Toy Manufacturing System

SPHINXTERS GROUP PROJECT SUBMISSION REPORT

SPHINXTERS | ERP | 28th JUNE 2022

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THE PROBLEM

ABC company is a toy manufacturing company.

Sales team undertakes orders and places the orders to the ERP.

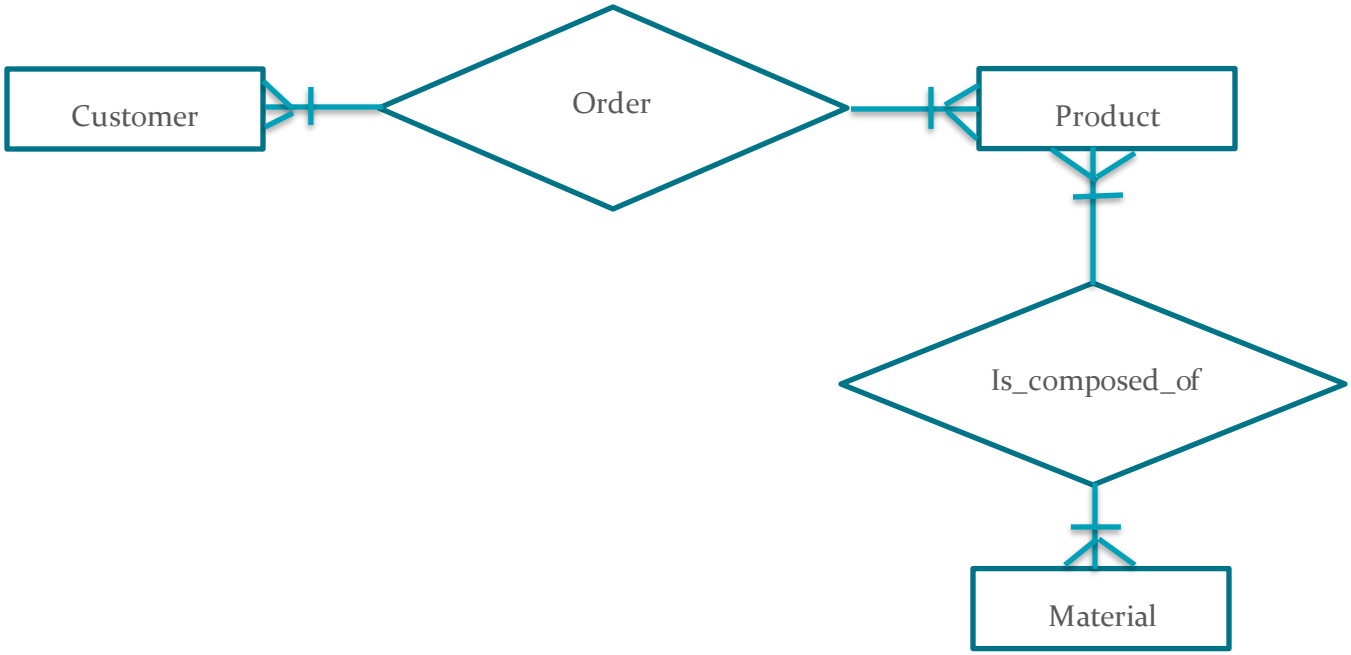
A customer can order only one or several products.

Once the order is placed the production department makes MRP (Material Requirement Plan)

One product is composed of only one or several materials.

Once the MRP is made the finance department makes the BoM (Bill of Materials).

ERD



HOW THE SYSTEM WORKS?

There're five departments.

- Marketing
- Sales
- Finance
- Warehouse, and
- Production.

Each department can access the relevant sections only.

There're eleven sections.

- Customers - Sales
- Products - Production
- Order Placing - Sales
- Row Materials - Warehouse
- Product Planning - Production
- MRP - Production
- BoM - Finance
- Issues - Warehouse
- Receives - Warehouse
- Moving Average - Marketing
- Weighted Moving Average – Marketing

The access into the sections is controlled through the 'Login' interface.

The five departments have five usernames and passwords.

