Assignment 1: Tool Rental Management

1. Category Table:

**CategoryID (Primary Key),**

CategoryName

SubCategoryID (Foreign Key)

2: Tool Table:

**ToolID (Primary Key)**

ToolName

Description

CategoryID (Foreign Key)

RentalRate

AvailabilityStatus

3: Customer Table:

**CustomerID (Primary Key)**

FirstName

LastName

Email

Phone

4: RentalOrder Table:

**OrderID (Primary Key)**

CustomerID (Foreign Key)

OrderDate

ReturnDate

5: OrderDetails Table:

**OrderDetailID (Primary Key)**

OrderID (Foreign Key)

ToolID (Foreign Key)

RentalDays

Price

A screenshot of a computer

Description automatically generated

1: “Hierarchy”

In Category table, it includes a column sub-category, a self-referencing foreign key to represent parent-child relationships. This recursive structure created hierarchical relationships.

For example, category “Power Tools” includes subcategory “Drills” and “Saws”, and category “Saws” includes “Circular Saws”, “Jigsaw” etc. Furthermore, category “Circular Saw” includes “Table Saw”, “Panel Saw”, “Miter saw” etc.

2. “Is-a”

Tools table and Category make up an “Is-a” relationship. Each specific tool belongs to certain categories. For example, A "Shovel" belongs to the “Garden tools" category, it also belongs to "Hand Tools" category.

3. “Contains.”

OrderDetails Table is an intersection table of order tables and Tools table, each “rental order” can contain multiple tools and order details table contain multi orders.

4. “Related to”

Rental order table and customer table makes a “Related to” relationship. For each order, it shows which customer made the rental.