Stock Management System

Use Case Specification Document

Revision History

Date	Author(s)	Changes	Version
03/05/2021	Esra Ateş	Use case diagram is changed. UC2.2 and UC2.3 are added.	v1.0
10/05/2021	Esra Ateş	Review Corrections are done	v1.1
31/05/2021	Esra Ateş	All use cases are given as fully-dressed format. Brief use cases are changed.	V2.0

1. USE CASE DIAGRAM
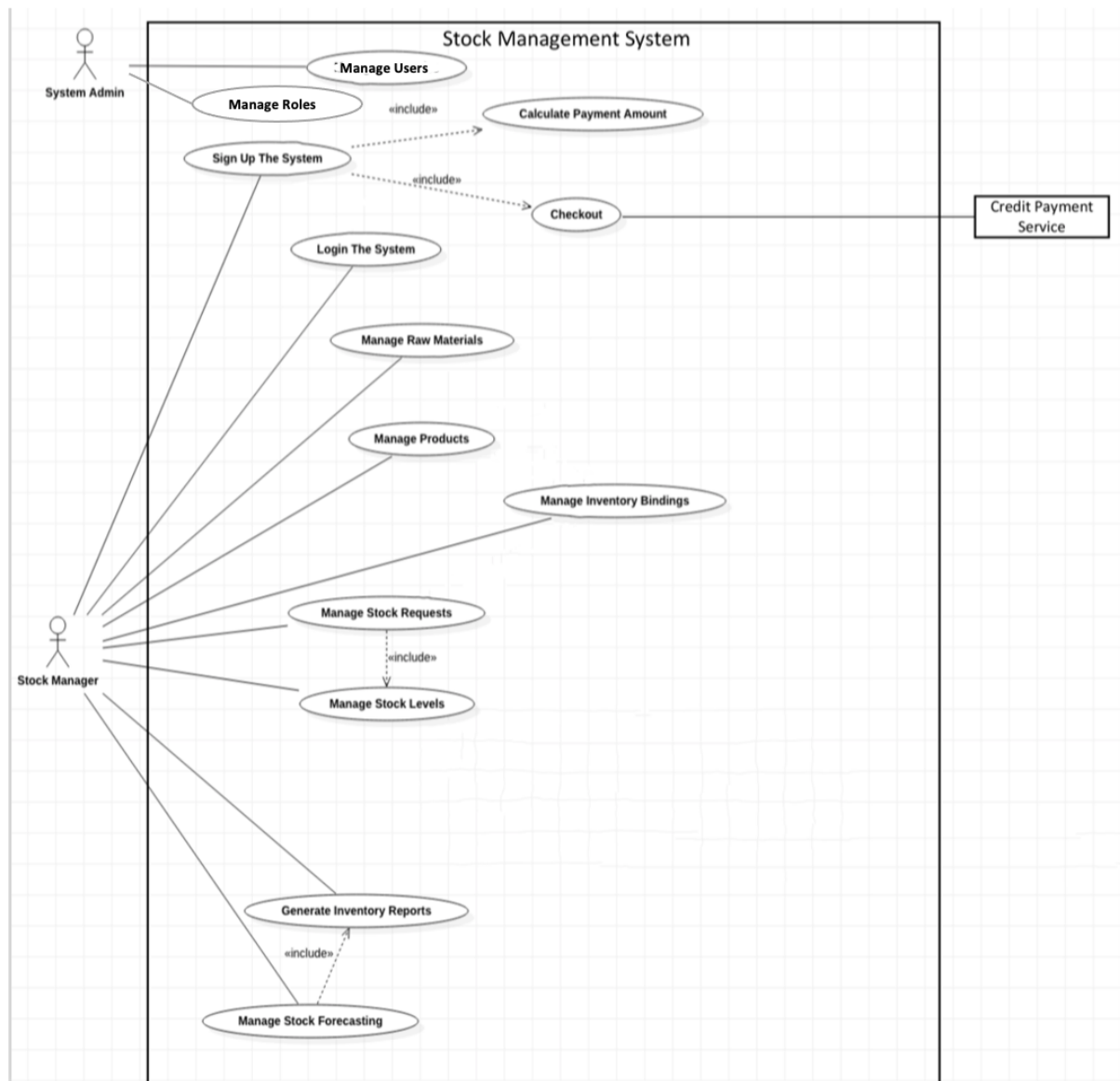
2. BRIEF USE CASES

2.1 **User Management**

Use Case 1.1 – Sign Up the System: The user opens the web-site and requests to sign up the system by defining the name, email, company name, license number and validity period. The system calculates and displays the payment amount. The user enters the credit card information and requests to pay. Credit payment service accepts or rejects the payment. If the payment is accepted, the system displays a success message and the sign up process is completed. Otherwise, the system displays an error message and requests the user to check the payment information.

Use Case 1.2 – Login to the System: The user opens the web-site and enters his user information and requests to login. If the user information is incorrect, the system gives an error message and prompts the user to re-enter the information. Otherwise, the user information is correct, the user logs into the system. If the user is logging into the system for the first time, the system requests the user to change the password defined by the system admin.

Use Case 1.3 – Manage Roles: The system admin wants to manage the roles to assign the users. The admin requests to define a new role and privileges. The admin can delete or update the user roles, as well.

Use Case 1.4– Manage Users: The system admin wants to manage the uses. The admin requests to define a new user. If the user already exists, the admin can select the user and edit user data and assign the user role to the user. The admin can delete the user as well.

2.2 **Material Management**

Use Case 2.1 – Manage Raw Material: The stock manager wants to manage the raw materials. The system displays the raw material list. The stock manager requests to add a new raw material by defining part number, part name, part category, overstock level, safety stock level and lead time. The stock manager requested to save the raw material. The system stores the material. The stock manager can delete or update the raw material. If the stock manager requests to delete the raw material, confirmation of the deletion is asked by the system.

Use Case 2.2 – Manage Product: The stock manager wants to manage the products. The system displays the product list. The stock manager requests to add a new product by defining product number, product name. The stock manager requested to save the product. The system stores the product. The stock manager can delete or update the product. If the stock manager requests to delete the product, confirmation of the deletion is asked by the system.

