CS 3250 Fall'20 - Team Project Product Backlog

Purpose of this Document

The purpose of the Product Backlog is to provide you with a set of product requirements for the rest of the semester. At the start of each sprint your team will be responsible for choosing a set of items from the Product Backlog to add to your Sprint Backlog (for that one sprint). It is up to you and your team to decide how to prioritize the different items in the Product Backlog, and how many you want to add in each sprint.

Background

Recall that the overall theme for the team projects is to help a fictional, fledgling company to build out their technical infrastructure. Within that theme there are smaller areas/initiatives that correspond (e.g. building a "data warehouse" with a Database/pseudo-DB to store all company records, automating incoming/outgoing product orders, ability to report on ordering trends, customer behavior and relationship management, etc.). Each of those areas has one or more "User Stories" that are described from the point of view of an end user (someone who will use or benefit from the work you complete).

Below are the set of User Stories within each of those smaller areas. There is likely more here than you will be able to complete in this semester, making it all the more important that you choose the ones you feel your team can successfully complete, and that you think will be the most valuable to the company. Before that, here are some additional notes on how to carry out the simulations for the future sprints.

Simulation Notes

The user stories and their functionality described below are based on your simulated transactions having some notion of time involved. To achieve this, assume that customer/supplier orders will have the meta-information about the date and time (in addition to usual product id, quantity, supplier id or email, etc.). Specifically, for all simulations that are run, and eventual testing, you can assume an input csv file with the fields denoted below. There is one for customer orders and one for supplier orders. The

Customer order simulation input file fields:

- date, email, shipping_address, product_id, quantity

Supplier order simulation input file fields (to add to company inventory):

- date, supplier_id, product_id, quantity

In some future sprints you will receive these simulation input files. You will want to read them in, and then loop over them by date in order to simulate the time dimension.

Most data will be simulated as well, but there will be one or more authentic email addresses to facilitate testing of the functionality described below.

User Stories

- The inventory should be housed and managed in a database or pseudo-database. The usual create, read, update, delete (CRUD) operations should be possible so that individual products can be added, verified, updated, or deleted in the DB/pseudo-DB.
- To test the inventory DB, and to convince the executives in the company to continue investing in technology, there should be a way to simulate the inventory DB being updated through both supplier events (products being added to the inventory and/or quantities being increased) and customer/buyer events (products being removed and/or quantities being decreased). [This should be done assuming the format in the customer/supplier simulated input files described above.]

- Customers should be able submit orders either via web/email/messaging platform. The customer will need to provide an email address, shipping address, and one or more tuples of the form (product id, quantity) denoting which product(s) they wish to buy and how many.

- The finance, marketing, and sales departments want to understand customers better but need the historical data to do so. They want to have a database/pseudo-DB that stores all of the customer order information along with the time and date of their orders. [This database will grow each simulated "day".]

- The company's marketing and sales departments wants to receive daily reports showing which were the 10 most-ordered products, and who were the 10 best customers (ordering the most by dollar amount).

- The company's finance department wants to receive daily reports of:
    - how much the company has in assets (sum of product quantities x their wholesale prices)
    - the total number customer orders coming in
    - the total dollar amount of customer orders coming in

  Reports should show a time-series plot for each of these three to allow for quick visual confirmation of what is happening over time.

- Customers should receive a confirmation (via email/message) when they make an order. They should also be able to cancel an order within a certain amount of time, and receive a confirmation of the cancellation.

- The marketing and sales departments want to have an email sent to a customer immediately after they make an order. The email should make a recommendation to the customer to buy one or more additional products. The recommended projects will be determined based on what past customer have often purchased when buying the same product.

- Customers should be able to message the business on a common messenger platform (e.g. Slack, FB Messenger, etc.) and make the following types of requests:
    - Show me my past orders
    - Recommend a product to me
    - What products are available for less than $20?