



Term Project

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DATABASE DESIGN & SQL

Product: Hair Dryer

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COMPANY DESCRIPTION

1.1 **Company Name :** Pryson Ltd.

1.2 **Company Overview :**

Pryson Ltd. was established in 2014 by Lipika and her friends. The idea was to sell products online from different manufacturers and in mid 2015 company experienced tremendous growth. We are known for providing quality products as customer satisfaction is our highest priority.

Our Company introduces multi-brand Hair Dryers for all category of people and prices are low as compared to directly buying from manufacturers. It also introduces young people to the exciting world of

business, encouraging them to think differently, make mistakes and realize their business skills.

If customers order Hair Dryers from our company we provide them:

- Best Price Guaranteed
- Free shipping and returns
- 30 day money back guarantee
- widest selection

Customers can also activate their warranty and they can further find the right tool, find the right spare part and get help on their product.

1.3 **Product:** Hair Dryer

1.4 Product Attribute:

Attributes	Sample Data
Product ID	101A
Brand	Blingo
Model	A01-233
Type	Infrared
Dimensions	10.8 x 32.4 x 25.4 cm
Description	Ceramic Tourmaline
Motor	1855 watt
Cable	2.65 metres
Color	Black
Warranty	2 year
Heat	Moderate
Speed	Strong
Accessories	Diffuser
Serial number	76-989-76
price	79.99 \$
Noise	40 %

