Experiment 1

Aim: Identify the case study and detail statement of problem.

Design an Entity-Relationship (ER) / Extended Entity-Relationship (EER) Model

Hardware and Software Requirement: P-IV and above

Theory:

The entity-relationship E-R model is very useful in mapping the meanings and interactions of real-world enterprises onto a conceptual schema. Because of this usefulness, many database-design tools draw on concepts from the E-R model. The E-R data model employs three basic concepts: entity sets, relationship sets, and attributes. The E-R model also has an associated diagrammatic representation, the ER diagram, which can express the overall logical structure of a database graphically.

An entity is an object that exists and is distinguishable from other objects.

Example: specific person, company, event, plant

An entity set is a set of entities of the same type that share the same properties.

Example: set of all persons, companies, trees, holidays

An entity is represented by a set of attributes; i.e., descriptive properties possessed by all members of an entity set.

Example:

instructor = (*ID, name, street, city, salary*)

course= (*course_id, title, credits*)

A subset of the attributes form a primary key of the entity set; i.e., uniquely identifying each member of the set.

Attribute types:

- Simple and composite attributes.
- Single-valued and multivalued attributes
    - Example: multivalued attribute: *phone_numbers*
- Derived attributes
    - an be computed from other attributes

Domain – the set of permitted values for each attribute

Express the number of entities to which another entity can be associated via a relationship set.

Most useful in describing binary relationship sets.

For a binary relationship set the mapping cardinality must be one of the following types:

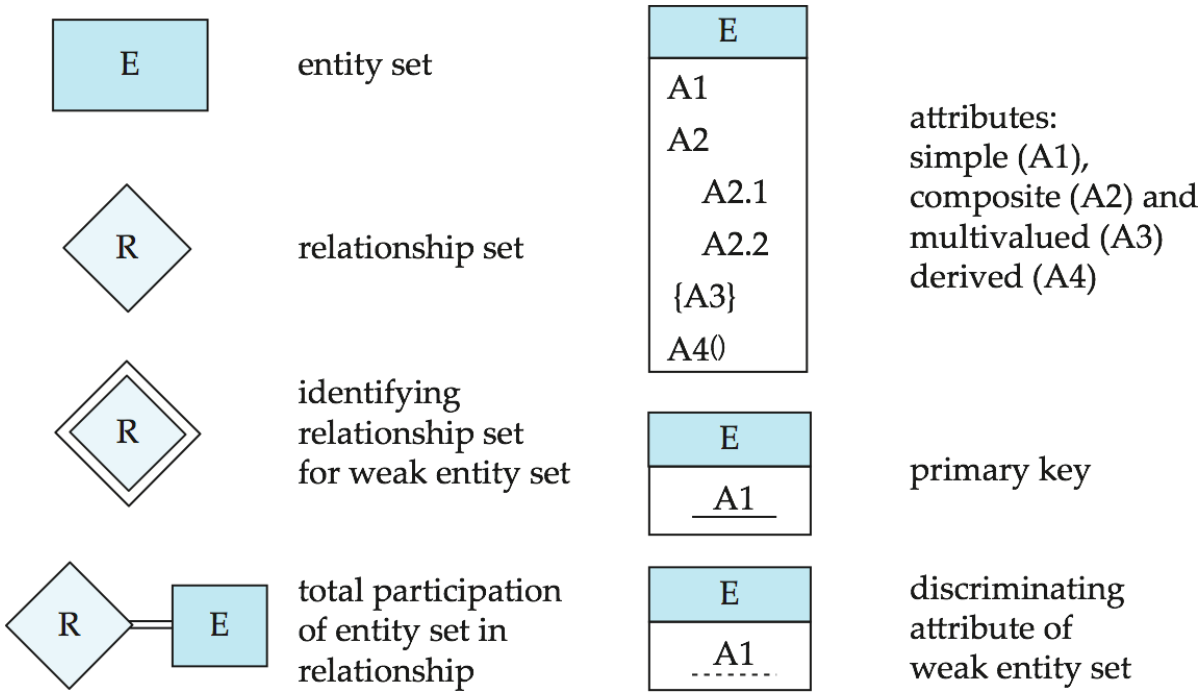
One to one

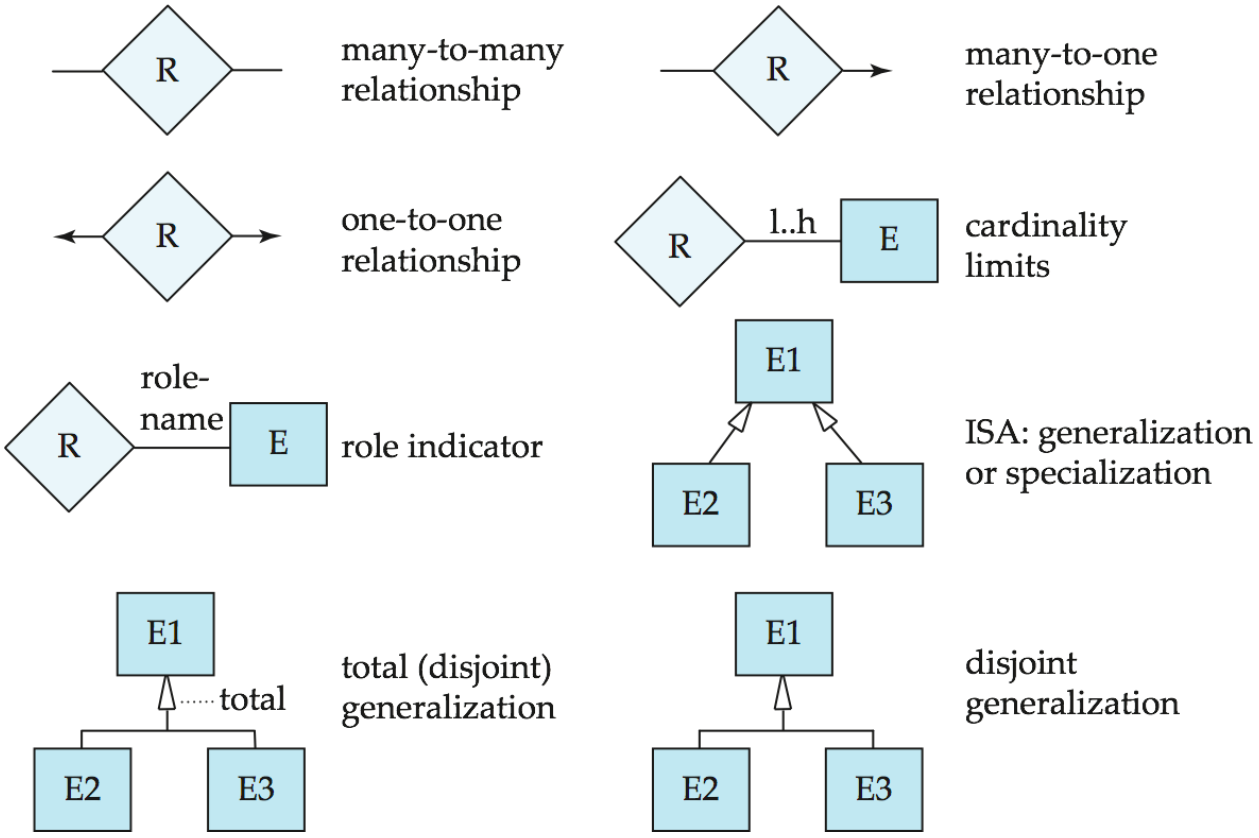
One to many

Many to one

Many to many

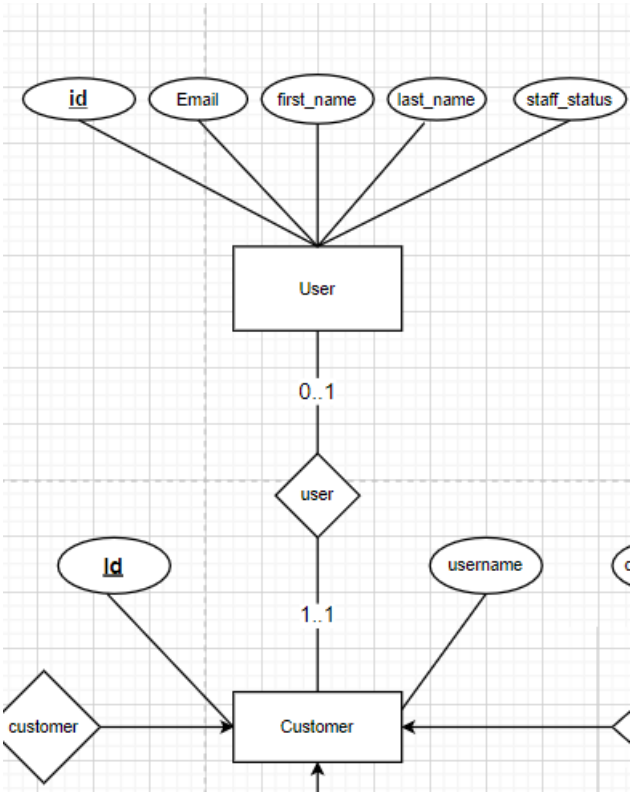
