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ID - C0837117

Product- Drills

Term Project
Nitro Drills

Database Design & SQL

Faculty – Jim Cooper

Term – Fall

CONTENTS

Company Description

1.1 Company Name:

Nitro Drills

1.2 Company Overview:

Nitro Drills was establish in 2016 with the goal to deliver tools necessary in several works maintaining the quality, durability and lowest price possible to the customers. At first we were named 'Nitro Tools'. But then as the sales growth in drills were much more than other products, we focused on just only one product to deliver the best drills possible to our customers.

Now we are known as one of the best drills seller in the country. We have drills of the best price range and functionality and our drills are particularly known for durability. We have several brands in our collection. We focus on customer satisfaction more than anything. We believe that customers are always right.

1.3 Product:

Drills

1.4 Product Attribute:

Attributes	Sample Data
Product Id (UK)	12345
Model Number	58736
Product Name	Black & Decker Electronic Drill
Assembly Required	No
Batteries Required	Yes
Batteries Included	Yes
Manufacturer	JAKKS Pacific
Stock	100
Product Dimension	5.08 x 21.29 x 24.13 cm;
Weight	900 gm
Color	Yellow
Warranty	2 Years

Customer Sale Invoice

2.1 Invoice:

Nitro Drills

437 Patterson Street
Toronto, ON M1K 5V5
437-123-3098

Invoice of:
Nicole Coleman
53 Silvio Ave,
Sarnia, ON, M1L 2K3
237-228-0291

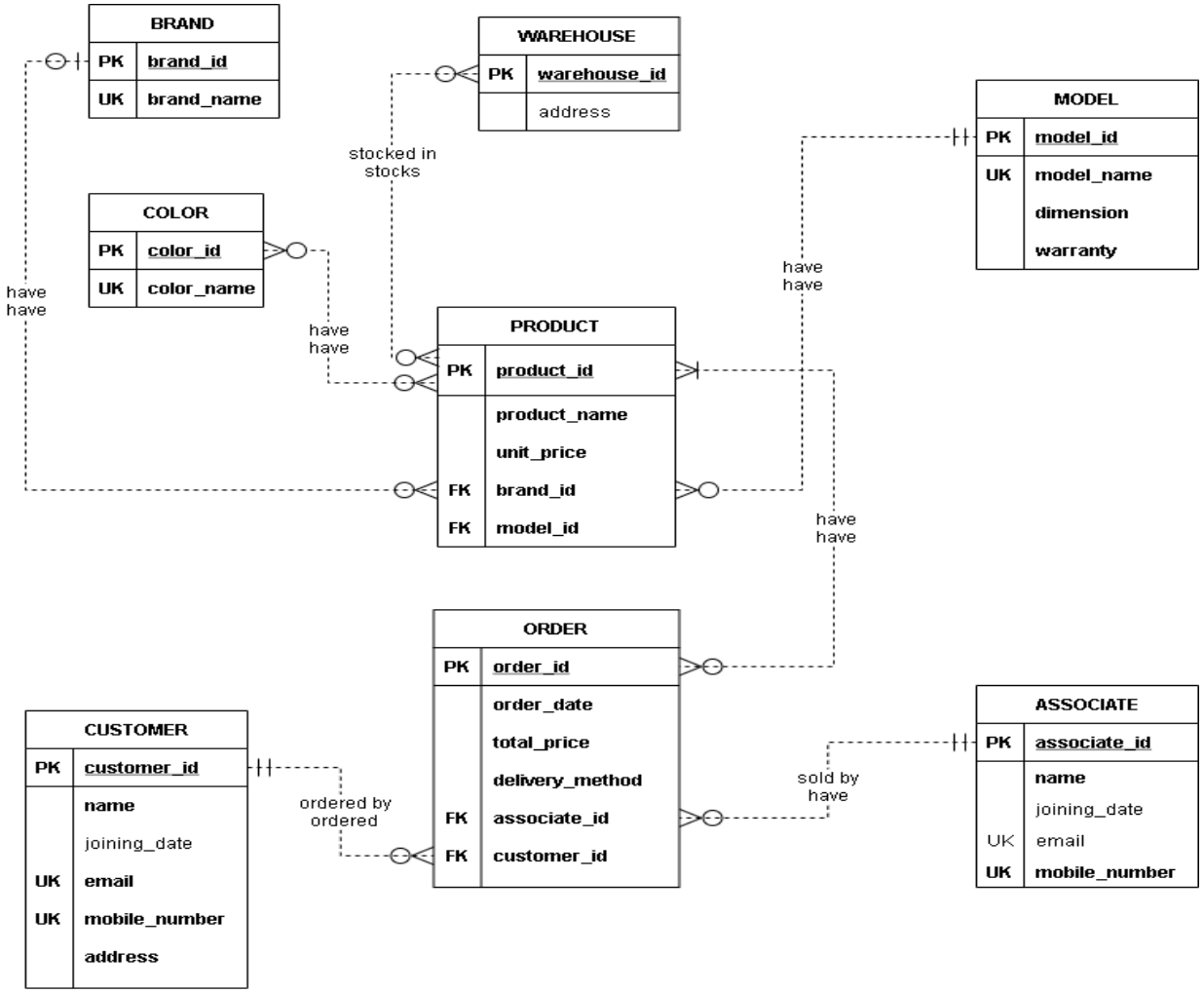
Invoice No: 304852
Customer ID: 234345
Date: 22.10.2021
Payment: Cash on Delivery
Delivery Method: Home Delivery

