Scrum Team- 3
(Cost Estimation System)

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Introduction:

For any product based business, packaging forms an important part of the manufacturing process. Packaging is an integral part of the product because it protects it, makes it easy to transport, and can be used to promote it. These packaging boxes, also called cartons, are made from different types of cardboards according to requirements. Each carton has a unit cost based on the type of cardboard used, dimensions, product category etc.

In this project, we present **Kostify**, a system which accepts the requirements of carton buyers as parameters, and display the unit cost of each carton for those requirements. Apart from this core functionality, the project also focuses on some other features, covered in below use cases. The techstack used for building the system comprises of HTML, CSS, Angular JS, Node.js, C#, ADO.NET, ASP.NET and MVC.

The use cases are:

- ➤ Sign up/Sign In
- ➤ Profile
- ➤ Unit Cost Estimator
- ➤ Carton Sample Generator
- ➤ Invoice Generator
- ➤ My Orders
- ➤ Average cost analysis
- ➤ My Quotations

Document of use cases

Use case: Sign Up/Sign In page

Brief Description	Sign up/Sign In

Basic Flow	The first screen gives user the chance to sign up or sign in.
	
	➢ If signing up, user will enter 5 details, name, email, phone no, username and password, and will be registered as a **buyer/seller.**
	➢ If signing in, user has to enter 3 things:
	    • Username
	    • Password
	    • Role
	➢ If role is buyer, user has to enter username and password which will be checked across in buyers table of accounts database, storing login info of all buyers.
	➢ If role is seller, username and password will be checked across similarly in sellers table of accounts database.

Alternate Flow	➢ While signing in, if the system cannot find the username or password, then a 'credentials not found' message is displayed. ➢ While signing up, if the user enters an already existing username or password, then a 'credentials already existing' screen appears, ending the use case.
Validation	➢ The user name can be alphanumeric. ➢ The password should be of length 6-20, containing 1 uppercase, 1 lowercase, 1 special character, 1 number at least. ➢ The name should be in letters. ➢ The email should contain '@', '.' and a valid domain name. ➢ The phone number should be a valid 10 digit no. ➢ The username and password should be existing in the database
Pre-Conditions	User should have network access, and must all criteria of validation during signup, for the success of this usecase.
Post-Conditions	'Signed up successfully' screen or Profile of the user will be shown (Buyer/Seller)

Use case: **Profile**

Brief Description	Profile (Dashboard)
Basic Flow	Profile will appear once the user logged in through his login credentials, either as buyer or seller. It will display the following: ➢ Name, Email, Phone number ➢ My Orders (if buyer) – navigates to screen which displays orders sent along with status, i.e. Approved, Rejected or Pending ➢ My Quotations (if seller) – navigates to screen which displays all quotations received along with options to approve or reject quotation ➢ Change username/password, which updates the login credentials in the database
Alternate Flow	If the user is unable to see his details on the profile screen due to outdated database or modifications in database (entry deleted), then a screen comes requesting user to check back later.
Validation	There will be no validation in this use case as it is just a display screen.
Pre-Conditions	User should have network access and must have signed up earlier, in order to access the profile screen
Post-Conditions	Profile of the user (buyer/seller) will appear.

Use case: **Unit Cost Estimator**

Brief Description	Unit Cost Estimator
Basic Flow	➢ The user (buyer) navigates to the Unit Cost feature within the system. ➢ The system prompts the user to enter the following cost factors as input: Trade, Vendor, Material, Dimension and Quantity. ➢ The system performs cost calculations based on historic data and predefined cost formulas, and presents the estimated unit cost. ➢ The user reviews the estimate and may adjust or revise it if necessary. ➢ The system updates the estimate based on any changes made by the User. ➢ If the user is satisfied with the cost, he can navigate to 'Generate Quotation' (/Send Quotation) use case, or if doubtful, can view the sample carton using 'Carton Generator'
Alternate Flow	➢ If the user provides inappropriate dimensions, the system displays an error message, allowing the user to correct the data ➢ From the same screen, the user can generate sample carton or generate/send a final quotation if he is satisfied
Validation	➢ The system validates the user's input data to ensure it confirms to the required format and business rules.
Pre-Conditions	➢ The user should have network access ➢ The user should be logged into the system as buyer
Post-Conditions	➢ After the unit cost estimation, the user can generate sample carton or send the quotation if satisfied, to a seller of his choice.

