Therefore, a new page will need to be created that will include one display screen for submitting the request and one display screen for showing

the information. The information will be displayed with appropriate visualization including, but not limited to: charts, graphs, tables, and text.

Challenges

The following are some of the challenges in this project:

- Ensuring that the business leaders can use this feature themselves, that is, it should not be up to someone from the TSA team to compile and send the data to the business leaders

- Ensure that *only* business leaders and other specified employees have access to this feature; if we add permissions to the users accounts, we must ensure that permissions are updated as needed

- There is no set location for the display portion of the project; it could be placed on the TSA website but if we decide to have it use a different UI then we need to ensure that any code on TSA interacts with the UI accordingly.

- Another challenge will be exactly how we compile the data in TSA. The database associated with TSA has, rightfully so, separate collections for products, orders, users, etc., and thus we need to we need to be cautious of how we differentiate and organize this data.

Project Schedule

The following schedule is proposed by the student and is agreed upon by the project sponsor. Both parties agreed on developing concrete requirements at the beginning of the project and then using a simplified model of waterfall method for implementation, where each level of the waterfall is represented by the phases listed below. Design diagrams will be created as and when they are needed, mainly during the display mechanism phase.

Phase	From	To	Credit
Develop Requirement Documents and Problem Analysis	Jan 1, 2024	Feb 11, 2024	2
Establish Data Extraction and Organization	Feb 12, 2024	May 31, 2024	4
Create Display Mechanism	June 1, 2024	Sept 30, 2024	3
Test and Refine	Oct 1, 2024	Nov 17, 2024	2
Demonstration and Project Report	Nov 18, 2024	Dec 15, 2024	1

Resources

The project sponsor will provide the student with a computer to complete the project and access to the data within TSA. The student will also use their personal computer to assist with the documentation of this project.