**Abstract**

This document discusses the structure and components of a database for a real-world E-commerce system. We first presented what are we going to sell for the consumer? We went with selling men and women t-shirts. We then discuss logical components of a typical e-commerce database system for the admin user. Finally, we illustrate the layout and detailed design of an e-commerce website that correlates with the database system, such as the primary key, foreign key, outer join, etc.

Business Rules:

A User can have zero or many orders

Orders can be assigned to only one user

A User can only be assigned to a cart

A user is able to remove one or more products from the cart

Cart can only be assigned to one user

An order can be assigned to only one product

A product can have zero or many orders

A quantity size can be assigned to only one product

A product can have one or many quantity size

A category can have one or many products listed

A product can only one be assigned to one category.

The database will include price lists for available products

The search tool will draw on a complete data set

The database will be easily searchable

The database would store users' first name, last name, email, and password.

Entities:

Users- shop admin

Products - products to sell

Categories - category of products. e.g., men and women

Quantity of size – size of the products

Cart – List of product that user selects