Technology	Titanium Ceramic
Review	4 star

Hair 'n' Care Ltd

921,London Road,

N7S 1N6

Sarnia ,ON

1.5 Customer Sales Invoice

Customer ID:204

Customer Name:Ridhi Patel

Customer Address:231 Main Street
London, ON N7S 5K9

Order ID: 09801

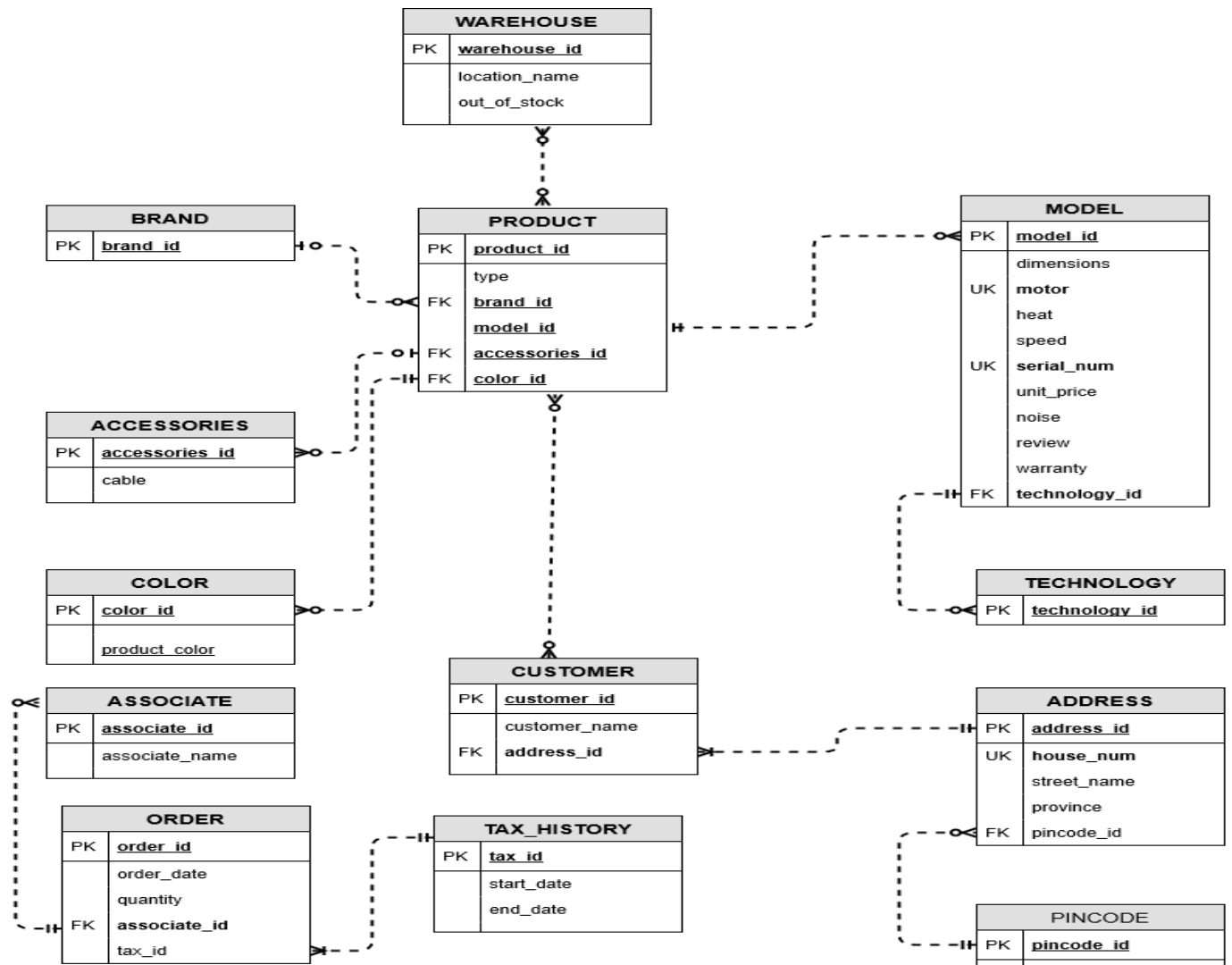
Order Date: 15/01/2020

Associate ID: 501

Associate Name:Rebecca

Product ID	Model	Brand	Description	Qty	Unit Price	Extended Price
101A	A01-233	Blingo	Ceramic Tourmaline	2	45.99	91.98
ER203	WER23	Woodbox	Smart sensor	1	39.99	39.99
CM713	36-59278	Azix	lightweight	2	49.99	99.98
OP101	WET102	Dryhair	Iconic Blowdryer	3	55.00	165.00
LQ542	LOQw1	Blingo	Ceramic Tourmaline	1	48.89	48.89
					Sub-total	445.84
					Tax	34.29
					Invoice Total	480.13

3.1 ER Diagram with many- to- many relationship



Each **PRODUCT** may have zero or one **BRAND**
 Each **BRAND** may have zero, one or more **PRODUCT**

Each **PRODUCT** may be made by zero, one or more **MODEL**
 Each **MODEL** must make one and only one **PRODUCT**

Each **PRODUCT** may consist of zero or one **ACCESSORIES**
 Each **ACCESSORIES** may have zero, one or more **PRODUCT**

Each **PRODUCT** may be made of zero, one or more **COLOR**
 Each **COLOR** must be for one and only one **PRODUCT**

Each **PRODUCT** may have zero, one or more **ORDER**
 Each **ORDER** must consist of one and only one **PRODUCT**

Each **CUSTOMER** may have zero, one or more **ORDER**
 Each **ORDER** must be of one and only one **CUSTOMER**

Each **CUSTOMER** must consist of one and only one **ADDRESS**
 Each **ADDRESS** must have one or more **CUSTOMERS**

Each **ADDRESS** must have one and only one **PINCODE**
 Each **PINCODE** may have zero, one or more **ADDRESS**