Symbols Used in E-R Notation



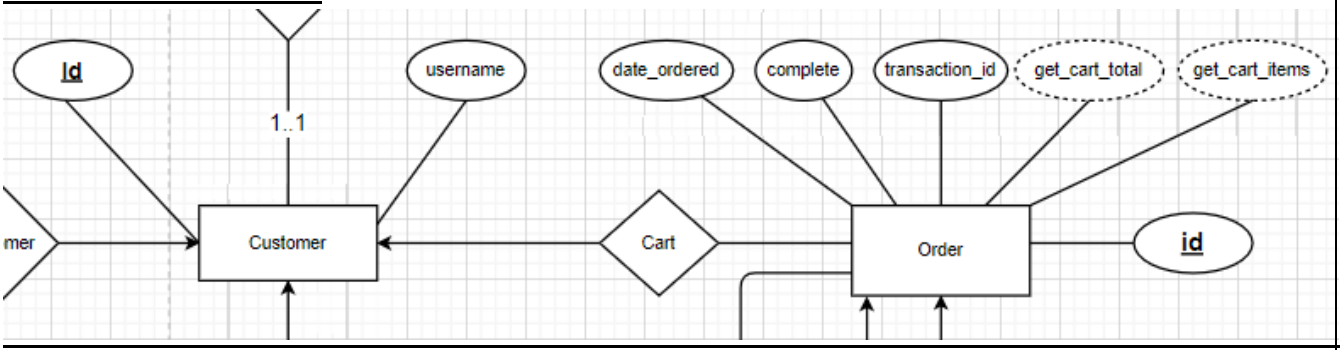


Conclusion: We have Successfully design ER model for Ecommerce website.