Use Case 2.3 – Manage Inventory Bindings: The stock manager wants to manage the products. The system displays the product list. The stock manager requests to update a product. The system displays the product with initialized attributes. The stock manager requests a new product breakdown by binding product and raw materials with quantities. The stock manager requests to add the product breakdown and requests to update the product. The system stores the product with inventory binding. The stock manager can remove or update the inventory binding. If the stock manager requests to remove the inventory binding, confirmation of the deletion is asked by the system.

3.2 Inventory Management

Use Case 3.1 – Manage Stock Requests: The stock manager wants to manage stock requests to check if there is enough material in stock for production. The system displays the stock request management screen. The stock manager requests to check whether there is enough material for production or not by defining the product and production quantity. The system compares the material required for production with the current number of materials in stock, using the

inventory binding information recorded for the product and displays the numbers and the comparison based on the calculation. If the stock levels are enough for the production, the stock manager can authorize the production. The system updates the stock levels *(Refer to Use Case 3.2 - Manage Stock Levels)*

Use Case 3.2 – Manage Stock Levels: The stock manager wants to manage the stock levels. The system displays the inventory list. The stock manager requests to add a new inventory by defining raw material and the additional quantity. The stock manager requests to save the inventory. The system stores the inventory and updates the current number in stock. The stock manager can delete or update the inventory to update the stock levels, manually. In addition, if there is an authorized production, based on the stock request, the system automatically reduces the stock levels of the inventory items that are mapped with the product.

Use Case 3.3 Generate Inventory Reports: The stock manager wants to manage the reports. The system displays the report generation screen. The stock manager requests to generate a report by defining a time interval. The system displays the stock level movements on the specified time interval.

Use Case 3.4 Manage Stock Forecasting: The stock manager wants to manage the stock forecasting. The system displays the stock forecastings. The stock manager requests to add a new stock forecasting by defining estimated or upcoming production demand. The stock manager requests to save the stock forecasting. The system stores the forecasting and displays the required stock numbers of the raw materials based on the forecasting.