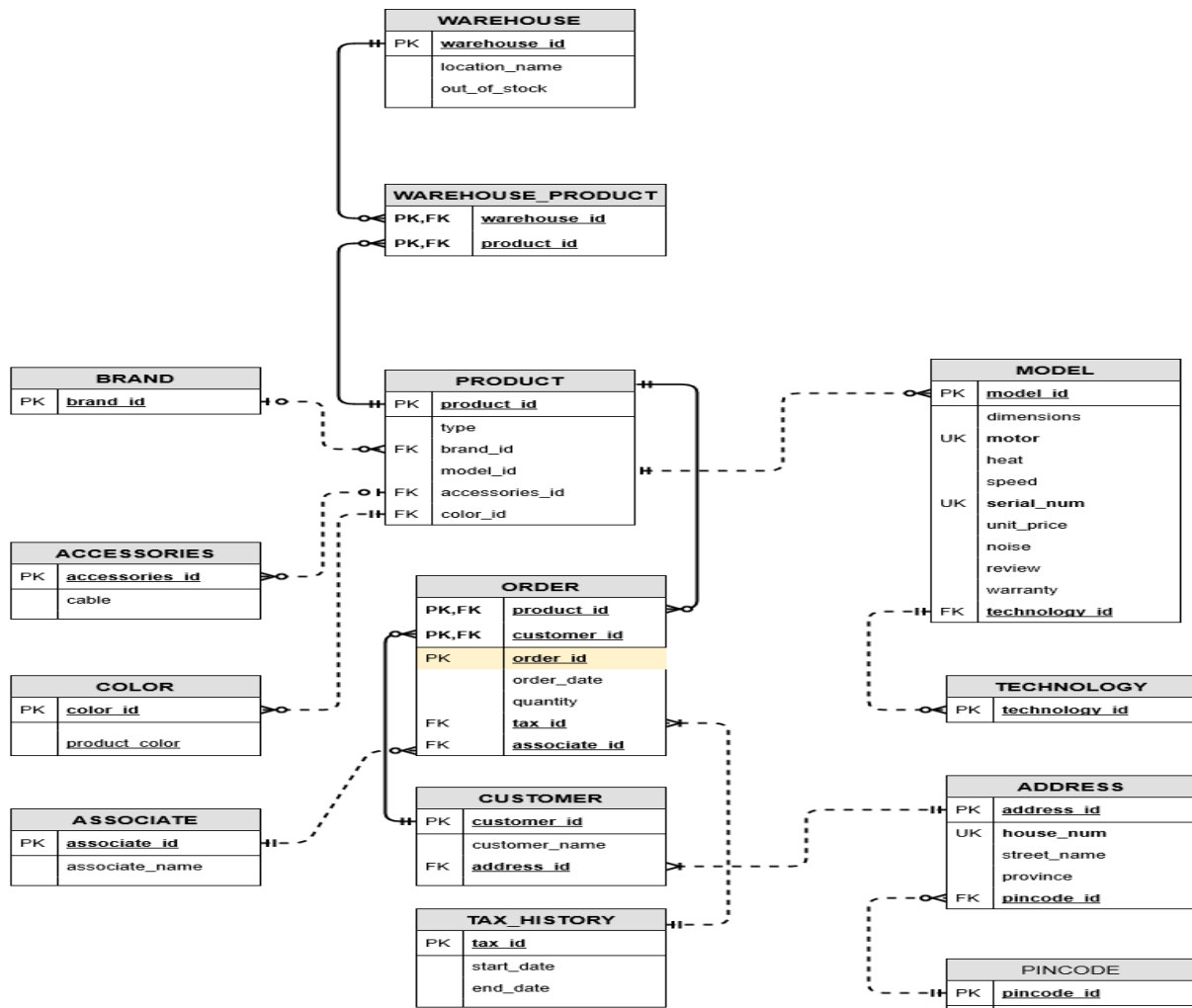
Each **TECHNOLOGY** must have one and only one **MODEL**
 Each **MODEL** may consist of zero, one or more **TECHNOLOGY**

Each **ORDER** must have one and only one **TAX_HISTORY**
 Each **TAX_HISTORY** must have one and only one **ORDER**

Each **WAREHOUSE** may have zero one or more **PRODUCT**
 Each **PRODUCT** may have zero, one or more **WAREHOUSE**

