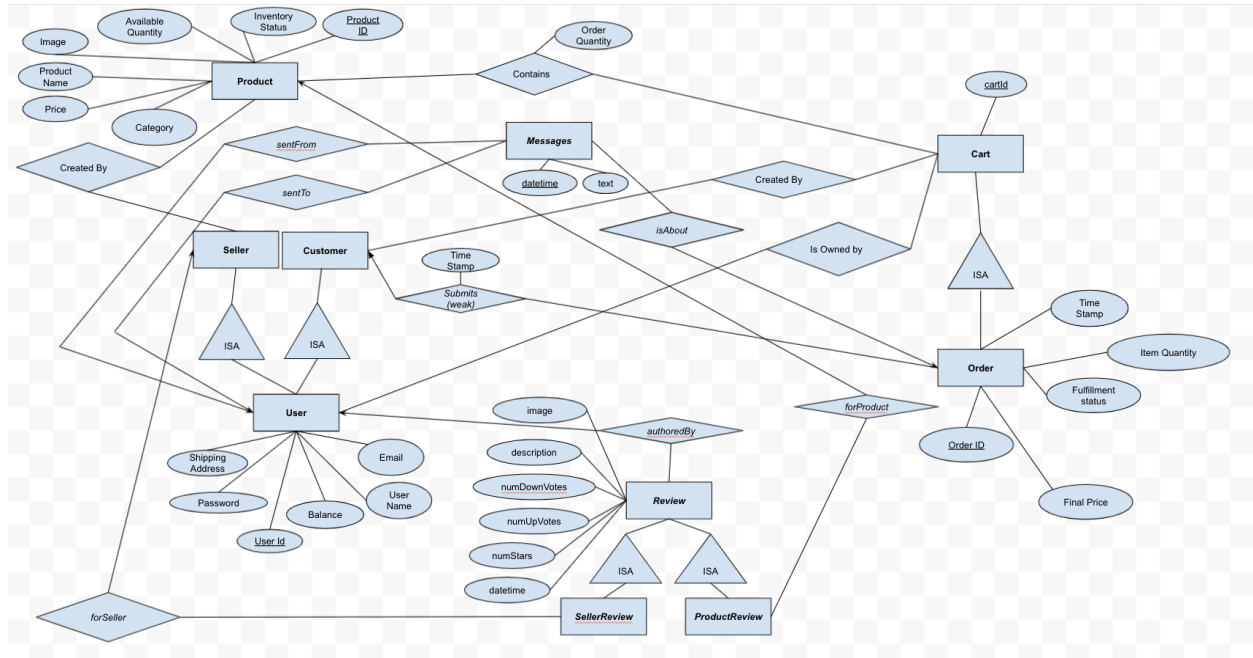


***NOTE:** Weak entity sets represented using *Italics* as Google Drawings doesn't provide tools to specifically match the weak entity set images used in class.

Tables:



- **User**(ID, email, password, name, address, balance, is_seller)
- **Product**(ID, name, category, price, available_quantity, inventory_status, time_stamp, image_id)
- **OrderItem**(ID, uid, productId, quantity, final_price, time_stamp, fulfillment_status)
- **SavedItem**(ID, uid, productId)
- **CartItem**(ID, uid, productId, quantity)
- **SellerReview**(uid, sellerId, datetime, description, numDownVotes, numUpVotes, numStars)
- **ProductReview**(uid, productId, datetime, description, numDownVotes, numUpVotes, numStars)
- **Message**(fromId, toId, orderId, datetime, text)

Constraints:

- 1) Account balances start at \$0 and never dip below \$0
- 2) User emails are unique
- 3) Users can update all user information except user ID
- 4) Users can only leave one review for a seller but can update/remove
- 5) Users can only leave one review for a product but can update/remove
- 6) Need to be able to verify purchase of product

Assumptions:

- 1) Assume all users are buyers. The boolean value `isSeller` determines whether the user is *also* a seller.