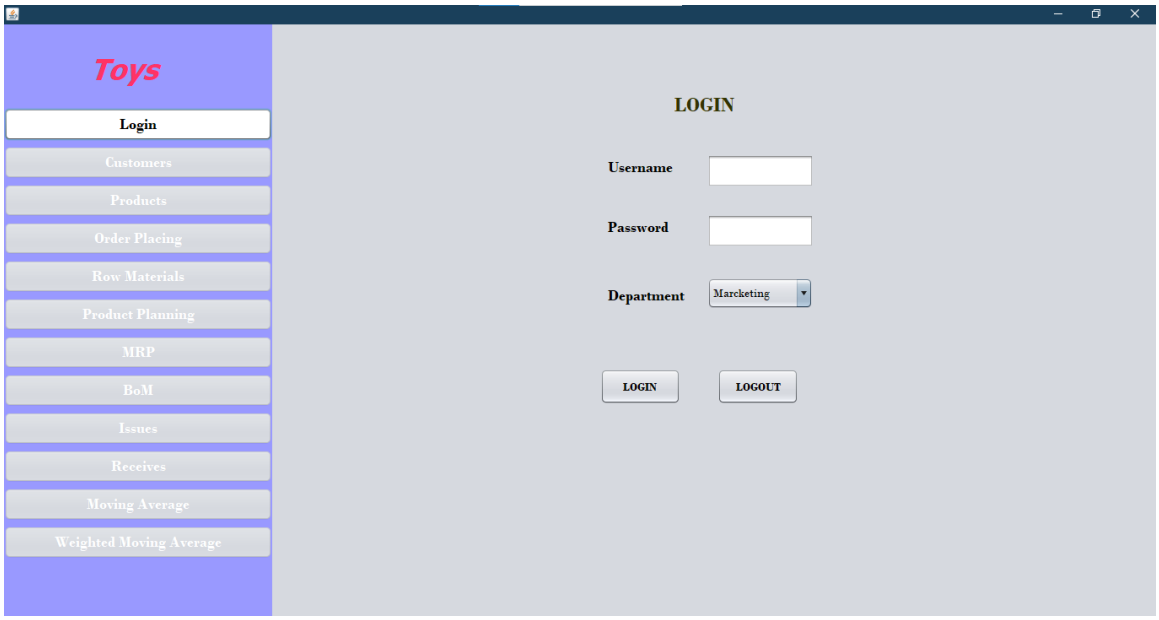


Figure 1: Login Interface

Figure 2: Customers Interface

Already inserted customer ids will be loaded initially into the 'Customer ID' combo box from the database 'customer' table.

But, if you want to add a new customer, you need to type a customer ID which is not listed in the combo box items, then 'Name', 'Address' and 'Tel.' then hit 'SAVE' button.

But, when you need to update/ delete, you need to select the particular 'Customer ID' from the combo box listed items.

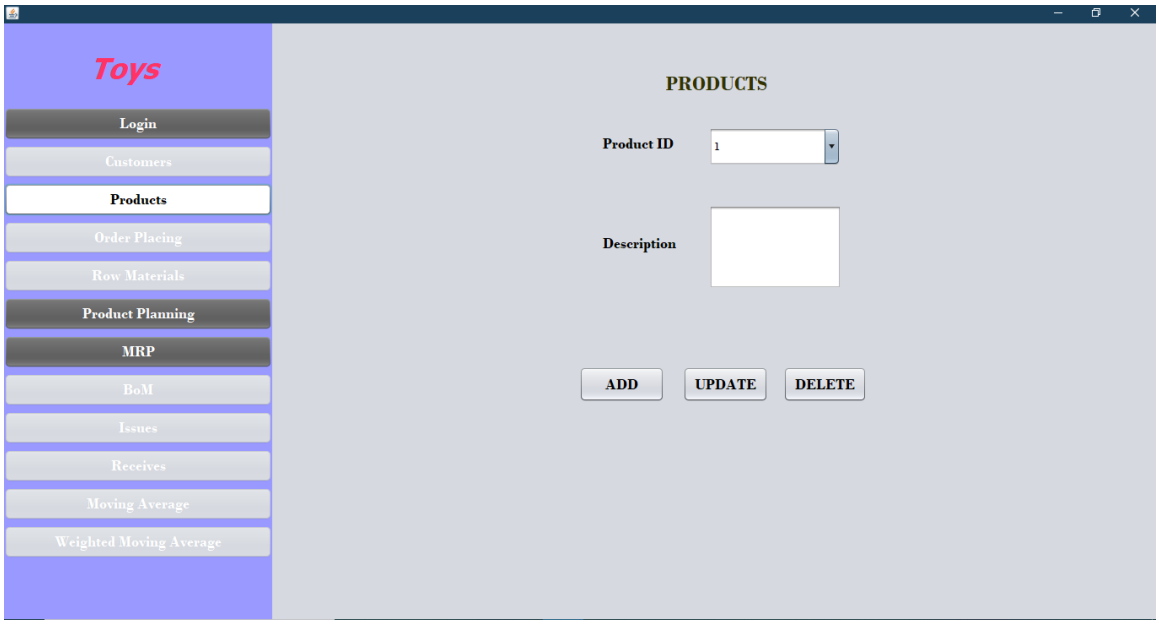


Figure 3: Products Interface

Already inserted product ids will be loaded initially into the 'Product ID' combo box from the database 'product' table.