PRODUCT ID	MODEL	QTY	BRAND	Color	UNIT PRICE	EXTENDED PRICE
345334	345-V	1	Black Decker	Black	$99.99	$199.98
567453	MK-234	2	DEWALT	Red	$100.00	$200.00
345346	SLR-2	1	BOSCH	Yellow	$89.99	$89.99
456345	232-SV	3	WO	Black	$120.00	$360.00
870678	MARK-2	1	Craftsman	Navy	$98.99	$98.99

Sub-Total	$948.96
Tax	$49.00
Total	$997.96

Entity Relationship Diagrams

3.1 ER Diagram (With M:M):



Each **PRODUCT** may have zero or one **BRAND**
Each **BRAND** may have zero, one or multiple **PRODUCT**s

Each **PRODUCT** must have one and only one **MODEL**
Each **MODEL** may have zero, one or multiple **PRODUCT**s

Each **PRODUCT** may be stocked in zero, one or multiple **WAREHOUSE**
Each **WAREHOUSE** may stock zero, one or multiple **PRODUCT**s

Each **PRODUCT** may have zero, one, or multiple **COLOR**
Each **COLOR** may have zero, one or multiple **PRODUCT**s

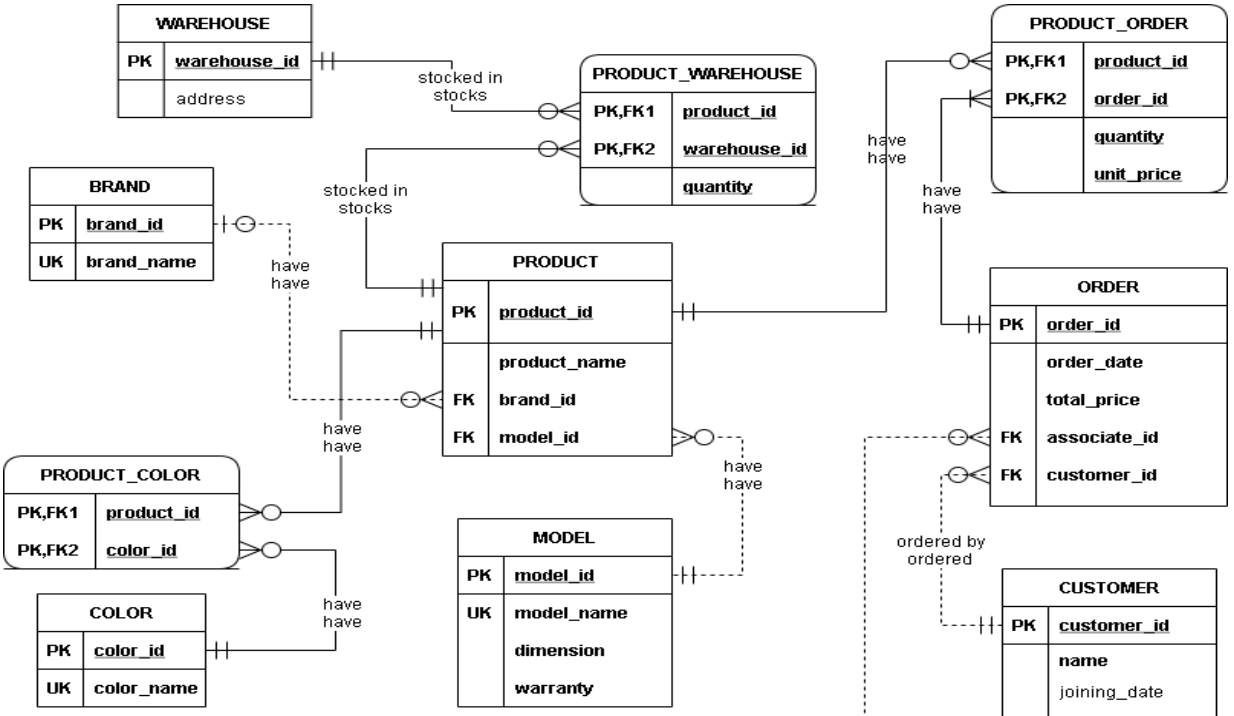
Each **PRODUCT** may have zero, one or multiple **ORDER**s
Each **ORDER** may have one or multiple **PRODUCT**s