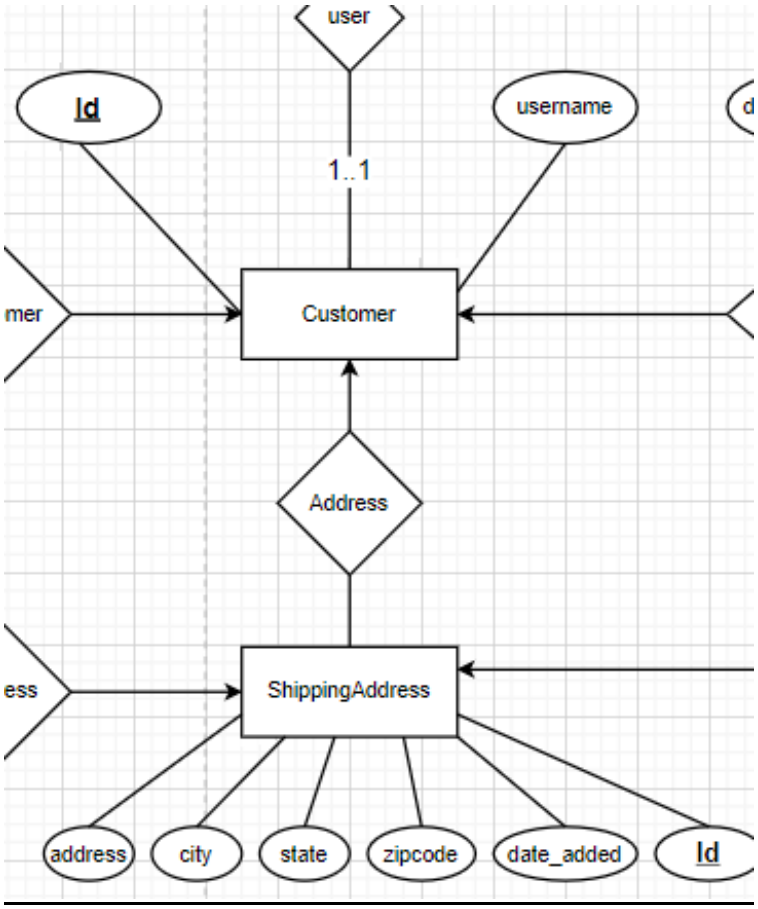
User-Customer Model:



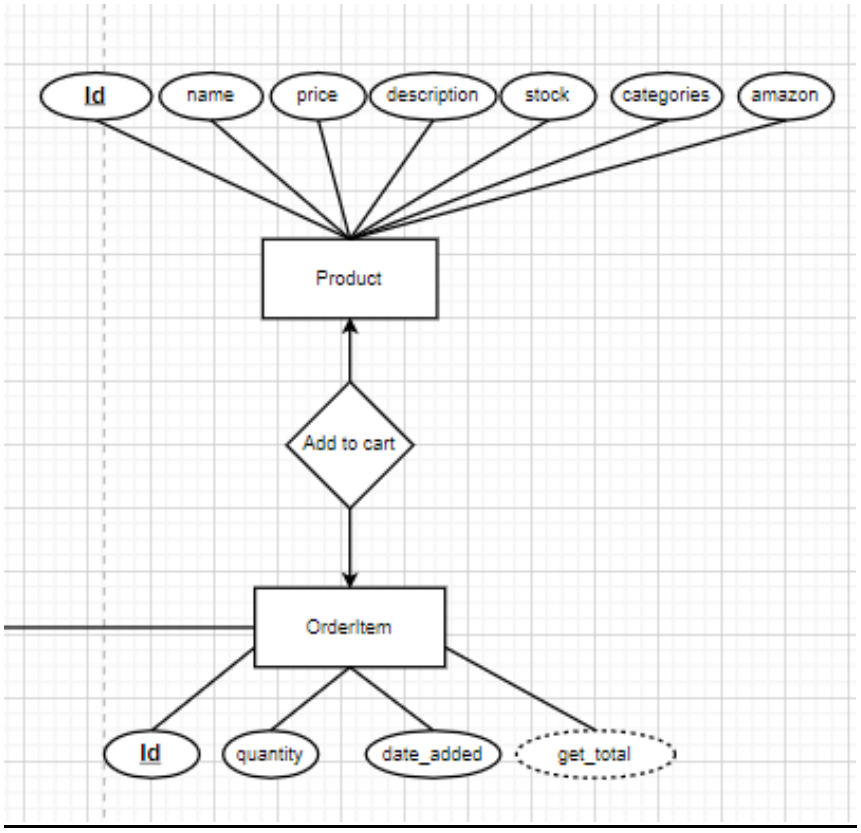
Customer-Order Model:



