

Software Quality Engineering Project

Scenario: Inventory Tagging and Shipping Mechanism

We are a big Pharmaceutical company which makes medicines on assembly line. We want a very fast system which will be deployed at different entry points of different warehouses for recording the input of the quantity of the finished goods. We want the system to track the delivery of goods from particular entry point. At the time of delivery of goods, the user should call an open service to get the date+time+temperature of location and create a unique tag to mark the delivery/order. The system should not allow the creation of tag if the service is not available. But, at the same time we would not want the users to get blocked. So we would need a mechanism to let users continue with other orders and the pending orders will get tagged once the service is available. The system might be used at multiple entry points within a warehouse, so the system must be restrictive enough to not allow users to book orders with same goods. Good performance of the system will be a much desired feature.

Use Case 1

System will be deployed at different entry points of different warehouses for recording the input of the quantity of the finished goods

Authenticated user (Warehouse Attendant) should be able to enter the details of Goods which are entering the warehouse

Functionality Flow

Login Page

- Start at Login Page
- Enter User Name and Password
 - o User Name –
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (10 chars)
 - Case Insensitive
 - Mandatory Field
 - o Password –
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (10 chars)
 - Case Insensitive
 - Entry in Field should be shown as ‘*’
 - Mandatory Field
- Authenticate User
 - o Match User Name and Password with DB values
 - o Authenticate Rights = ‘Warehouse Attendant, or ‘Manager’ or ‘Administrator’
- If User Name or Password is Incorrect, Provide relevant Error Message to User
- If User Name and Password are correct but Rights are not present, show Message to user and Redirect to Home Page

- If User is authenticated (User Name, Password and Rights) , redirect to ‘Warehouse Management’ page

Warehouse Management Page

- Select ‘Add Items’ from menu option (which will open Add Item form).
- Fill in the following details in the Add Item form
 - Item ID:
 - 255 char text field which needs to be filled by User
 - Must be Unique
 - DB-type: Alphanumeric (10 chars)
 - Mandatory Field
 - Item Description:
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (255 chars)
 - Mandatory Field
 - Item Type:
 - User Selects Field value from Dropdown – i.e. Medicine, Raw Material, Others)
 - Mandatory Field
 - Entry Date :
 - 255 char text field which needs to be filled by User
 - DB-type: Date
 - Mandatory Field
 - Expiry Date:
 - 255 char text field which needs to be filled by User
 - DB-type: Date
 - Must be greater than ‘Entry Date’
 - Price:
 - 255 char text field which needs to be filled by User
 - DB-type: Integer
 - Quantity:
 - 255 char text field which needs to be filled by User
 - DB-type: Integer
 - Mandatory Field
- If Save is clicked
 - If all values are correct, Enter values in DB and notify user about success
 - Close Add Item Form and Redirect user Warehouse Management page
 - If values are incorrect, provide Error message(s) below the field(s) with incorrect value(s)
- If Cancel is clicked
 - Close Add Item Form and Redirect user Warehouse Management page

Reference Screenshots

 Inventory Tagging and Shipping

Inventory Tagging and Shipping

Welcome

Login

User Name :

Password :

Login

[Forgotten your Password?](#)

Inventory Tagging and Shipping

You are at : [Warehouse Management](#)

Welcome : User 1 (Logged in as Warehouse Attendant)

Menu Options
[Create Orders](#)
[Add Items](#)

Add Items

General Details

Item ID :

Item Description :

Quantity :

Item Type :

:

Entry Date :

Expiry Date :

Price

Save

Cancel

Use Case 2

At the time of delivery of goods, the user should call an open service to get the date+time+temperature of location and create a unique tag to mark the delivery/order. The system will be used at multiple entry points within a warehouse, so the system not allow users to book orders with same goods

Functionality Flow

Login Page

- Start at Login Page
- Enter User Name and Password
 - o User Name –
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (10 chars)
 - Case Insensitive
 - Mandatory Field
 - o Password –
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (10 chars)
 - Case Insensitive
 - Entry in Field should be shown as ‘*’
 - Mandatory Field
- Authenticate User
 - o Match User Name and Password with DB values
 - o Authenticate Rights = ‘Warehouse Manager’ or ‘Administrator’
- If User Name or Password is Incorrect, Provide relevant Error Message to User
- If User Name and Password are correct but Rights are not present, show Message to user and Redirect to Home Page
- If User is authenticated (User Name, Password and Rights) , redirect to ‘Warehouse Management’ page
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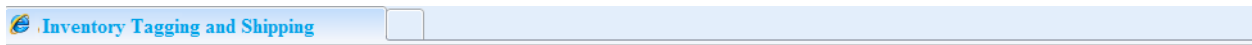
Warehouse Management Page

- Select ‘Add Orders’ from menu option (which will open Create Order form).
- When Create Order is selected, at backend, the application calls 2 Open Web-services:
 - o First WS to obtain current Date+Time (i.e. DD-HH)
 - o Second WS to obtain Temperature (i.e. TT)
- Creation of a Unique Tag
 - o At backend, another custom (self-created) WS is invoked which performs following actions:
 - Concatenate “Date-Time-Temperature”
 - Create a 6-digit random number “NNNNNN” using Randomize function
 - Concatenate both items i.e. “DD-HH-TT-NNNNNN”
 - Save this in DB table “Order Record” under Column “Next Tag”