Use case: **Generate Quotation**

Brief Description	Generate Quotation
Basic flow	➢ The user navigates to the Generate Quotation usecase available within the Unit Cost Estimator screen. ➢ Generate Quotation screen takes the 6 parameters from previous screen (Trade. Vendor, Material, Quantity, Dimension), and asks buyer to select a seller. ➢ The system asks for a confirmation from buyer and sends the final quotation to the selected seller if confirmed
Alternate flow	➢ If the user's design preferences are outside the acceptable parameters, the system should display a warning message before sending the quotation
Validation	➢ The system validates the user's inputs and ensure they are within acceptable limits; else it generates warning.
Pre-Conditions	➢ The user should have network access ➢ The user should be logged into the system as buyer ➢ The dimension and other inputs should be realistic enough to generate quotation
Post-Conditions	➢ The user has successfully sent a quotation to the seller, or discarded it if revisions are needed.

Use case: **Invoice Generator**

Brief Description	Invoice Generator
Basic Flow	➢ In this use case, users click on Generate Invoice feature available once the user sends his quotation to a seller, from Unit Cost Estimator screen. ➢ Based on the input given by user for trade, vendor, material used, quantity, dimension, contact and seller an invoice is generated. ➢ The invoice contains above parameters along with total cost, tax information, and payment terms. ➢ The system generates the invoice for preview, giving users the option to download it as PDF. ➢ The user may also choose to share the invoice to his email
Alternate Flow	There may be some issues faced by the user like: ➢ Network problem: If user is not able to generate invoice, he will be given the option to navigate to previous screen. ➢ If the input data is invalid the quotation must not be sent and no invoice must be generated
Validation	There will be no validation in this use case as it is just displaying the data previously entered by the user
Pre – Conditions	The user must have submitted the quotation to seller, and must have network access.
Post - Condition	An invoice document is generated with option to download

Use case: **My Orders**

Brief Description	My Orders
Basic Flow	In this use case, the user (buyer) navigates to the My Orders option where he can check all his quotations he has submitted till date. Any quotation can be in one of 3 following states: ➢ Approved ➢ Rejected ➢ Pending User will have the option to sort orders history by different filters like dates, price, material, trade, seller etc.
Alternate Flow	➢ From this page, the user can navigate back to profile screen. ➢ If no orders are available, an appropriate message will be displayed
Validation	➢ Price should be calculated precisely. ➢ The date should be fetched correctly. ➢ The user should be able to sort according to price, trade, materials and sellers only (reasonable parameters).
Pre-Conditions	Users should have network access and at least one order to display
Post conditions	If the user has one or more orders in any state (approved, pending, rejected), it will be displayed here

Use case: **Average cost analysis**

Brief Description	Average cost analysis
Basic Flow	In this use case, the system presents an interface where the user will specify the analysis parameters, including: ➢ Material type ➢ Vendor ➢ Trade Name The system retrieves the relevant data from the database based on the specified parameters, and shows average unit cost materialwise, tradewise or vendorwise
Alternate Flow	If there is insufficient data, the system provides an 'Insufficient data' message and requests user to check back later
Validation	Data related to material type, vendor and trade name must be present in the database.
Pre-Conditions	➢ The user is logged into the Cost Estimation System (CES). ➢ Material data and cost information are available in the CES database.
Post – Conditions	Average unit cost analysis will be shown to the user in form of chart, either materialwise, tradewise or vendorwise

Use case: **Quotations received (Approve/Reject)**

Brief Description	Quotations received (Approve/Reject)
Basic flow	In this particular use case, seller accesses the "Quotations Received (Approve/Reject)" feature from the main menu. ➢ The system presents a list of pending quotations received from buyers, along with relevant details such as buyer name, quotation date, material type, and pricing information. ➢ The seller reviews the quotation details and accepts or rejects it accordingly with a valid reason. ➢ The system saves quotation in the approved table (if approved) or discards it if rejected.
Alternate flow	If the seller selects to reject a quotation, a prompt will appear to provide the valid reason for the rejection. This reason will be mailed to the buyer's email address with a proper message.
Validation	➢ The system must validate to remove the quotation from the list once it is approved or rejected, moving it into the approved table or discarding it completely. ➢ Quotations must be in a pending status to be processed.
Pre-Conditions	➢ The user is logged into the Cost Estimation System (CES) as seller ➢ There are pending quotations from buyers in the system.
Post-Conditions	The selected quotation is either saved in the approved table or discarded completely.

Conclusion:

Kostify is a cost estimation system that calculates the unit price of a carton based on parameters input by the user, like material used, dimension, quantity etc. It helps the carton buyers to choose the right packaging for their products.

But why is packaging important after all?

Packaging is an important part of manufacturing as it not only tells customers about your product, but it also tells them about the extent of your customer centric approach. You can actually say a lot about your company with your packaging. For example, if you use expensive and high-end packaging, you're communicating that you're a high-end brand. Hence it is important for buyers to estimate the unit cost of cartons to be used for packaging, and choose it wisely.

With this documentation version 1.0, we came to know about the initial working of a Cost Estimation System and its use cases.