Each **ASSOCIATE** may have one, zero or more **ORDER**
 Each **ORDER** must have one and only one **ASSOCIATE**

3.2 ER Diagram with resolved many-to-many Relationship



Each **PRODUCT** **may** have zero or one **BRAND**
 Each **BRAND** **may** have zero, one or more **PRODUCT**
 Each **PRODUCT** **may** be made by zero, one or more **MODEL**
 Each **MODEL** **must** make one and only one **PRODUCT**
 Each **PRODUCT** **may** consist of zero or one **ACCESSORIES**
 Each **ACCESSORIES** **may** have zero, one or more **PRODUCT**
 Each **PRODUCT** **may** be made of zero, one or more **COLOR**
 Each **COLOR** **must** be for one and only one **PRODUCT**
 Each **PRODUCT** **may** have zero, one or more **ORDER**
 Each **ORDER** **must** consist of one and only one **PRODUCT**
 Each **CUSTOMER** **may** have zero, one or more **ORDER**
 Each **ORDER** **must** be of one and only one **CUSTOMER**
 Each **CUSTOMER** **must** consist of one and only one **ADDRESS**
 Each **ADDRESS** **must** have one or more **CUSTOMERS**
 Each **ADDRESS** **must** have one and only one **PINCODE**
 Each **PINCODE** **may** have zero, one or more **ADDRESS**
 Each **TECHNOLOGY** **must** have one and only one **MODEL**
 Each **MODEL** **may** consist of zero, one or more **TECHNOLOGY**
 Each **ORDER** **must** have one and only one **TAX_HISTORY**
 Each **TAX_HISTORY** **must** have one and only one **ORDER**
 Each **PRODUCT** **may** have one, zero or more **WAREHOUSE_PRODUCT**
 Each **WAREHOUSE_PRODUCT** **must** have one and only one **PRODUCT**
 Each **WAREHOUSE** **may** have zero, one or more **WAREHOUSE_PRODUCT**
 Each **WAREHOUSE_PRODUCT** **must** have one and only one **WAREHOUSE**
 Each **ASSOCIATE** **may** have one, zero or more **ORDER**
 Each **ORDER** **must** have one and only one **ASSOCIATE**

4. Relational (physical) Model

PRODUCT				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	product_id	numeric	7,2
	o	type	varchar	50
fk	*	Brand_id	numeric	7,2
fk	*	Model_id	numeric	7,2
fk	*	Accessories_id	numeric	7,2
fk	*	Color_id	numeric	7,2

ORDER				
Key Type	Optionality	Column Name	Data Type	Length
pk/fk	*	product_id	numeric	7,2
pk/fk	*	customer_id	numeric	7,2
fk	*	order_id	varchar	50
	o	order_date	varchar	50
	o	quantity	numeric	7,2
fk	*	tax_id	numeric	7,2
fk	*	associate_id	numeric	7,2

WAREHOUSE				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	warehouse_id	numeric	7,2
		location_name	varchar	50
		out_of_stock	varchar	50

WAREHOUSE_PROJECT				
Key Type	Optionality	Column Name	Data Type	Length
pk/fk	*	warehouse_id	Varchar	50
Pk/fk	*	product_id	numeric	7,2

BRAND				
Key Type	Optionality	Column Name	Data Type	Length
Pk	*	brand_id	varchar	50

ACCESSORIES				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	accessories_id	numeric	7,2
	o	cable	varchar	50

COLOR				
Key Type	Optionality	Column Name	Data Type	Length
Pk	*	color_id	Varchar	50
	o	Product_color	Varchsr	50

ASSOCIATE				
Key Type	Optionality	Column Name	Data Type	Length
Pk	*	Associate_id	Varchar	50
		Associate_name	Varchar	50

CUSTOMER				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	customer_id	Varchar	50
	o	customer_name	Varchar	50
fk	*	address_id	Varchar	50