But, if you want to add a new product, you need to type a product ID which is not listed in the combo box items, then the 'Description' and hit on 'ADD' button.

But, when you need to update/ delete, you need to select the particular 'Product ID' from the combo box listed items.

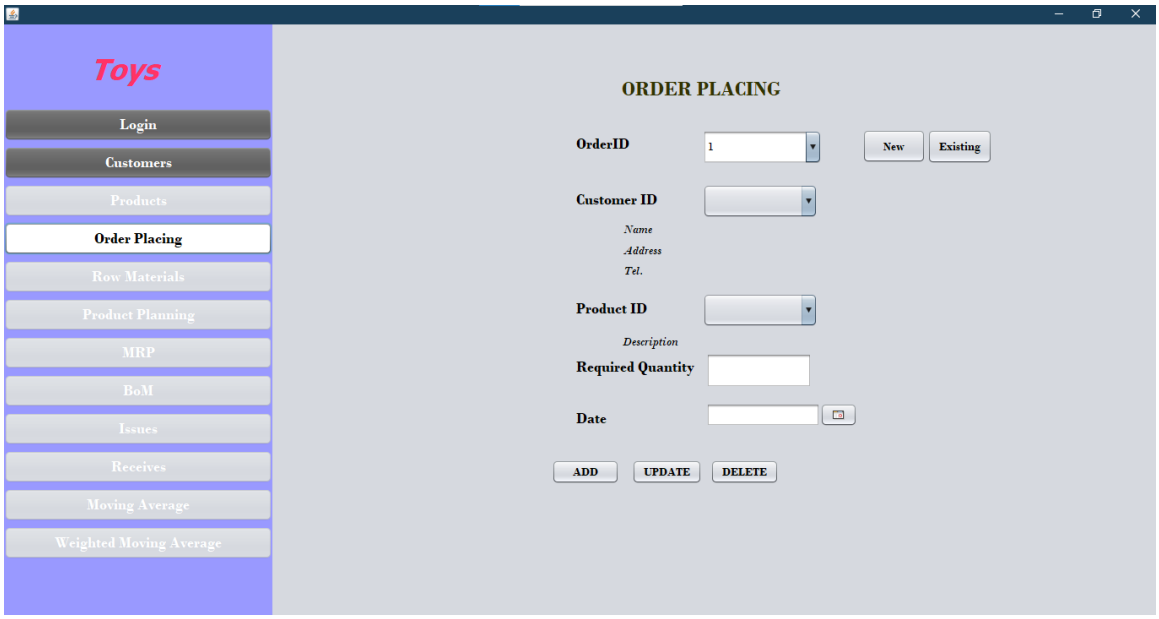


Figure 4:Order Placing Interface

Initially order ids are loaded from the database 'orders' table, which has been added previously.

But, if you want to place a new order, you need to type an order id which is not listed down in the 'Order ID' combo box and hit on 'New' button.

Then the customer ids and product ids will be loaded from the database 'customer' and 'product' tables into the 'Customer ID' and 'Product ID' combo boxes.

Then you need to select the relevant customer id and product id along with quantity and hit on 'ADD' button after selecting the date, the record will be added into the database 'orders' table.

But, if you need to update or delete, you must select the relevant order id from 'Order ID' combo box and then hit on 'Existing' button.

Then the relevant customer id and order id/ ids will be loaded into the 'Customer ID' and 'Product ID' combo boxes from the database 'orders' table.

But you can update the 'Required Quantity' and the 'Date' fields only.

