**Term Project**

**Introduction to “Selling on Amazon”**

**Are there any online marketplaces more reputable than Amazon? Probably not.**

**Why not? For one, Amazon has successfully made use of many unique**

**innovations. For another, Amazon has significantly systematized the selling**

**process, structuring a generalized marketplace which virtually any seller can plug**

**into without much difficulty. Amazon has also become so large that it can**

**negotiate discounts with international organizations, including significant shipping**

**cost discounts. Simply speaking, other online marketplaces generally cannot**

**compete.**

**One of Amazon’s innovations is Amazon fulfillment; Amazon handles the**

**inventory, orders, shipping, returns, and customer service on behalf of the seller.**

**To plug in to the marketplace, the seller only needs to deliver the products to one**

**of Amazon’s warehouses and Amazon takes over from there.**

**Structural business rules**

**Entities:**

Seller, Product, Category, Warehouse, Inventory, Shipping, Purchase, Consumer, Shipping Speed.

**Business Rules:**

1. A seller can sell multiple products and a product can be sold by one or more sellers.

Many to Many Relation

1. A category can have multiple products, but a product can belong to only one category.

One to Many Relation

1. A seller can handle multiple categories and a category can have multiple sellers.

Many to Many Relation

1. A seller can send products to Amazon warehouse and Amazon warehouse can receive products from one or more seller.

One to Many Relation

1. A consumer can create one account and an account can be related to one consumer.

One to One Relation

1. A consumer can have one or more orders but a order can be associated with only one consumer.

One to Many Relation

1. A seller inventory can have one or more products and a product can be in one or more seller’s inventory.

Many to Many Relation

1. A single shipment can have one or more order, but a single order can be associated with one shipment.

One to Many Relation

1. A consumer can have a single default address and an address can have on or more consumer.

One to Many Relation

**Conceptual ERD**

Diagram

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**Logical ERD**

Diagram

Description automatically generated

**Aspect 1: New Product Created by Seller**

Procedure to add new product to inventory

Graphical user interface, text, application, email

Description automatically generated

Adding new product to inventory using procedure

Graphical user interface, text, application, email

Description automatically generated

Display of available product in inventory

Graphical user interface, text, application, email

Description automatically generated

**Aspect 2: Amazon Receipt of Product from Seller**

Procedure to update received product from seller

Graphical user interface, text, application

Description automatically generated

Updating received product from seller

Graphical user interface, text, application

Description automatically generated

Display of available product in inventory belong to a supplier

Graphical user interface, text, application

Description automatically generated

**Aspect 3: New Consumer Account**

Procedure to add new consumer login

Graphical user interface, text, application, email

Description automatically generated

Invoking procedure and adding new consumer

Text

Description automatically generated with medium confidence

Display of number of accounts with similar last name

Graphical user interface, application

Description automatically generated

**Aspect 4: Product Purchase by Consumer**

Procedure to make a purchase by customer

Graphical user interface, text, application

Description automatically generated

Invoking procedure and adding purchase information

Graphical user interface, text, application

Description automatically generated

Display of consumer details who purchased a single product

Graphical user interface, text, application

Description automatically generated

**Aspect 5: Product Shipment by Amazon**

Procedure to update shipment of product

Graphical user interface, text, application

Description automatically generated

Invoking procedure and adding shipment information

Graphical user interface, text, application

Description automatically generated

Display of number of standard shipments

Graphical user interface, text, application

Description automatically generated

**Index Justification and Creation**

Graphical user interface, application

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This index is useful because it enables more effective queries when looking for inventory items that belong to a specific seller and are housed in a particular warehouse. Without the index, every time a query like this was done, the database would have to fully scan the Inventory table, which can be quite time- and resource-consuming, especially for big databases.

The seller\_id and warehouse\_id columns can be used by the database to rapidly discover the pertinent entries in the Inventory table, speeding up search times and enhancing performance. By giving a quicker means to match rows based on the indexed columns, the index can also aid in optimizing join operations between the Seller and Inventory databases.