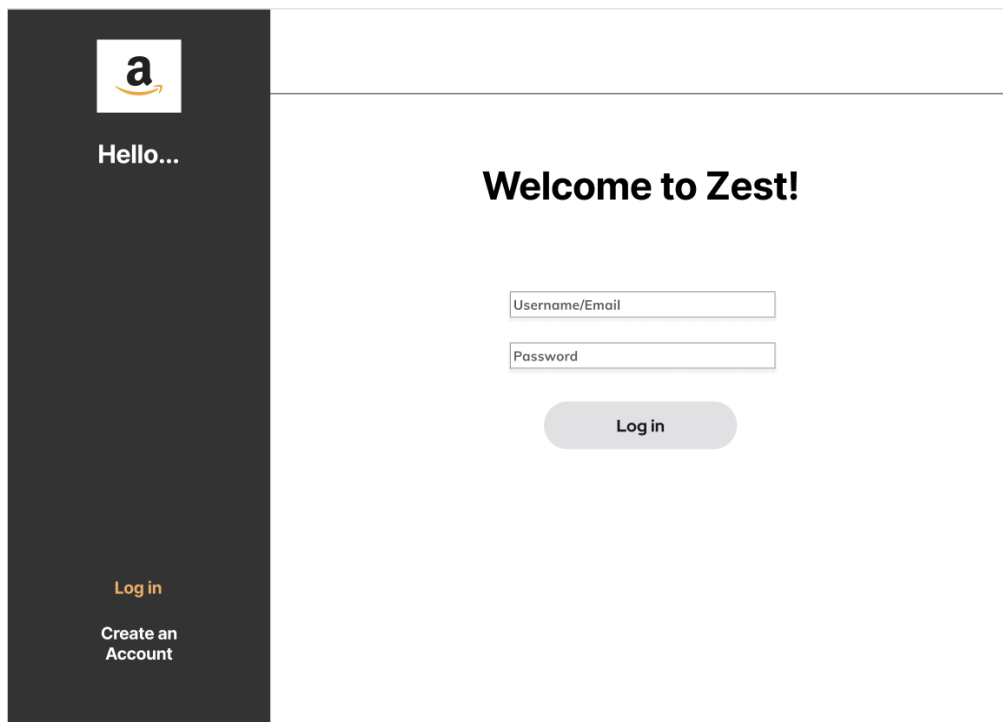
Website Design

Figma:

<https://www.figma.com/file/H9263agNlFdDBQcFG1u197/mini-amazon-team-library?node-id=345%3A2>

Users/Accounts (Sophia Patterson):

- 1) Zest home page prompts users to either log in with an existing account or create a new account. Assume that the username is the User's unique account ID. Users have the options to login with their account ID or their email, which is also unique to each Zest account.



The image shows a wireframe for a login and account creation page. On the left is a dark vertical sidebar. At the top of the sidebar is the Amazon logo (a white 'a' with an orange arrow). Below the logo is the text 'Hello...'. Further down, there is a 'Log in' link in orange text, and at the bottom of the sidebar are the links 'Create an Account' in white text. The main content area is white. At the top of this area is the heading 'Welcome to Zest!'. Below the heading are two input fields: the first is labeled 'Username/Email' and the second is labeled 'Password'. Below these fields is a rounded rectangular button labeled 'Log in'.

- 2) The User Dashboard includes many different tabs, including the profile tab that allows users to manage some of their profile attributes such as name, email, and address. Users

can update these values at any time, as long as the email remains unique to that account.

The image shows a web interface for a user dashboard. On the left is a dark sidebar with the Amazon logo at the top, followed by the text 'User Dashboard'. Below this is a list of navigation links: 'Dashboard', 'Inventory', 'Orders', 'Profile' (highlighted in orange), 'Reviews', and 'Balance'. At the bottom of the sidebar, it says 'Hello, Eric'. The main content area is titled 'Manage Profile' and contains several form fields: 'Full Name' with the value 'Eric Young', 'Email' with the value 'eric.young@gmail.com', and an 'Address' section with five fields: 'Street', 'City', 'State', 'Zip', and 'Country'. All address fields are currently empty. At the bottom right of the form area is a grey 'Update' button.

