# ENSF608 Deliverables: Conceptual Database Design and Logical Database Design

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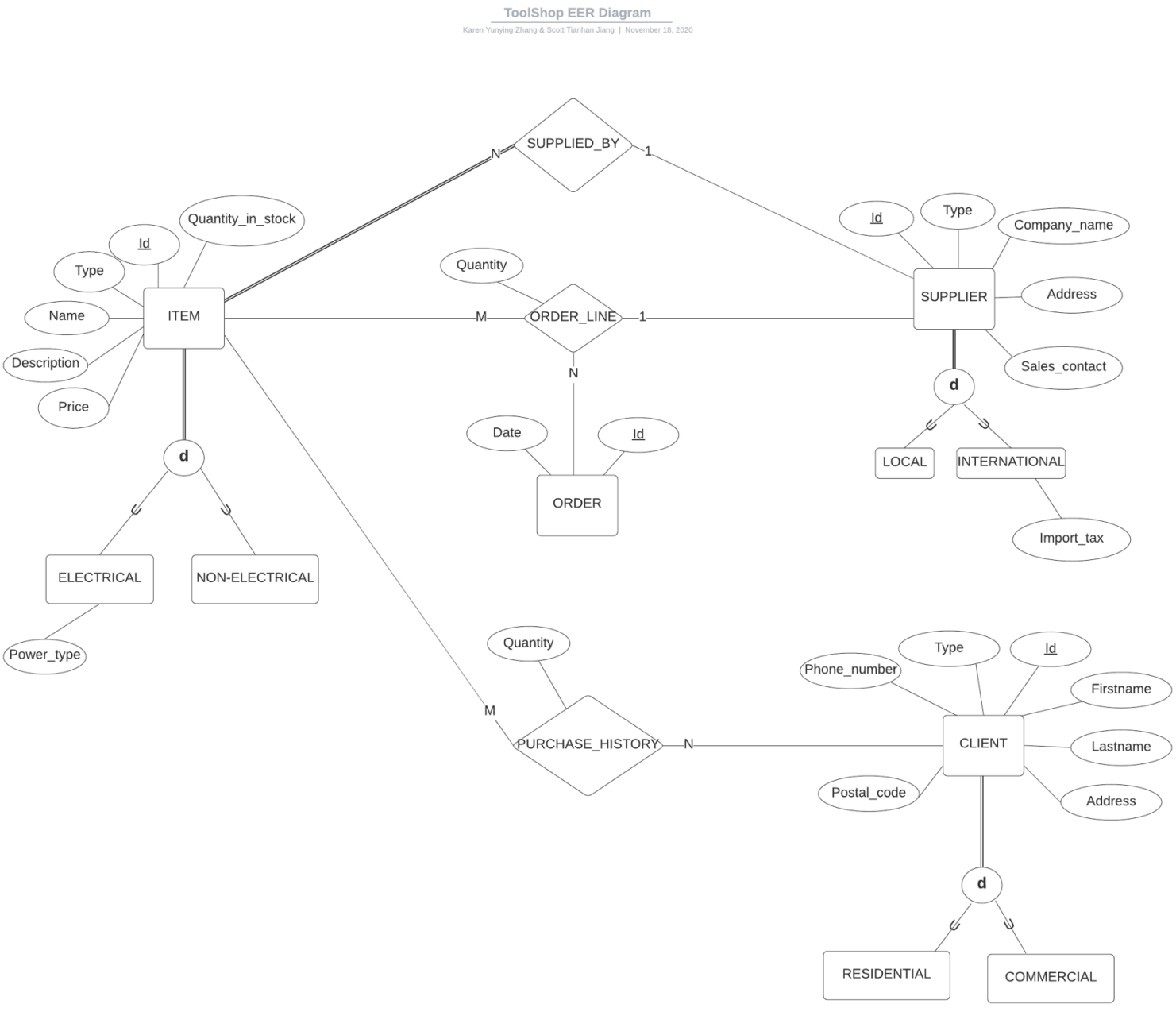

# Design Decisions and Assumptions on Conceptual Design and Logical Design

For ITEM, its information including Id, Type, Name, Description, Price and Quantity_in_stock are stored as its attributes. The Id of an item is the only unique key hence it is chosen as the primary key. ITEM also has two specializations, ELECTRICAL or NON-ELECTRICAL. An electrical item has information about power type.
ITEM is SUPPLIED_BY SUPPLIER, this is a N:1 cardinality as one supplier can supply more than one item. It has total participation with SUPPLIER. SUPPLIER stores information for Id, Type, Company_name, Address, and Sales_contact. Supplier Id is the primary key as it is unique for a supplier. SUPPLIER can be LOCAL or INTERNATIONAL, and we store Import_tax for INTERNATIONAL suppliers.
CLIENT purchases ITEM, and we store Quantity that a client purchased in PURCHASE_HISTORY. CLIENT has information of Phone_number, Type, Id, Firstname, Lastname, Address, and Postal_code. A CLIENT can be RESIDENTIAL or COMMERCIAL.
ITEM and CLIENT has M:N relationship, as multiple clients can purchase multiple items.
An ORDER has information of Date and Id. Id is chosen to be the primary key of ORDER, as it is randomly generated and we assume the uniqueness is handled from the software side. Since only one order is generated in one day, Date is also an unique key but not primary key.
We assume the relationship between ITEM, SUPPLIER, and ORDER is n-ary relationship because every ORDER_LINE generated for restock consists of information from both ITEM and SUPPLIER, and several such ORDER_LINE will form an ORDER of the day.
It has cardinality of 1 for SUPPLIER and many for the other two entities.

# ToolShop Relational Data Model

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