- If any of the above step Fails, show message to User: “Cannot create an Order since Tag is Not Available”
- If the above 2 steps are successful, Open “Create Order” form
- Fill in the following details in the Create Order form
 - Order Tag:
 - Fetch value from DB table “Order Record” under Column “Next Tag”
 - Field must be disabled and Non-editable
 - Order Description:
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (255 chars)
 - Mandatory Field
 - Customer ID:
 - 255 char text field which needs to be filled by User
 - DB-type: Alphanumeric (255 chars)
 - Mandatory Field
 - Case Insensitive
 - ID Must exist in DB (under DB Table “Customer” column : “ID”)
 - Item IDs (3 Items):
 - 255 char text field which needs to be filled by User
 - Must be Unique
 - DB-type: Alphanumeric (10 chars)
 - Mandatory Field
 - Quantity (against each Item ID):
 - 255 char text field which needs to be filled by User
 - DB-type: Integer
 - Mandatory Field
 - Order Date :
 - 255 char text field which needs to be filled by User
 - DB-type: Date
 - Mandatory Field
 - Dispatch Date:
 - 255 char text field which needs to be filled by User
 - DB-type: Date
 - Must be greater than ‘Entry Date’
 - Price:
 - 255 char text field which needs to be filled by User
 - DB-type: Integer
- If Save is clicked
 - Check that Quantity for each Item ID listed is present in Warehouse (fetch and compare value from Column “Total Quantity” against Item ID from DB table “Items”)
 - Check that sum of Quantities of parallel Orders with same Item IDs listed are not exceeding the Total Quantity present in Warehouse
 - Fetch all Orders currently Open, and narrow on Orders with same Item IDs as in this current Order

- Sum all Quantities and compare with value from Column “Total Quantity” against each Item ID from DB table “Items”
- If any of the above step Fails, provide message to User : “Cannot Create Order. Order exceeds Quantity available in Warehouse”
- If all values are correct, Enter values in DB and notify user about success
 - Close Create Order Form and Redirect user Warehouse Management page
- If values are incorrect, provide Error message(s) below the field(s) with incorrect value(s)
- If Cancel is clicked
 - Close Create Order Form and Redirect user Warehouse Management page

Reference Screenshots



Inventory Tagging and Shipping

Welcome

Login

User Name :

Password :

Login

[Forgotten your Password?](#)

Inventory Tagging and Shipping

You are at :

Welcome : User 1 (Logged in as Manager)

Menu Options

[Create Orders](#)

[Add Items](#)

Add Order

General Details

Order Tag :

Order Description :

Order Date

Customer ID

Dispatch Date:

Price :

Order Details

Item IDs

Quantity:

1:	<input type="text"/>	<input type="text"/>
2:	<input type="text"/>	<input type="text"/>
3:	<input type="text"/>	<input type="text"/>

Final Project Details

Part A

1. Peer Review the Scenario and raise QA concerns (points which needs clarification from QA's perspective)

Part B

2. Design Test Cases for the above Use Cases (Functionality Flows)
 - a. Positive Functional Test Cases
 - b. Negative Functional Test Cases
 - c. Atleast 2 Security Test Cases

Part C

3. You have received the first build of the application. Following is the result of actual application behavior when you performed the following actions:
 - a. Logged in using valid User credentials (of Warehouse Manager)
 - b. On "Warehouse Management" page, clicked on "Add Item"
 - c. On Add Item form, click SAVE without entering any value
 - d. Same steps are done on "Create Orders"

Perform UI testing on these pages and Report as many defects as possible
(Use given Defect Template)

Part D

4. Provide 3 suggestions regarding "Usability" aspect for each page (i.e. suggest 3 things in each page that should be implemented for good User Experience)

Inventory Tagging and Shipping

You are at : [Warehouse Management](#)

Welcome : User 1 (Logged in as Warehouse Attendant)

Menu Options
[Create Orders](#)
[Add Items](#)

Add Items

General Details

Item ID : Cannot be Empty

Item Description : *

Quantity : *

Item Type : *

Entry Date : *

Expiry Date : *

Price *

Please enter Price

Error: Enter all mandatory fields

Save

Inventory Tagging and Shipping

You are at :

Welcome : User 1 (Logged in as Manager)

Menu Options	Add Order
Create Orders	
Add Items	

General Details

Order Tag : 11-16-32-11211

Order Description : *

* Customer ID

* Price :

Ordre Date *

Dispatch Date: *

Error : Enter values for mandatory fields

Order Details

Item IDs *

1:

2:

3:

Quantity: *

Cannot be Empty

Error : Enter values for mandatory fields

Save

Cancel

Instructions

- This is individual project not a group project.
- While creating document for this project, make it professionally with proper and attractive title page, table of contents, problem that has been given and then your solution.