3.   FULLY-DRESSED USE CASES

Details of the items are given in the Glossary and Class Diagrams.

UC1.1: Sign Up The System
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
    User: Wants to sign up the system.

Pre-conditions: None.
Post-conditions: New user can sign up the system.

Main Success Scenario:
1.   User opens the web-site.
2.   The SMS displays the login page.
3.   User wants to sign up the system.
4.   The SMS displays the sign up form.
5.   User enters the user information including the company of the user.
6.   The SMS calculates and displays the payment amount.
7.   The user enters the credit card information and requests to pay.
8.   Credit payment service accepts the payment.
9.   The system displays a success message and the sign up process is completed. Log in page is displayed.

Extensions:

      7a. User do not want to make the payment.
          1. User leaves the page.

      8a. Credit payment rejects the payment.
          1. The SMS displays an error message.
          2. Use case continues at the seventh step of the main success scenario.

Frequency of Occurrence: Everytime when there is a new user.
Open Issues:
- What customization is needed for different businesses?

UC1.2: Login The System
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
    Stock Manager: Wants to log in the system.
    Admin: Changes the password if necessary.

Pre-conditions: Stock manager signs up the system and completes the payment step.
Post-conditions: Stock manager can log in the system.

Main Success Scenario:
    1. Stock manager opens the web-site.
    2. The SMS displays the login page.
    3. Stock manager enters the username and password.
    4. The SMS controls the entered username and password.
    5. The SMS displays the homepage.
Extensions:
    3a. Stock manager forgets the password.
        1. Admin changes the password.
        2. Stock manager enters the username and password.

    4a. Stock manager enters the wrong password.
        1. The SMS displays the warning message.
        2. Use case continues at the third step of the main success scenario.

    4b. Stock manager is logging into the system for the first time.
        1. The SMS displays the attributes
        2. Stock manager enters the current and new password and repetition.
        3. The SMS controls the entered passwords.
          3a. Stock manager enters unmatching passwords.
             1. The SMS displays the warning message.
             2. Use case continues at step 4b-2.
          3b. The stock manager enters the same password with the current password.
             1. The SMS displays the warning message.
             2. Use case continues at step 4a-2.
        4. The SMS displays the login page.
        5. Use case continues at the third step of the main success scenario.

Frequency of Occurrence: Every entrance.
Open Issues:
- What customization is needed for different businesses?

UC1.3: Manage Roles
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Admin
Stakeholders and interests:
> Admin: Wants to manage roles.

Pre-conditions: Admin is authenticated with privileges to manage user.
Post-conditions: One or more products are displayed/created/updated/deleted.

Main Success Scenario:
1. Admin wants to manage roles.
2. System displays the user roles.
3. Admin selects a role.
4. System displays the details of the selected role.
   Step 3 and 4 are repeated until the admin indicates it is done.

Extensions:
3a. Admin creates a new role.
1. Admin wants to create a new role.
2. The SMS displays privileges of the user.
3. Admin requests to save the new role.
   4a. Existing role.
   1. The SMS displays the warning message.
   2. Use case continues at the third step.
4. The SMS stores the new role.

3b. Admin wants to delete role.
1. Admin selects a role and requests to delete it.
2. The SMS displays the confirmation message.
3. Admin confirms the deletion of the role.
   3a. Admin declines the deletion of the role.
   1. The SMS keeps the role.
4. The SMS deletes the role.

3c. Admin wants to update a role.
1. Admin selects a role and requests to update it.
2. The SMS displays the details of the role.
3. Admin enters the new privileges of the role.
   3a. Existing role.
   1. The SMS displays the warning message.
   2. Use case continues at step 3c-3.
4. Admin wants to update the role.
   4a. Admin wants to cancel the role update.
   1. The SMS closes the update form and displays the role list.
5. The SMS stores the role with new values.

Frequency of Occurrence: Whenever there is a new role.
Open Issues:
- What customization is needed for different businesses?

UC1.4: Manage Users
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Admin
Stakeholders and interests:
> Admin: Manage user roles.