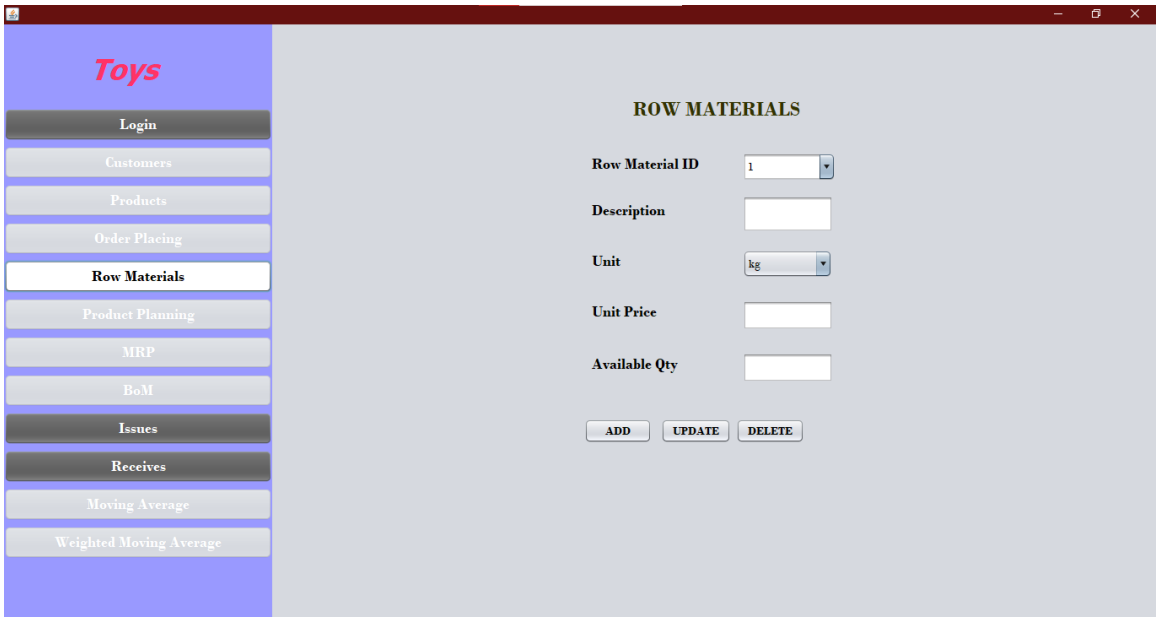


Figure 5: Row Materials Interface

Already inserted material ids will be loaded initially into the 'Row Material ID' combo box from the database 'material' table.

But, if you want to add a new row material, you need to type a material ID which is not listed in the combo box items, and type 'Description', select 'Unit', type 'Unit Price' and 'Available Quantity', then hit 'ADD' button. Then the record will be added into the database 'material' table.

But, when you need to update/ delete, you need to select the particular 'Row Material ID' from the combo box listed items and then rest of the fields will be auto completing.

But you can update 'Unit Price' and 'Available Quantity' fields only.

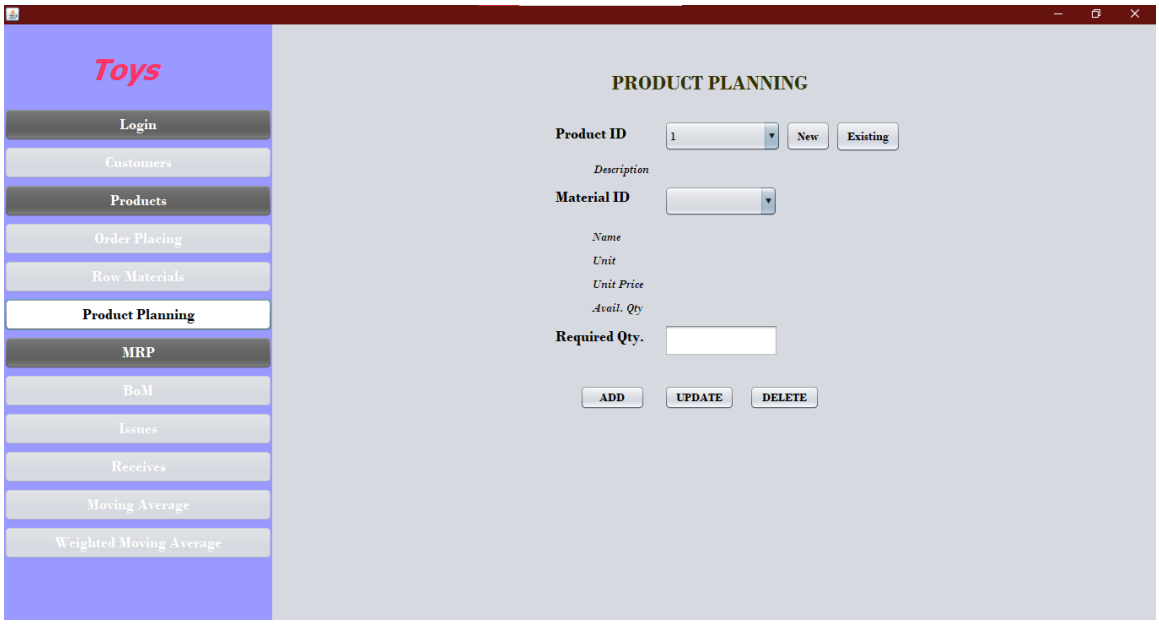


Figure 6: Product Planning Interface

Initially product ids will be loaded from the 'orders' table in the database into 'Product ID' combo box.

If you want to add a new product plan, select the relevant product id and click on 'New' button. Then all material ids will be loaded into the 'Material ID' combo box from the database 'material' table.

Then you need to add the 'Required Qty' and hit on 'ADD' button, it will be added into the database 'product_planning' table.

But if you need to update or delete, you need to click on 'Existing' button after selecting the relevant product id. Then only the relevant material ids will be getting loaded into the 'Material ID' combo box from the database 'product_planning' table.