MODEL				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	model_id	Varchar	50
	o	dimensions	Decimal	3.2
uk	*	motor	Varchar	50
	o	speed	Varchar	50
uk	*	serial_num	Varchar	50
	o	unit_price	Decimal	3.2
	o	noise	Varchar	50
	o	review	Varchar	50
	o	warranty	Varchar	50
fk	*	technology_id	Numeric	7,2

TECHNOLOGY				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	technology_id	numeric	7,2

ADDRESS				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	Address_id	numeric	7,2
uk	*	house_num	Numeric	7,2
	o	street_name	Varchar	50
	o	province	Varchar	50
fk	*	pincode_id	varchar	50

PINCODE				
Key Type	Optionality	Column Name	Data Type	Length
pk	*	pincode_id	varchar	50

5. Business Rules

Table	Column Name	Data Type	Business Rule
WAREHOUSE_PROJECT	warehouse_id	Varchar	Pk/fk NOT NULL
	product_id	numeric	Pk/fk NOT NULL

Table	Column Name	Data Type	Business Rule
BRAND	brand_id	varchar	PK DEFAULT numeric

Table	Column Name	Data Type	Business Rule
PRODUCT	product_id	numeric	Pk NOT NULL
	type	varchar	DEFAULT infrared
	Brand_id	numeric	Fk NOT NULL
	Model_id	numeric	Fk NOT NULL
	Accessories_id	Numeric	Fk NOT NULL
	Color_id	Numeric	Fk

Table	Column Name	Data Type	Business Rule
ORDER	product_id	numeric	pk/fk NOT NULL
	customer_id	numeric	pk/fk NOT NULL
	order_id	varchar	Fk NOT NULL
	order_date	varchar	NOT NULL
	quantity	numeric	NOT NULL
	tax_id	numeric	Fk NOT NULL
	associate_id	numeric	Fk NOT NULL

Table	Column Name	Data Type	Business Rule
ACCESSORIES	accessories_id	Numeric	PK DEFAULT small
	cable	Varchar	NOT NULL

Table	Column Name	Data Type	Business Rule
WAREHOUSE	warehouse_id	Numeric	Pk NOT NULL
	location_name	Varchar	NOT NULL
	out_of_stock	Varchar	NOT NULL

Table	Column Name	Data Type	Business Rule
COLOR	color_id	Varchar	Pk NOT NULL
	Product_color	Varchar	NOT NULL

Table	Column Name	Data Type	Business Rule
ASSOCIATE	Associate_id	Varchar	Pk DEFAULT small
	Associate_name	Varchar	NOT NULL

Table	Column Name	Data Type	Business Rule
CUSTOMER	customer_id	Varchar	Pk NOT NULL
	customer_name	Varchar	NOT NULL
	address_id	Varchar	Fk NOT NULL

Table	Column Name	Data Type	Length
MODEL	model_id	Varchar	Pk NOT NULL
	dimensions	Decimal	NOT NULL
	motor	Varchar	Uk CHECK motor < 2000 watt
	speed	Varchar	NOT NULL
	serial_num	Varchar	Uk NOT NULL
	unit_price	Decimal	CHECK Unit_price>0
	noise	Varchar	NOT NULL
	review	Varchar	NOT NULL
	warranty	Varchar	NOT NULL
	technology_id	Numeric	Fk NOT NULL

Table	Column Name	Data Type	Business Rule
TECHNOLOGY	technology_id	Numeric	Pk NOT NULL

Table	Column Name	Data Type	Length
ADDRESS	Address_id	numeric	PK NOT NULL
	house_num	Numeric	UK DEFAULT numeric
	street_name	Varchar	NOT NULL
	province	Varchar	DEFAULT ontario
*	pincode_id	varchar	NOT NULL

Table	Column Name	Data Type	Business Rule
PINCODE	pincode_id	varchar	Pk NOT NULL