- 3) Another page located on the User Dashboard is the Balance page. This allows users to manage their account balance. User accounts begin with a balance of \$0, and users can add to their balance. Users are able to withdraw money from their account at any time using this page, with the constraint that the user cannot withdraw more than their current

balance. Thus, it follows that the User balance can never be below \$0.

The screenshot shows the Amazon User Dashboard with a dark sidebar on the left and a main content area on the right. The sidebar contains the Amazon logo, the title 'User Dashboard', a list of navigation links (Dashboard, Inventory, Orders, Profile, Reviews, Balance), and a greeting 'Hello, Eric'. The 'Balance' link is highlighted in orange. The main content area is titled 'Manage Account Balance' and displays the 'Current Balance' as '\$316.00'. Below this is a 'Withdrawal amount' input field with '\$0.00' entered. A 'Submit' button is positioned below the input field.

User Dashboard

Dashboard
Inventory
Orders
Profile
Reviews
Balance

Hello, Eric

Manage Account Balance


Current Balance: \$316.00

Withdrawal amount:

Submit

- 4) The Buyer Dashboard includes account information specific to the buyer side of the user's account. The orders tab on the buyers dashboard displays Order History in order of most recent to least recent, and also displays information about the order status, order total, number of items, and a link to the full order details page. This page also includes a "search orders" text field wherein Users can find a specific order, as well as sort and filter options. The bottom right of the page displays arrows which allow users to navigate through all of their order history, considering that each page can only include a limited

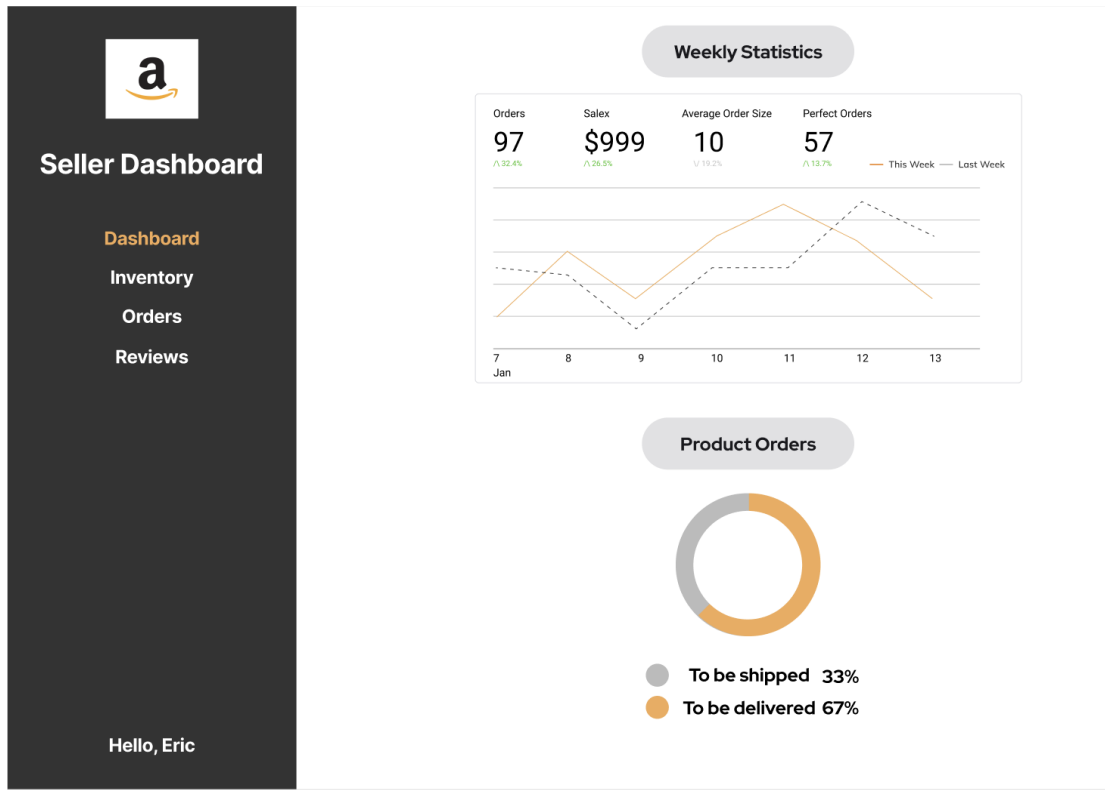
number of orders in the recent history.

