



**Department of Electrical,
Computer, & Biomedical Engineering**
Faculty of Engineering & Architectural Science

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<i>Assignment/Lab Number:</i>	2
<i>Assignment/Lab Title:</i>	Entity-Relationship Diagram Design

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Entities:

1. Customer: The user that browses the product inventory and places an order.
2. Order: The order placed by the user and the details.
3. Product: The item ordered by the user based on the rating, reviews, and discounts.
4. Review: The product feedback as provided by the customer along with the ratings.
5. Deals: A discount-day like event that lists the popular product on sale.

Relationships:

1. Places: Relation between a customer and an order. A customer can place 0 or many orders.
2. Contains: Relation between an order and a product. An order can have 1 or many products.
3. Has: Relation between a product and reviews. A review needs to be a part of 1 product.
4. Write: Relation between customer and reviews. A customer can write 0 or more reviews.
5. Display: Relation between products and deals. A product can be a part of 0 or many deals.

Attributes:Customer:

- Customer_ID: A unique ID assigned to each customer.
- Customer_First_Name: The customer's first name.
- Customer_Last_Name: The customer's last name.
- Billing_Detail: The billing details of the customer.
- Num_Of_Orders: Total number of orders placed by the customer.

Order:

- Order_ID: A unique ID assigned to each order placed.
- Order_Cost: The total cost of the order.
- Order_Date: The date the order was placed.
- Order_Status: The tracking information of the order.

Product:

- Product_ID: A unique ID assigned to each product as part of the inventory/database.
- Product_Name: The name of the product.
- Product_Company: The company that sells the product.
- Product_Description: A short description about the product.
- Product_Avg_Ratings: A five-star rating calculated as an average from the rating stars of the product as part of the reviews.
- Subscription_Option: A binary option selecting 'yes' or 'no' to a subscription service for the product.
- Product_Availability: The availability of the product.

- Department: The department the product belongs to.

Review:

- Review_ID: A unique ID assigned to each review.
- Rating_Stars: The rating stars associated with each review.
- Comment_Sentiment: A one-word review of the product as either: Good, Moderate or Bad.

Deals:

- Product_Sell_Performance: The performance of the best-selling and worst-selling products.
- Price: The price of the products after the applied discount.
- Discount_Rates: A percentage figure of the discount for each product.

Cardinality:

- Customer to Order: A customer can place none or multiple orders. The order associated to each customer is unique and can only be 1 per customer.
- Order to Product: An order can contain have 1 or many products. A product can contain 0 or many orders.
- Product to Review: A product has 0 or many reviews. A unique review only has 1 product associated.
- Review to Customer: A customer can write 0 or many reviews. A review written by the customer is unique and can only be 1.
- Deals to Products: A deal can display 1 or many products. A product can be displayed on 0 or many deals.

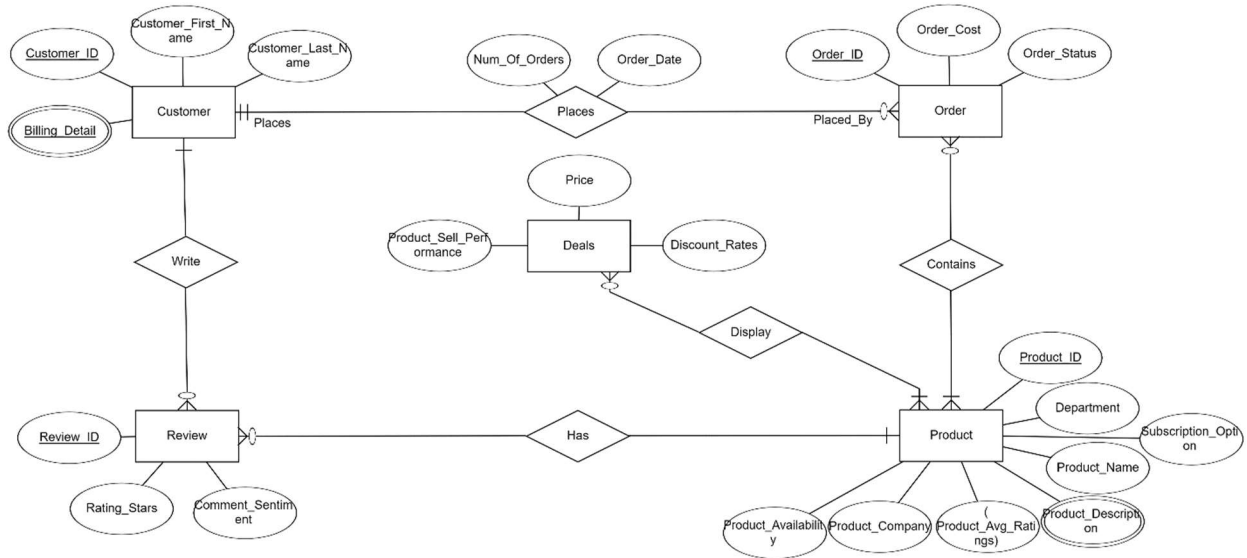


Figure 1: Entity-Relationship Diagram (ERD) of an e-commerce platform such as Amazon