EcoFashion Management System

Purpose

The primary purpose of the system is to efficiently oversee and optimize diverse facets of sustainable fashion operations, encompassing everything from sourcing rejected clothing products to effectively managing the entire product lifecycle by using a Database Management System.

Database Design

SI No.	Entity	Definition	Relationship
1	Customer	A strong entity that holds customer information Primary Key: CustomerID Foreign Key: *AccountID*	• Customer - Account : (Mandatory One : Mandatory One) • Customer - Helpline : (Mandatory One : Optional Many) • Customer - Order : (Mandatory One : Optional Many) • Customer - Feedback : (Mandatory One : Optional One)
2	Account	A strong entity that keeps a record of the number of registered customers. Primary Key: AccountID	• Account - Customer : (Mandatory One : Mandatory One)
3	Order	A strong entity that holds order details Primary Key: OrderID Foreign Key: *CustomerID* Foreign Key: *PromotionID* Foreign Key: *EmployeeID*	• Order - Customer : (Optional Many : Mandatory One) • Order - Invoice : (Mandatory One : Mandatory One) • Order - Order Line : (Mandatory One : Mandatory Many) • Order - Employee : (Optional Many : Mandatory One) • Order - Shipment : (Mandatory One : Mandatory Many) • Order - Promotion (Optional Many: Optional One)
4	Order Line	An associative entity that keeps track of the no. of Instances of a product	• Order Line - Product : (Mandatory Many : Mandatory One) • Order Line - Order : (Mandatory

		ordered by a customer. Composite Primary Key: ProductID, OrderID	Many : Mandatory One)
5	Invoice	A strong entity that holds invoice details. This included information about the Order (No of Products and their quantities along with the pricing per product X count, any discounts if applied and the total invoice amount that has to be paid by the customer) Primary Key: InvoiceID Foreign Key: *OrderID*	• Invoice - Payment : (Mandatory One : Mandatory One) • Invoice - Order : (Mandatory One : Mandatory One)
6	Payment	A strong entity that has payment details such as the Invoice Id, the Order Id and also the method by which the Customer chose to pay Primary Key: PaymentID Foreign Key: *InvoiceID*	• Payment - Invoice : (Mandatory One : Mandatory One)
7	Product	A strong entity that includes the product details such as product description, its pricing. Primary Key: InvoiceID	• Product - Order Line : (Mandatory One : Optional Many) • Product - Feedback : (Mandatory One : Optional One) • Product - SupplyLine : (Mandatory One : Mandatory Many)
8	SupplyLine	It is an associative entity that stores information about the quantity of the product, and the brand name. Composite Primary Key: ProductID, SupplierID	• SupplyLine - Product : (Mandatory One : Mandatory Many) • SupplyLine • - Supplier: (Optional Many : Mandatory One)
9	Shipment	An entity that provides all the shipment details of a particular order such as	• Shipment - Order : (Mandatory Many : Mandatory One)

		expected delivery date and delivery code (OTP shared by customer at the time of delivery) Primary Key: TrackingID Foreign Key: *OrderID*	
10	Supplier	A strong entity which holds information about various suppliers from where products are sourced. Primary Key: SupplierID	• Supplier - SupplyLine : (Mandatory One : Optional Many)
11	Employee	A strong entity that holds employee information such as Name, Date of Joining, salary, role etc Primary Key: EmployeeID	• Employee - Order : (Mandatory One : Optional Many) • Employee - Ticket: (Mandatory One : Optional Many) • Employee - Role : (Optional Many : Mandatory One)
12	Feedback	An entity that holds feedback and ratings related to the products sold. Primary Key: FeedbackID Foreign Key: *ProductID* Foreign Key: *CustomerID*	• Feedback - Product : (Optional One : Mandatory One) • Feedback - Customer : (Optional One : Mandatory One)
13	Customer Helpline	A strong entity that keeps track of general issues encountered by customers wrt issues related to their orders or any other issues (technical or queries etc) Primary Key: HelplineID Foreign Key: *CustomerID*	• Customer Helpline - Customer : (Optional Many : Mandatory One) • Customer Helpline - Ticket : (Mandatory One : Optional Many)
14	Ticket	An entity that helps to keep track of the issues raised by the customers. Primary Key: TicketID Foreign Key: *EmployeeID*	• Ticket - Customer Helpline : (Optional Many : Mandatory One) • Ticket - Employee : (Optional Many : Mandatory One)