But you can update only the 'Required Qty' field.

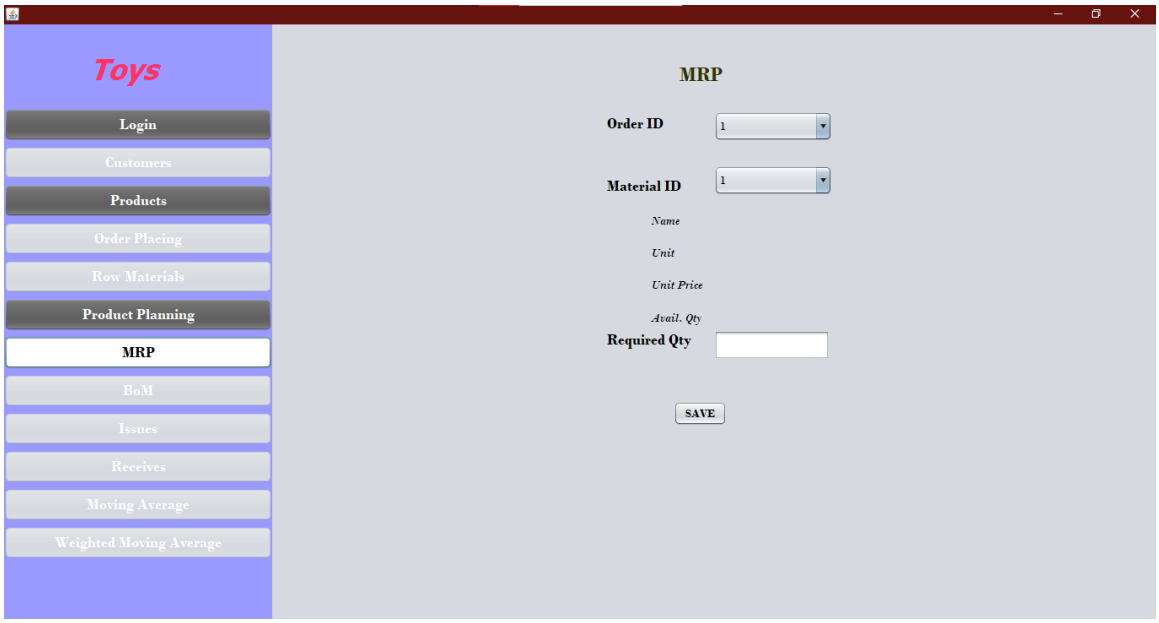


Figure 7: MRP Interface

Initially order ids are loaded into 'Order ID' combo box from the database 'orders' table. Then select one and then, the relevant material ids of that order id will be getting loaded into the 'Material ID' combo box.

By clicking on 'SAVE' button, the record will be added into the database 'mrp' table.