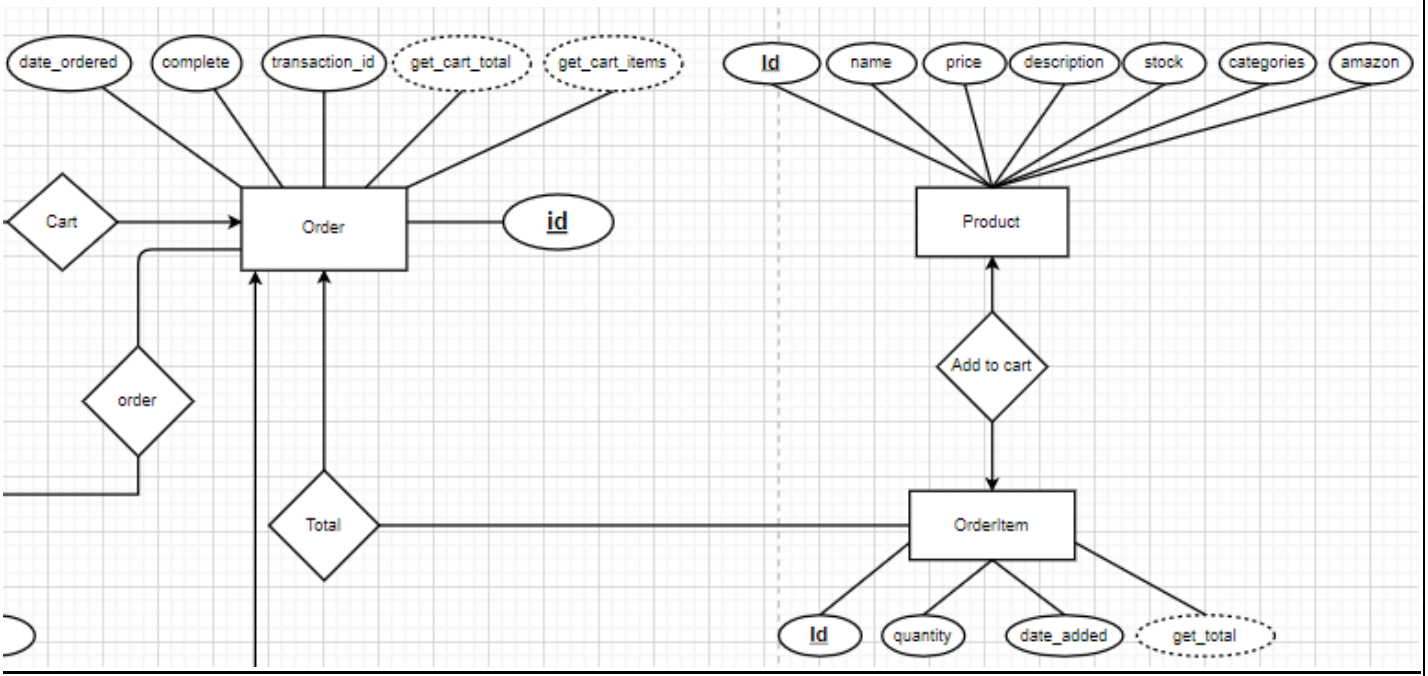
Customer-Shipping Model:



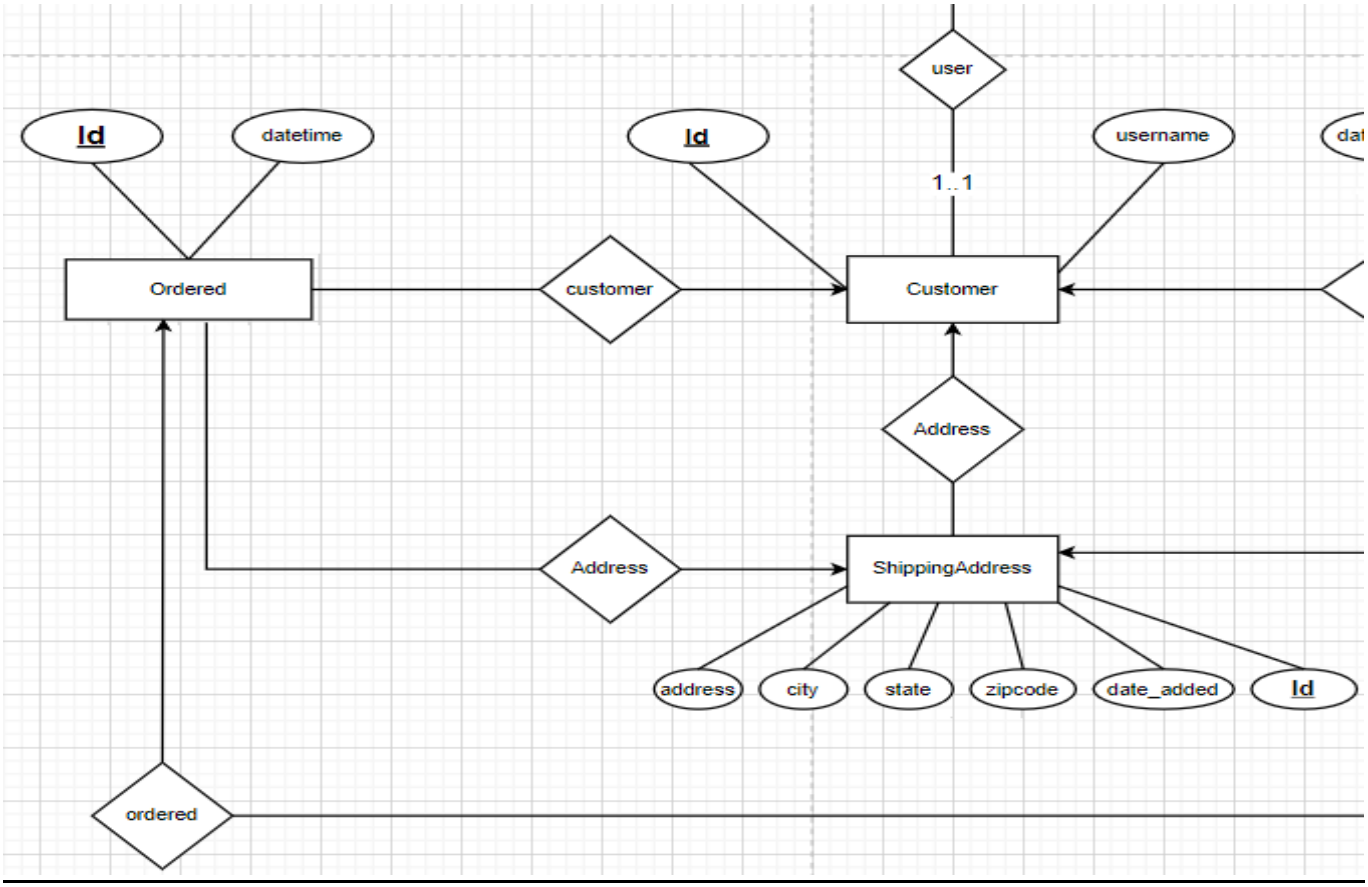
Product-OrderItem Model:



