High level overview of the system

This is my design for the system’s main components. Each box in the diagram will represent a class.

In next diagrams the relationships between each class will be explained in, more detail.

User interface

Displays relevant screen depending on the system’s state.

Displays buttons and text boxes to make the use of the system easier for the user.

Supplier class

Contains the format of data for object supplier

Season class

Contains the format of data for object season

Customer class

Contains the format of data for customer product

Product class

Contains the format of data for object product

Inference Engine

Uses rules from knowledge base and user’s input to calculate the appropriate solution

Solution contains the quantity to buy or sell and finds best customer or supplier for that case

Knowledge base

Saves rules about the product

Saves rules about the customers

Saves rules about the suppliers

Saves rules about the seasons

File class

Enables writing to file and reading file

Relationships between classes

Knowledge base

Saves rules about the product

Saves rules about the customers

Saves rules about the suppliers

Saves rules about the seasons

Knowledge base and data format classes

Product class

Contains the format of data for object product

Supplier class

Contains the format of data for object supplier

Customer class

Contains the format of data for customer product

Season class

Contains the format of data for object season

The knowledge base contain knowledge about Seasons, customers, suppliers and products. In the other 4 classes (Object format classes) the format of the object is stored. For example for product there will be fields such as productid, average order quantity, Product Name and others. The knowledge base will create objects from these classes and save the data about them for every field.

Knowledge base and Inference engine

Knowledge base

Saves rules about the product

Saves rules about the customers

Saves rules about the suppliers

Saves rules about the seasons

Inference Engine

Uses rules from knowledge base and user’s input to calculate the appropriate solution

Solution contains the quantity to buy or sell and finds best customer or supplier for that case

Inference Engine will use the data stored in the knowledge base about the products, customers, supplier and seasons. It will use that obtained data to generate the final solution. It will calculate the quantity or product to buy or sell and picks the customer and supplier with the solution.

Inference engine and user interface

User interface

Displays relevant screen depending on the system’s state.

Displays buttons and text boxes to make the use of the system easier for the user.

Both inference engine class and user interface class send data to each other. The user interface class sends the recorded input from the user to Inference engine, so the input can then be used for calculation of the solution. The Inference engine sends the complete solution back to user interface class, so it can then be displayed to the user on the screen.

Inference Engine

Uses rules from knowledge base and user’s input to calculate the appropriate solution

Solution contains the quantity to buy or sell and finds best customer or supplier for that case

User interface

Displays relevant screen depending on the system’s state.

Displays buttons and text boxes to make the use of the system easier for the user.

Knowledge base

Saves rules about the product

Saves rules about the customers

Saves rules about the suppliers

Saves rules about the seasons

The User Interface class gets data stored in the knowledge base to then display it on the screen. The data will be displayed inside the buttons as answers to questions

User interface and Inference engine

File class and Inference engine

When the inference engine calculated the final solution, the solution then will be saved to a file. A method from the file class will be called in Inference engine class and this method will save the solution into a file. The solution will be saved with a date of when the solution was created

File class

Enables writing to file and reading file

Inference Engine

Uses rules from knowledge base and user’s input to calculate the appropriate solution

Solution contains the quantity to buy or sell and finds best customer or supplier for that case

File class and User Interface

In the menu there will be an option which allows the user to view previous solutions. To do this the user interface class will get a method from the file class which reads the contents of the file and displays them on the screen for user to see.

File class

Enables writing to file and reading file

User interface

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Displays buttons and text boxes to make the use of the system easier for the user.