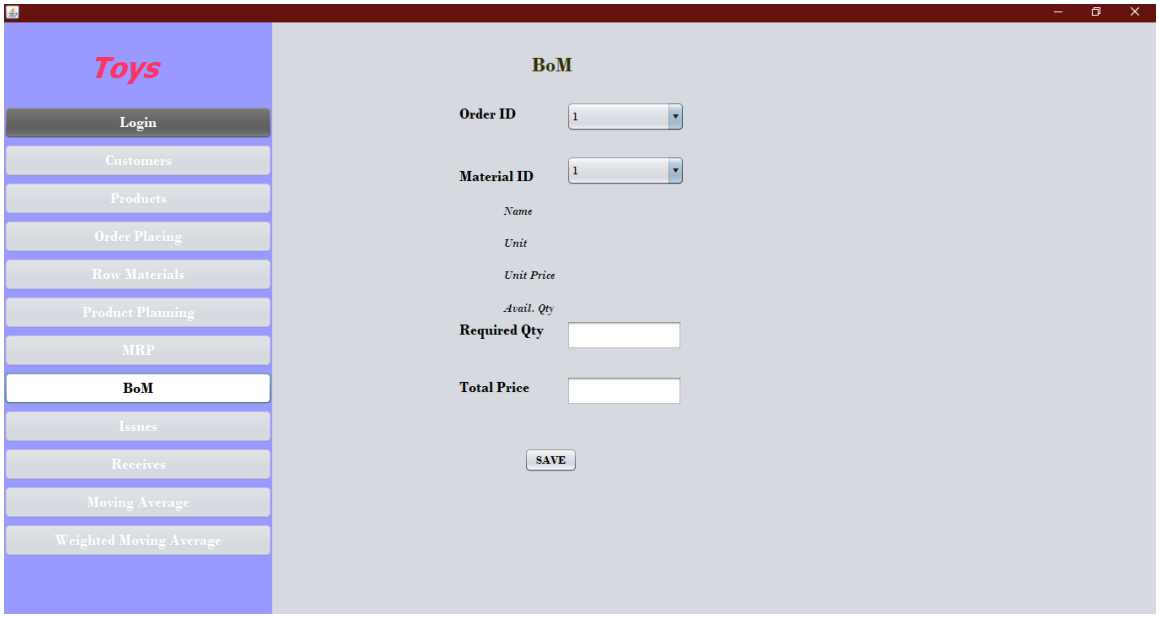


Figure 8: BoM Interface

Initially order ids are loaded into 'Order ID' combo box from the database 'orders' table. Then select one and then, the relevant material ids of that order id will be getting loaded into the 'Material ID' combo box.

In this interface, the total material cost will be calculated.

By clicking on 'SAVE' button, the record will be added into the database 'bom' table.

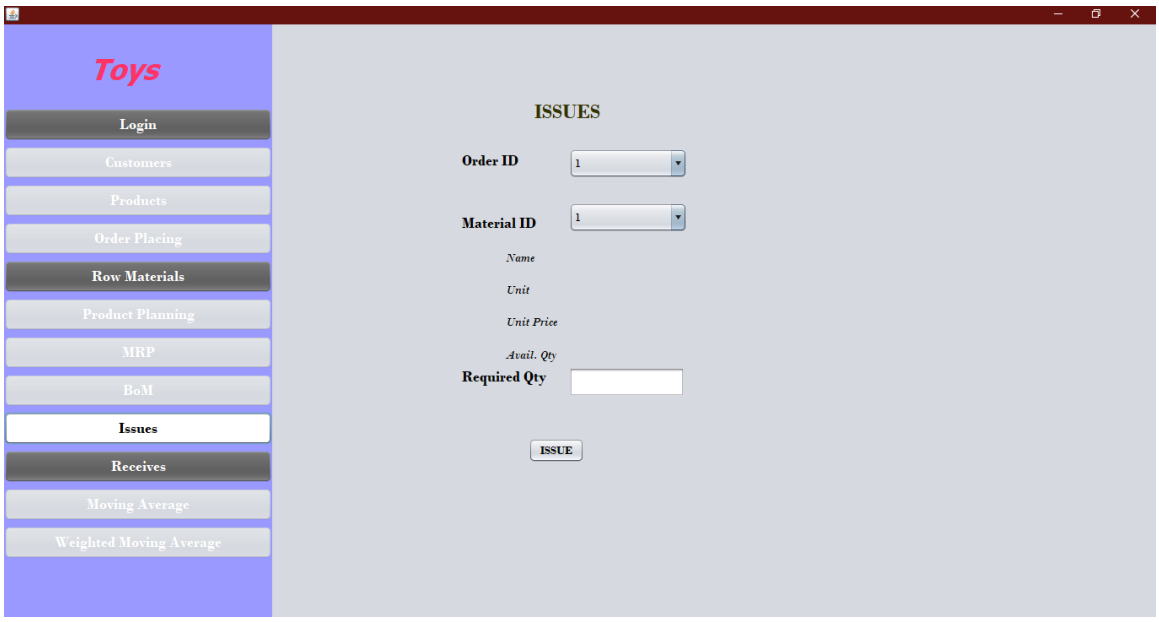


Figure 9: Issues Interface

Initially order ids are loaded into 'Order ID' combo box from the database 'orders' table. Then select one and then, the relevant material ids of that order id will be getting loaded into the 'Material ID' combo box.

By clicking on 'ISSUE' button, the required quantity of selected material will be deducted by the available quantity of that material from the database 'material' table.