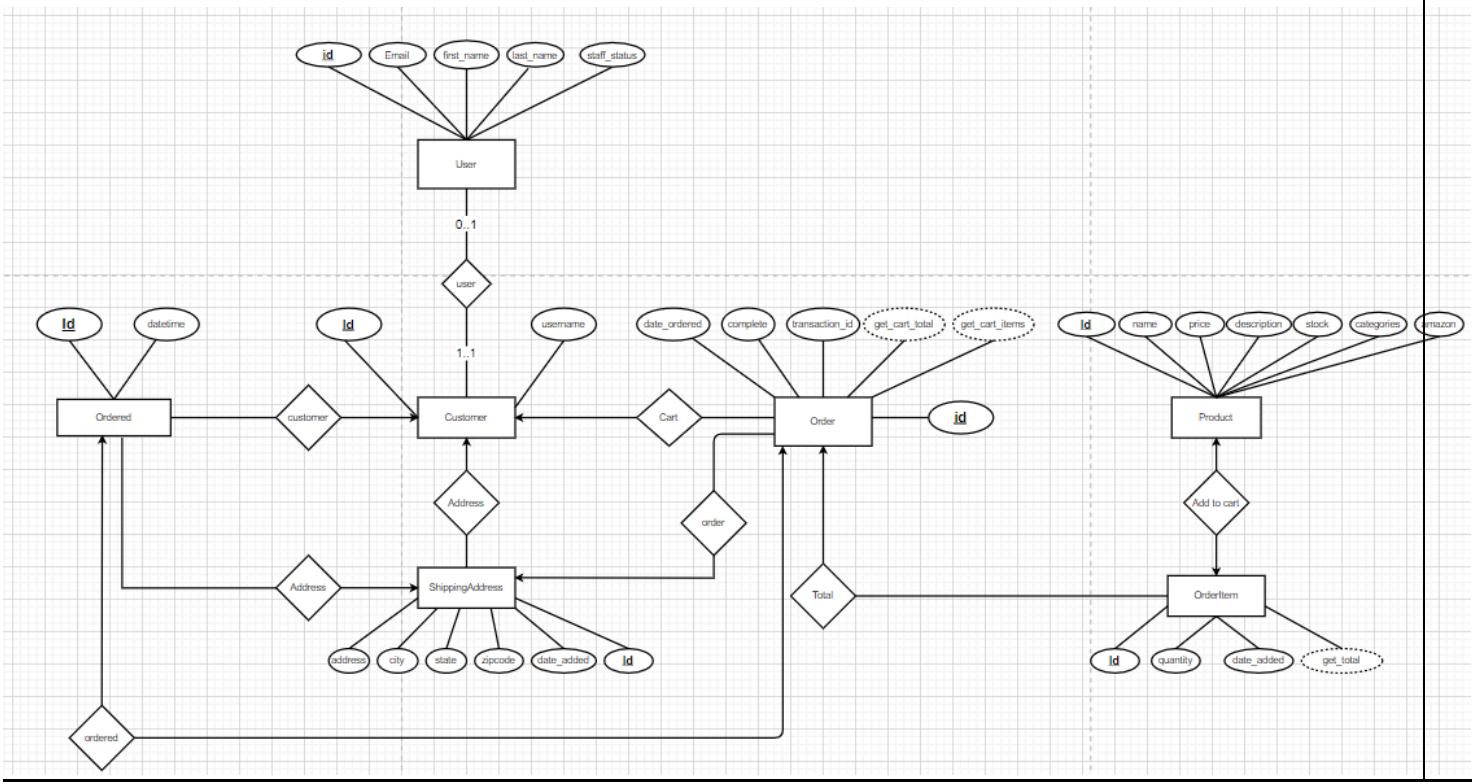
Order-OrderItem Model:



Ordered-Customer-Address-Order Model:



Final Model:


id
Email
first_name
last_name
staff_status
User
0..1
user
1..1
Id
datetime
Ordered
customer
Id
username
Customer
Address
Address
ShippingAddress
address
city
state
zipcode
date_added
Id
ordered
date_ordered
complete
transaction_id
get_cart_total
get_cart_items
Cart
Order
id
order
Total
Id
name
price
description
stock
categories
amazon
Product
Add to cart
OrderItem
Id
quantity
date_added
get_total