<div> Buyer Dashboard Profile Cart Orders Hello, Eric</div>				<div>Manage Orders<div>Search Orders</div><div>SortFilter</div></div>			
Order Number	Status	Order Total	Number of Items				
10 Order Details	UNSHIPPED	\$10.99	2				
9 Order Details	UNSHIPPED	\$10.99	2				
8 Order Details	UNSHIPPED	\$10.99	2				
7 Order Details	UNSHIPPED	\$10.99	2				
6 Order Details	UNSHIPPED	\$10.99	2				
5 Order Details	UNSHIPPED	\$10.99	2				
4 Order Details	SHIPPED	\$10.99	2				
3 Order Details	SHIPPED	\$10.99	2				
				Rows per page: 8 1-8 of 1240 < >			


Inventory / Order Fulfillment (Eric Young):

1. Following the assumption that all users are buyers, users can also become sellers and use their credentials to login to their seller dashboard.
2. Once a seller logs in, they will be brought to the dashboard page, where helpful statistics are shown, such as weekly statistics on orders, sales, average order sizes, and product order breakdowns. These statistics will be accompanied with visualizations that include a

time series analysis of revenue over time.



3. From the dashboard page (or any other page), sellers can navigate to the inventory page, which lists all the products for sale by the seller. Each item will contain the following attributes: 1. Product details (item name and id), available quantity (>0), price per item, date listed, and status (active, inactive). Sellers can adjust the quantity and price of a product directly on the chart with an input button. In the far right of each product listing, there is also a setting icon that allows sellers to change the status of the product (e.g. active, inactive, remove). If the seller selects the remove option, there will be a pop-up warning to allow the seller to confirm the action. Sellers can add new products to the inventory page by clicking the orange add item button, which opens up a form that sellers can submit to add new product listings to the inventory page. The form will ask users to upload an image of the product in addition to the aforementioned product attributes.



Seller Dashboard

- Dashboard
- Inventory
- Orders
- Reviews

Hello, Eric

Manage Inventory


ADD ITEM

Sort Filter

Product Details	Available	Price	Date Created	Status
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 26, 2019 6:30 PM	ACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 26, 2019 8:00 AM	INACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 26, 2019 7:30 PM	ACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 25, 2019 5:00 PM	ACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 25, 2019 4:00 PM	INACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 25, 2019 2:00 PM	ACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 25, 2019 11:30 AM	INACTIVE
Macbook Air (M1, 2020) MGND3LLJA	Available 10	Price \$999	May 24, 2019 1:00 PM	ACTIVE

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4. In the orders page, sellers can browse/search the history of orders fulfilled or to be fulfilled (using the sort/filter buttons and search bar). For each order in the list, a summary of buyer order information is displayed (address, date order placed, total amount/number of items, and overall fulfillment status).



Seller Dashboard

- Dashboard
- Inventory
- Orders
- Reviews

Hello, Eric

Manage Orders

Search Orders

Sort Filter

Order Details	Customer Name	Date	Status
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED
Product Name Item Quantity Shipping Address	Tom Cruise on 24.05.2019	May 26, 2019 6:30 PM	UNSHIPPED

Rows per page: 8 1-8 of 1240 < >