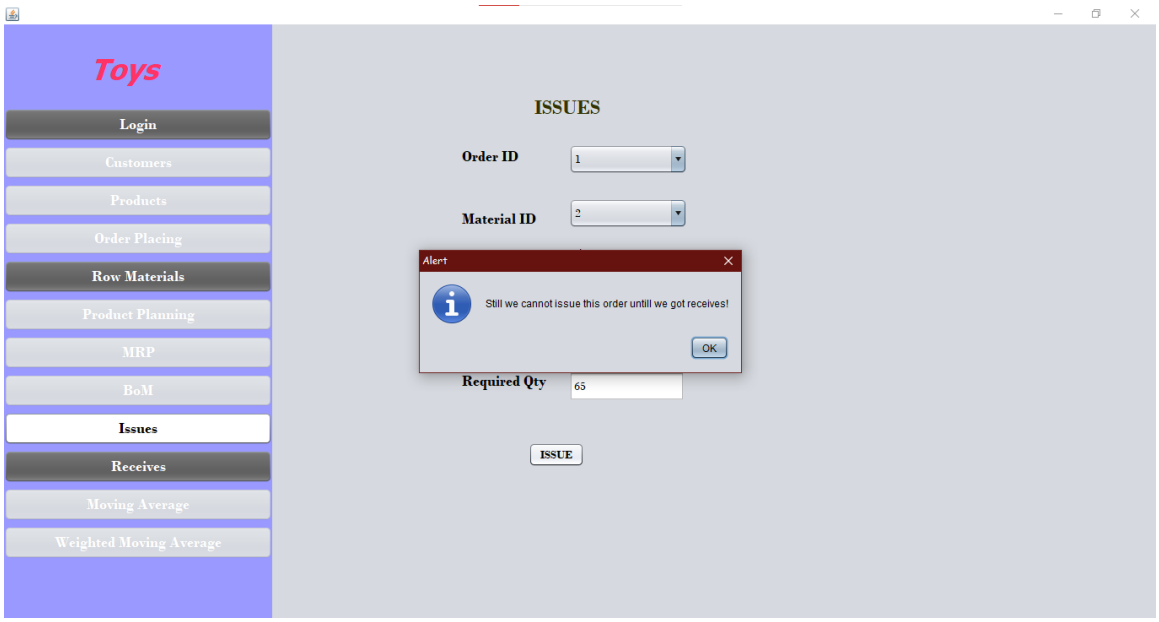


Figure 10: Issues Interface2

If there're not enough available quantity to issue that material the above popped-up message will be displayed.

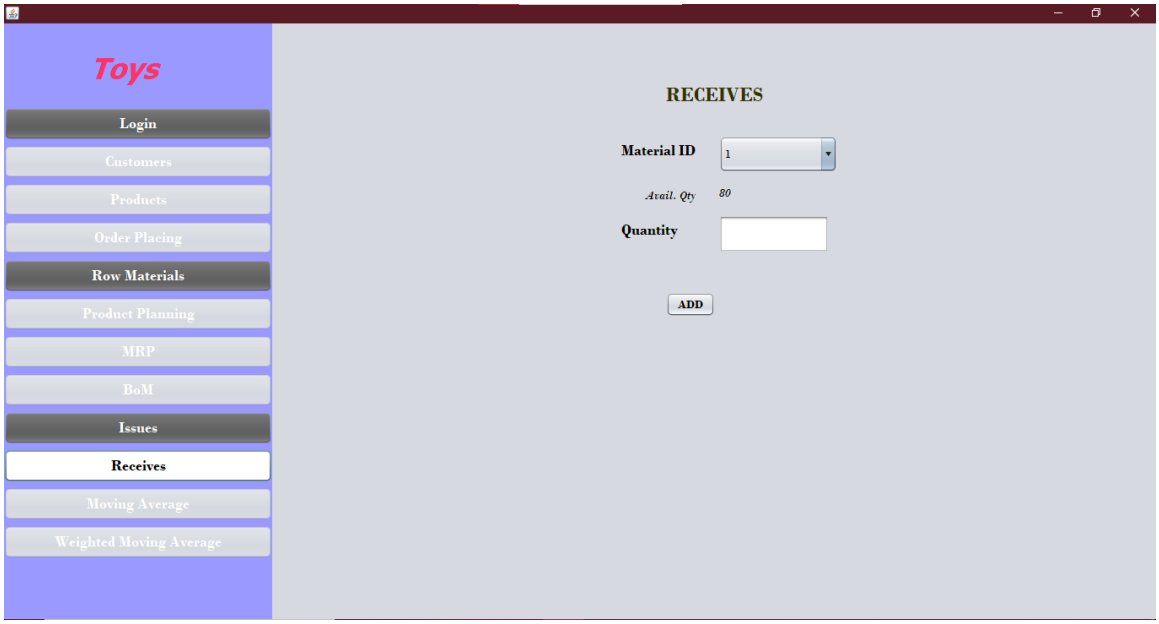


Figure 11: Receives Interface

Initially material ids from database 'material' table, will be loaded into 'Material ID' combo box.

Then you can add the newly received material quantity and then hit 'ADD' button.

Then the database 'material' table 'available_quantity' will be updated.