Pre-conditions: Admin is authenticated with privileges to manage user.
Post-conditions: New users can be created/displayed/updated/deleted.

Main Success Scenario:
1. Admin wants to manage users and user roles.
    2. System displays the users.
    3. Admin selects a user.
    4. System displays the details of the selected user.
    5. Admin closes the user details.
        Step 3 and 4 are repeated until the admin indicates it is done.
Extensions:
   3a. Admin creates a new user profile.
   1. Admin wants to create a new user profile.
   2. The SMS displays the attributes of the new user.
   3. Admin initializes the attributes of the new user.
   4. Admin requests to save the new user.
       4a. Existing username.
           1. The SMS displays the warning message.
           2. Use case continues at the third step.
   5. The SMS stores the new user.

   3b. Admin wants to delete user.
   1. Admin selects a user and requests to delete it.
   2. The SMS displays the confirmation message.
   3. Admin confirms the deletion of the user.
       3a. Admin declines the deletion of the user.
           1. The SMS keeps the user.
   4. The SMS deletes the user.

   3c. Admin wants to update a user.
   1. Admin selects a user and requests to update it.
   2. The SMS displays the attributes of the user with their initial values.
   3. Admin enters the new values of the attributes.
       3a. Existing username.
           1. The SMS displays the warning message.
           2. Use case continues at step 3c-3.
   4. Admin wants to update the user.
       4a. Admin wants to cancel the user update.

1. The SMS closes the update form and displays the user list.
5. The SMS stores the user with new values.

5a. Admin wants to assign the role to the user.
1. Admin request to assign the role.
2. The SMS displays the user roles.
3. Admin selects a role and request to update the user.
   3a. Admin wants to cancel the user update.
   1. The SMS closes the user form and displays the user list.
4. The SMS stores the user with new role.

5b. Admin wants to remove the role to the user.
1. Admin request to remove the role and request to update the user.
   1a. Admin wants to cancel the user update (close the user form).
   1. The SMS closes the user form and displays the user list.
2. The SMS updates the user details.

Frequency of Occurrence: When new user signs up.
Open Issues:
- Is confirmation of removal of user role needed?
- What customization is needed for different businesses?

UC2.1: Manage Raw Material
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
        Stock Manager: Wants to manage raw materials

Pre-conditions: The stock manager is authenticated with privileges to manage raw material.
Post-conditions: One or more raw materials are displayed/created/updated/deleted.

Main Success Scenario:
1. Stock manager wants to manage raw material.
2. System displays the raw material list.
3. Stock manager selects a raw material.
4. System displays the details of the selected raw material.
   Step 3 and 4 are repeated until the stock manager indicates it is done.
Extensions:
3a. The stock manager wants to delete raw material.
1. The stock manager selects a raw material and requests to delete it.
2. The SMS displays the confirmation message.
3. The stock manager confirms the deletion of the raw material.
   3a. The stock manager declines the deletion of the raw material.
   1. The SMS keeps the raw material.
4. The SMS deletes the raw material.

3b. The stock manager wants to update a raw material.
1. The stock manager selects a raw material and requests to update it.
2. The SMS displays the attributes of the raw material with their initial values.

3. The stock manager enters the new values of the attributes.
   3a. Existing identifier.
       1. The SMS displays the warning message.
       2. Use case continues at step 3b-3.
4. The stock wants to update the raw material.
   4a. The stock manager wants to cancel the raw material update.
       1. The SMS closes the update form and displays the raw material list.
5. The SMS stores the raw material with new values.

3c. The stock manager wants to create a raw material.
    1. Stock manager wants to create a new raw material.
    2. The SMS displays the attributes of the raw material.
    3. Stock manager initializes the attributes of the new raw material.
    4. Stock manager requests to save the new raw material.
       4a. Existing identifier.
           1. The SMS displays the warning message.
           2. Use case continues at the third step.
    5. The SMS stores the new raw material.

Frequency of Occurrence: Every quarter of the year.
Open Issues:
- Is confirmation of cancellation of raw material update/creation needed?
- What customization is needed for different businesses?

