**Sales Prediction Systems Requirements Specification Document.**

**Document Description.**

This document contains the functions that the data analytics pipeline will be assisting its intended users with, the intended users of the pipeline as well as how the will be interacting with it so as to complete the data analysis tasks.

**Functional requirements.**

The data analysis pipeline is expected to carry out the following functions:

* Compare and analyze the values of the different sets of properties of each of the particular products in each store and use the findings to predict the volume of sales of these products.
* Provide the intended users with information that will guide them in the stocking and arranging of products for sale in the different outlets.
* Store information regarding the sales of each product in each store.

**Intended Users.**

The two classes of individuals that are expected to be using and interacting with the pipeline are mentioned below:

1. The Salespersons.
2. Warehouse employees.

**How the intended users interact with the pipeline.**

1. **The Salespersons.**

The salespersons will be interacting with the data analysis pipeline in the following ways:

* They will be acquiring information from the pipeline on how to organize the products in their stores in a way that will increase sales.
* They will acquire information from the pipeline on which products are bound to sale more in their stores, therefore, guide them during the stocking process.
* They will be able to record the volumes of sales of each product that will have been sold in their stores.
* They will be able to record products that are out of stock in their stores.

1. **The Warehouse employees.**

The warehouse employees will be interacting with the data analysis pipeline in the following ways:

* While forwarding products from the warehouse to the different stores, they will be able to acquire information from the pipeline regarding which products have more market in the different stores.
* They will be able to update the database of the pipeline. They will be able to insert information regarding the different products have been distributed to the different stores.

**Use Case Diagram.**

The use case diagram of the sales analysis and prediction data pipeline has been attached at the end of the document.

**Description of the Use Cases in the Use Case Diagram.**

Below are the descriptions of the key use cases in the use case diagram.

1. **Generate product arrangement and restocking format.**

This process will be initiated when a salesperson accesses the pipeline to retrieve information that he can use to organize or stock products in store in such a way that the values of the different properties of the products will lead to the maximum sales.

There will be an analysis that will be carried out to determine which way the products should be arranged in the store, in which store they should be stocked (and many other properties) that will most likely lead to an increase in the volumes of sales of those specific products.

During the analysis, the values of the different properties of the products will be used to predict the volume of sales of the products in question and as this prediction goes on, the values of the properties that are shown to lead to the prediction of the largest volume of sales will be returned to the salesperson for implementation.

**Actors.**

The actors in this use case are:

* The salesperson.

**Outcome.**

The end result of this activity will be that the pipeline will present to the salesperson the best way in which to stock products and arrange stock in his store.

1. **Organize amounts of products to be restocked in stores based on predicted sales.**

This activity will be initiated when a warehouse employee accesses the pipeline so as to acquire information on the amounts of products that are to be sent to the different stores during the restocking process.

An analysis of the volumes of sales of the products in question at the specified stores will be made so as to determine the amount of products to be sent for the restocking process based on the predicted sales of these products.

During the analysis, the sales history of these products at the stores to which they are to be stocked will be analyzed and basing on the properties of the store and the product, the sales of these specific products at the specific store will be predicted so as to determine the amounts of the particular product to be restocked in the specific stores.

**Actors.**

The actors in this use case are:

* The warehouse employee.

**Outcome.**

The end result of this activity will be that the pipeline will present to the warehouse employee the best amount of products to be sent to a specific store for restocking based on the expected volumes of sales so as to reduce on overstocking and losses in the long run.

**The New Github Repository.**

Because the link to the first github repository did not work, the link to the new git hub repository to which the documents are being uploaded is below.

https://github.com/Data-Science1998/RecessDataScience.git