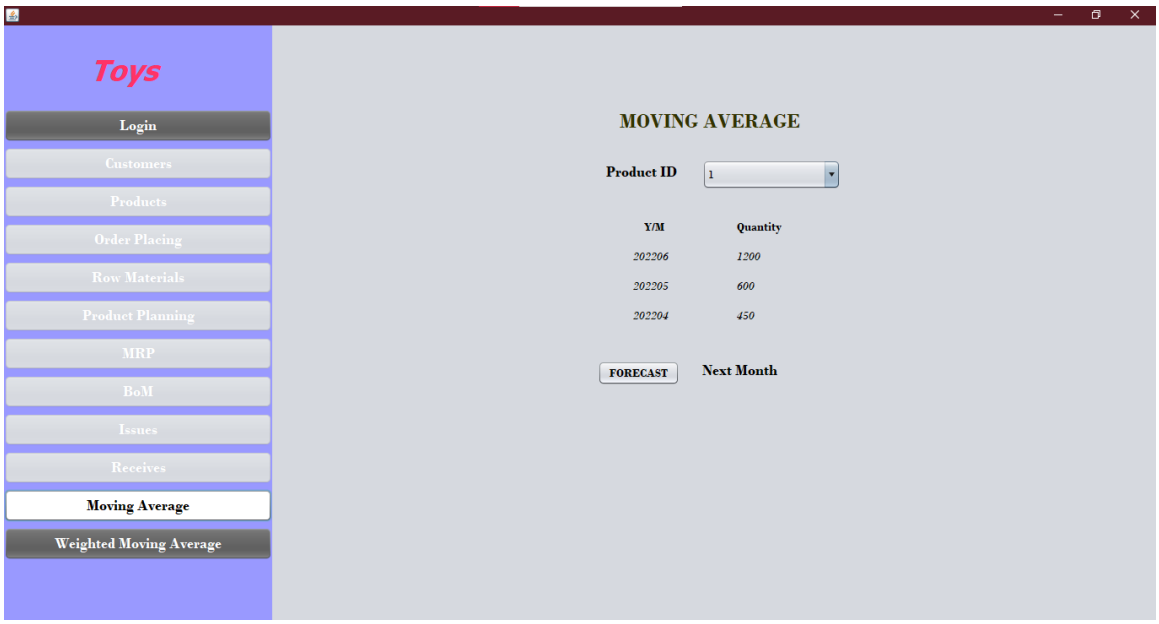


Figure 12: Moving Average Interface

In this interface, once the user entered whatever the product id, the sold. entire product quantities of last three months will be loaded into labels displayed in the interface.

Then, once click on 'FORECAST' button, the predicated product quantity for the next month will be calculated and displayed.

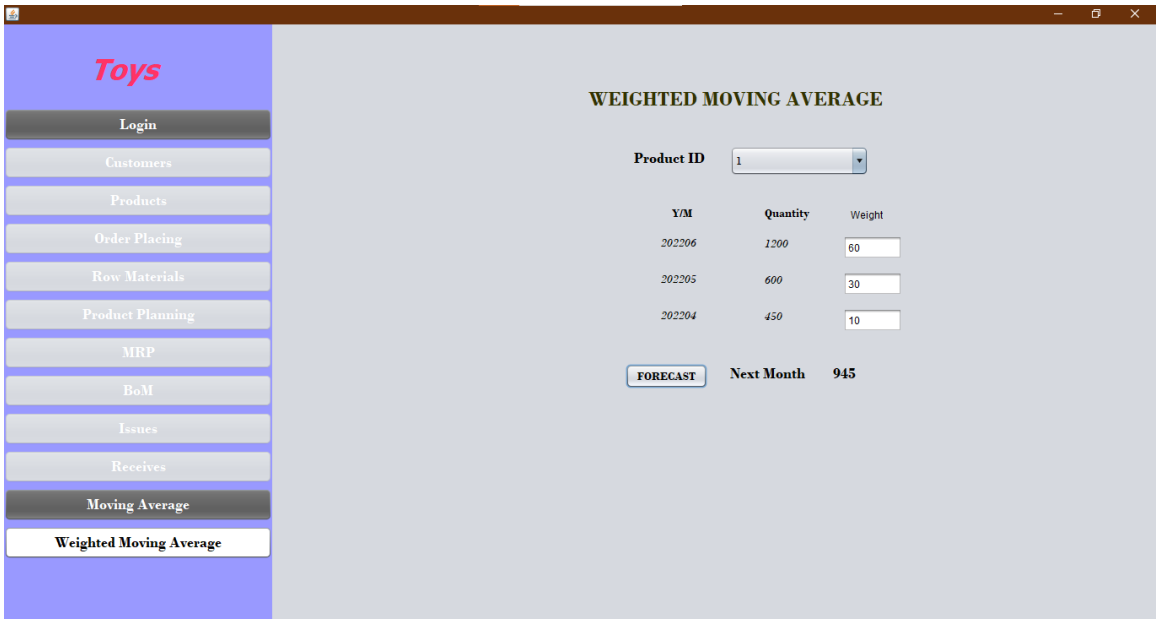


Figure 13: Weighted Moving Average Interface

The only difference of this interface with the 'Moving Average Interface' is displaying a weight of each product quantity.

Forecasting will happen based on those weights.

THANK YOU!