

**YTU**

**IST2142-DATABASE**

**2022-2023 SPRING GR:2**

**HOMEWORK 1- ER MODEL**

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We are creating an ER model for e commerce business. In the store there are different kinds of products, warehouses, payment options and too many customers and orders. In addition, there are customers that are waiting for shopping on our store.

* We have created an entity named “Customers”. This entity has attribute such as “Customer ID”, “Phone Number”, “Gender”, “Name Surname” and “ Address”. In these attributes “Customer ID” and “Phone Number” are private keys.
* We have created an entity named “Orders”. This entity has attribute such as “Order ID”, “Orders Details” and “Total Orders”. In these attributes “Order ID” is private key and “Total Order” is derived attribute.
* We have created an entity named “Pay Options”. This entity has attributes such as “Bill Information”, “Order Option” and “Order Date”
* We have created an entity named “Storage”. This entity has attributes such as “Amount”, “Storage No”, “Row Shelf Number”. “Amount” is derived attribute.
* We have created an entity named “Products”. This entity has attributes such as “Product ID”, “Type”, “Size” and “Color”. “Product ID” is private key and “Color” is multivalued attribute.
* We defined a relationship called “Gives” between “Customer” and “Orders”. This relation defines the process of placing an order. There is 1-N relationship from “Customer” to “Orders”. “Customer” can place multiple “Order”, but each “Order” can only belong to one “Customer”.
* We defined a relationship called “Get” between “Orders” and “Pay Options”. This relation defines the payment option. There is 1-N relationship from “Pay Options” to “Orders”. “Payment Options” can apply to multiple “Orders”, but each “Order” can only have one “Payment Option”.
* We defined a relationship called “Check” between “Orders” and “Storage”. There is M-N relationship from “Storage” to “Orders”. The product in an “Order” can be locate in multiple “Storage”, and the products in the “Storage” can belong to multiple “Orders”.
* We defined another relationship called “Check” between “Storage” and “Product”. This relationship is defined for logistic part of our business. The relationship we have defined checks whether the “Storages” has the “Products” with the desired features. There is M-N relationship from “Products” to “Storage”. The “Products” ordered by customers may be located in the different “Storages”, and the different “Storages” may have the “Products” the customer ordered.

Our e-commerce business is a thriving online store with a wide range of products that cater to the diverse needs of our customers. These products are stored in various warehouses, allowing us to efficiently manage inventory and deliver products to our customers in a timely manner.

To make shopping more convenient for our customers, we offer different payment options, such as credit card, debit card, and online payment systems. This allows our customers to choose the payment method that works best for them.

We have a large and loyal customer base, with many returning customers and new customers signing up every day. Each customer has a unique profile that contains their personal information, such as name, address, and contact details, as well as their order history and payment preferences.

Our order management system is efficient and effective, allowing us to process orders quickly and accurately. Each order is assigned a unique identifier and contains information about the customer, the products purchased, the payment method, and the shipping address.

Overall, our e-commerce business is a well-organized and efficient operation, with a robust ER model that allows us to manage our inventory, process orders, and provide excellent customer service to our customers.