		Foreign Key: *HelplineID*	
15	Role	An entity that describes the many roles present and the monthly salary associated with each role. Primary Key: RoleID	● Role - Employee : (Mandatory One : Optional Many)
16	Promotion	An entity that consists of voucher codes that could be applied for an order. Primary Key: PromotionID	● Promotion - Order : (Optional One : Optional Many)

Business Rules

- A customer can place an order only when they have created an account.
- A customer can place multiple orders or None and each order should belong to a single customer.
- After the order is placed, an order could have one or multiple shipments based on the availability of the products and by when they all can be delivered to the customer.
- Each order must generate precisely one invoice.
- Each order is associated with a single invoice, and payments are made for the generated invoice.
- A product can have multiple or zero feedback.
- Customers have the ability to raise complaints or seek support through a customer helpline which is handled by an employee and each employee can handle zero or multiple customer requests.
- Products are sourced from one or multiple suppliers. (Ex Zara Jacket can be sourced from Zara Directly or TJMax or Burlington)
- An order is processed by a single employee and an employee can have multiple orders to process.
- A promotion could be in the form of a voucher code that can be added to an order, and multiple orders can use the voucher code.
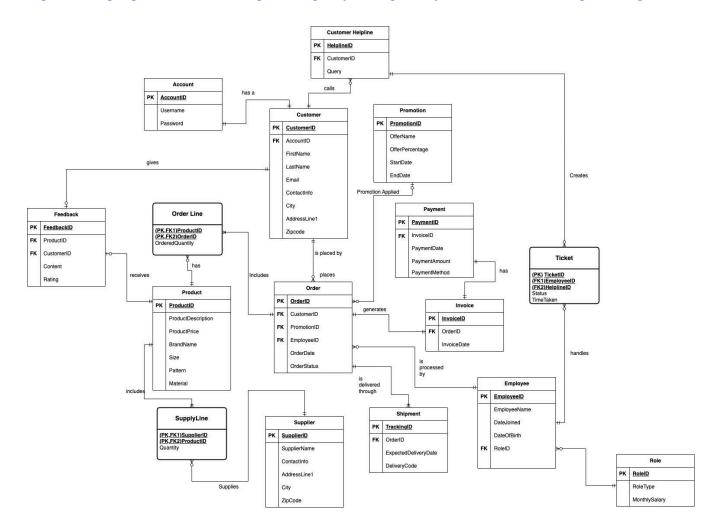
Changes made to P2:

- Both the Supplier entity and the Customer entity now have new attributes "Addressline1", "City" and "Zipcode" replacing the composite attributes " Location" and "Address" respectively in order to attain the third normal form.
- Introduced an associative entity called Ticket between Customer Helpline and Employee to track any tickets created by an employee when a customer reaches out to customer helpline with a query.
- Added CustomerID (referenced from Customer) as a foreign key for Customer Helpline (there is a one to many relationship between both the entities).
- The Product entity has been added with new attributes such as Pattern, Material and size.
- The attribute BrandName which originally belonged to the entity "Supplies", has been changed and now belongs to the "Product" entity.
- The associative entity "Supplies" is now called "SupplyLine".
- The Employee entity has an attribute with a transitive dependency. The primary key for Employee is EmployeeID and the attribute Monthly Salary is dependent on RoleID which is a non key attribute.
- A new relationship between "Feedback" and "Customer" has been established where the customer provides product feedback.

Key descriptions

1. It is assumed that a product review is written by a customer and hence the customer-to-feedback relationship is not defined. A relationship between product and feedback is present which includes ratings and feedback content about an individual product.

2. A Promotion can be used by many customers, there could be instances where there might be an Upper Limit that defines how many times one customer can use the code or How many customers can use it (Ex: A code can only be used by the first 250 customers).

3. Each Product is considered as a single piece since it is a rejected item. Hence, each product is available only in one of the sizes.

Group Members

Arpitha Sheshadri Bhat	002271380
Ashwini Nagathan	002856116
Prashanth Talwar	002843755
Vishnu Paduchuri	002292931
Jahnavi Akkaladevi	002753293