UC2.2: Manage Products
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
    Stock Manager: Wants to manage products

Pre-conditions: The stock manager is authenticated with privileges to manage products.
Post-conditions: One or more products are displayed/created/updated/deleted.

Main Success Scenario:
    1. Stock manager wants to manage products..
    2. System displays the product list.
    3. Stock manager selects a product.
    4. System displays the details of the selected product.
       Step 3 and 4 are repeated until the stock manager indicates it is done.
Extensions:
    3a. The stock manager wants to create a product.
        1. Stock manager wants to create a new product.
        2. The SMS displays the attributes of the product.
        3. Stock manager initializes the attributes of the new product.
        4. Stock manager requests to save the new product.
           4a. Existing identifier.
               1. The SMS displays the warning message.
               2. Use case continues at the third step of 3a.

4b. The stock manager wants to cancel the product creation.
1. The SMS closes the creation form and displays the product list.
5. The SMS stores the new product.

3b. The stock manager wants to delete a product.
1. The stock manager selects a product and requests to delete it.
2. The SMS displays the confirmation message.
3. The stock manager confirms the deletion of the product.
   3a. The stock manager declines the deletion of the product.
      1. The SMS keeps the product.
      2. Use case continues at the third step of the main scenario.
4. The SMS deletes the product.

3c. The stock manager wants to update a product.
1. The stock manager selects a product and requests to update it.
2. The SMS displays the attributes of the product with their initialized values.
3. The stock manager enters the new values of the attributes.
4. The stock manager wants to update the product.
   4a. The stock manager wants to cancel the product update.
      1. The SMS closes the update form and displays the product list.
   4b. Existing identifier
      1. The SMS displays the warning message.
      2. Use case continues at the third step of 3c.
5. The SMS stores the product with new values.

Frequency of Occurrence: Whenever there is an update on products.
Open Issues:
- Is confirmation of cancellation of product update/creation needed?
- What customization is needed for different businesses?

UC2.3: Manage Inventory Bindings
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
     Stock Manager: Wants to manage inventory bindings.

Pre-conditions: The stock manager is authenticated with privileges to manage products.
Post-conditions: One or more inventory bindings are displayed/added/updated/removed.

Main Success Scenario:
1. Stock manager wants to display the Bill of Material(BOM) of the product.
2. System displays the details of the BOM (inventory bindings) of the product.
   Steps are repeated until the stock manager indicates it is done.
Extensions:
1a. The stock manager wants to add an inventory binding.
   1. Stock manager wants to add a new inventory binding.
   2. The SMS displays the attributes of the inventory binding.
   3. Stock manager initializes the attributes of the new inventory binding.
   4. Stock manager requests to save the new inventory binding.

> 4a. Same inventory item is bonded.
>> 1. The SMS displays the warning message.
>> 2. Use case continues at the third step of 5a.
> 5. The SMS stores the new inventory binding as a sub-material of the product (as a part of the BOM).

1b. The stock manager wants to remove an inventory binding.
1. The stock manager selects an inventory binding and requests to remove it.
2. The SMS displays the confirmation message.
3. The stock manager confirms the removal of the inventory binding.
   3a. The stock manager declines the removal of the inventory binding.
       1. The SMS keeps the inventory binding.
4. The SMS removes the inventory binding.

1c. The stock manager wants to update an inventory binding.
1. The stock manager selects an inventory binding and requests to update it.
2. The SMS displays the attributes of the inventory binding with their initialized values.
3. The stock manager enters the new values of the attributes.
4. The stock manager wants to update the inventory binding.
   4a. Same inventory item is bonded.
       1. The SMS displays the warning message.
       2. Use case continues at the third step of 5c.
   4b. The stock manager wants to cancel the inventory binding update.
       1. The SMS closes the update form and displays the product details.
5. The SMS stores the inventory binding with new values.

Frequency of Occurrence: Whenever there is an update on inventory bindings.
Open Issues:
- What customization is needed for different businesses?

UC3.1: Manage Stock Requests
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
      Stock Manager: Wants to manage stock requests.

Pre-conditions: The stock manager is authenticated with privileges to manage stock requests.
Post-conditions: Stock levels are checked and production authorization can be given. Stock levels are updated automatically by the system.

Main Success Scenario:
1. Stock manager wants to manage stock requests.
2. The SMS displays the stock request management screen.
3. Stock manager defines the product and production quantity.
4. The system compares the material required for production with the current number of materials in stock, using the inventory binding information recorded for the product
5. The SMS displays the numbers and the comparison based on the calculation.

6. Stock manager authorizes the production.
7. The SMS reduces the stock levels. If the stock level of an item is less than the safety stock level of it, then the system receive an alert.

Extensions:
5a. Product or/and inventory binding information are not defined in the system.
1. The SMS displays the error message about the undefined product.
2. Use case continues at the third step of the main success scenario.

6a. There is not enough material in stock.
1. Stock manager leaves the page.

Frequency of Occurrence: Whenever there is a production need.
Open Issues:
- What customization is needed for different businesses?

UC3.2: Manage Stock Levels
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
Stock Manager: Wants to manage stock levels, manually.

Pre-conditions: The stock manager is authenticated with privileges to manage stock levels.
Post-conditions: One or more materials in stock are displayed/updated.

Main Success Scenario:
1. Stock manager wants to manage stock levels.
2. System displays the stock material list.
3. Stock manager selects a material in stock.
4. System displays the details of the selected material.
Step 3 and 4 are repeated until the stock manager indicates it is done.
Extensions:
3b. The stock manager wants to update a material stock.
1. The stock manager selects a stock material and requests to update it.
2. The SMS displays the attributes of the material with their initial values.
3. The stock manager enters the new stock level of the material.
4. The stock wants to update the material.
4a. The stock manager wants to cancel the material update.
1. The SMS closes the update form and displays the material list.
5. The SMS updates the material stock. If the stock level is outside the specified stock level (under the safety stock or above the over stock), the SMS receive an alert.

3c. The stock manager wants to add a material to the stock.
1. Stock manager wants to add a material to the stock.
2. The SMS displays the attributes of the stock material.
3. Stock manager initializes the attributes of the new material.
4. Stock manager requests to save the new material.

5. The SMS adds the given quantity to the current stock level of the material. If the stock level is outside the specified stock (above the over stock), the SMS receive an alert.

Frequency of Occurrence: Every stock change.
Open Issues:
- What customization is needed for different businesses?

UC3.3: Generate Inventory Reports
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
        Stock Manager: Wants to generate inventory reports.

Pre-conditions: The stock manager is authenticated with privileges to generate reports.
Post-conditions: Inventory report for the specified period can be created.

Main Success Scenario:
1. Stock manager wants to manage reports.
2. System displays the report generation page.
3. Stock manager defines the time interval and request to generate report.
4. The system displays the stock level movements on the specified time interval.
        Step 3 and 4 are repeated until the stock manager indicates it is done.

Frequency of Occurrence: Whenever it is needed.
Open Issues:
- What customization is needed for different businesses?

UC3.4: Manage Stock Forecasting
Scope: Stock Management System (SMS)
Level: User Goal
Primary Actor: Stock Manager
Stakeholders and interests:
        Stock Manager: Wants to manage stock forecasting.

Pre-conditions: The stock manager is authenticated with privileges to manage stock forecasting
Post-conditions: Forecasting can be created/listed.

Main Success Scenario:
1. Stock manager wants to manage the stock forecasting.
2. System displays the forecastings.
3. Stock manager selects a forecasting.
4. System displays the details of the forecasting.
        Step 3 and 4 are repeated until the stock manager indicates it is done.
Extensions:
        3a. The stock manager wants to create a new forecasting report.
                1. Stock manager wants to create a new forecasting.
                2. The SMS displays the attributes of the forecasting

3. Stock manager defines estimated or upcoming production demand and request to create the forecasting report.
4. The system stores the forecasting and displays the required stock numbers of the raw materials based on the forecasting.

Frequency of Occurrence: Whenever it is needed.
Open Issues:
- What customization is needed for different businesses?