Each **CUSTOMER** may have zero, one or multiple **ORDER**s
Each **ORDER** must be ordered by one and only one **CUSTOMER**

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

Entity Relationship Diagrams

3.2 ER Diagram (Without M:M):



Each **PRODUCT** may have zero or one **BRAND**
Each **BRAND** may have zero, one or multiple **PRODUCT**s

Each **PRODUCT** must have one and only one **MODEL**
Each **MODEL** may have zero, one or multiple **PRODUCT**s

Each **PRODUCT** may be stocked in zero, one or multiple **PRODUCT_WAREHOUSE**
Each **PRODUCT_WAREHOUSE** must stock one and only one **PRODUCT**

Each **WAREHOUSE** may stock zero, one or multiple **PRODUCT_WAREHOUSE**
Each **PRODUCT_WAREHOUSE** must be in one and only one **WAREHOUSE**

Each **PRODUCT** may have zero, one or multiple **PRODUCT_COLOR**
Each **PRODUCT_COLOR** must be in one and only one **PRODUCT**

Each **COLOR** may have zero, one or multiple **PRODUCT_COLOR**
Each **PRODUCT_COLOR** must be in one and only one **COLOR**

Each **PRODUCT** may have zero, one or multiple **PRODUCT_ORDER**s
Each **PRODUCT_ORDER** must have one and only one **PRODUCT**

Each **ORDER** may have one or multiple **PRODUCT_ORDER**s
Each **PRODUCT_ORDER** must have one and only one **ORDER**

Each **CUSTOMER** may have zero, one or multiple **ORDER**s
Each **ORDER** must be ordered by one and only one **CUSTOMER**

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

Un-identifying Relation ---------

Identifying Relation ———

Relational (Physical) Model

PRODUCT				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	product_id	INTEGER	
	*	product_name	VARCHAR	30
FK	*	brand_id	INTEGER	
FK	*	model_id	INTEGER	

MODEL				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	model_id	INTEGER	
UK	*	model_name	VARCHAR	30
	*	dimension	VARCHAR	50
	*	warranty	INTEGER	

ORDER				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	order_id	INTEGER	
	*	order_date	DATE	
	*	total_price	DECIMAL	5,2
FK	*	associate_id	INTEGER	
FK	*	customer_id	INTEGER	

CUSTOMER				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	customer_id	INTEGER	
	*	name	VARCHAR	30
	0	joining_date	DATE	
UK	0	email	VARCHAR	50
UK	*	mobile_number	VARCHAR	10
	*	address	VARCHAR	150

WAREHOUSE				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	warehouse_id	INTEGER	
	*	address	VARCHAR	150

Relational (Physical) Model

ASSOCIATE				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	associate_id	INTEGER	
	*	name	VARCHAR	30
	0	joining_date	DATE	
UK	0	Email	VARCHAR	30
UK	*	mobile_num	VARCHAR	10

PRODUCT_WAREHOUSE				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK,FK	*	warehouse_id	INTEGER	
PK,FK	*	product_id	INTEGER	
	*	quantity	INTEGER	

PRODUCT_ORDER				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK,FK	*	product_id	INTEGER	
PK,FK	*	order_id	INTEGER	
	*	quantity	INTEGER	
	*	unit_price	DECIMAL	(5,2)

BRAND				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	brand_id	INTEGER	
UK	*	brand_name	VARCHAR	30

COLOR				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK	*	color_id	INTEGER	
UK	*	color_name	VARCHAR	30

PRODUCT_COLOR				
Key Type	**Optionality**	**Column Name**	**Datatype**	**Length**
PK,FK	*	product_id	INTEGER	
PK,FK	*	color_id	INTEGER	

Relational Schema

PRODUCT(**project_id**, product_name, **brand_id**, **model_id**)
FK brand_id -> BRAND
FK model_id -> MODEL

MODEL(**model_id**, model_name, dimension, warranty)

ORDER(**order_id**, order_date, total_price, **associate_id**, **customer_id**)
FK associate_id -> ASSOCIATE
FK customer_id -> CUSTOMER

CUSTOMER(**customer_id**, customer_name, joining_date, email, mobile_number, address)

WAREHOUSE(**warehouse_id**, address)

ASSOCIATE(**associate_id**, name, joining_date, email, mobile_num)

PRODUCT_WAREHOUSE(**product_id**, **warehouse_id**, quantity)
FK product_id -> PRODUCT
FK warehouse_id -> WAREHOUSE

PRODUCT_ORDER(**product_id**, **order_id**, quantity, unit_price)
FK product_id -> PRODUCT
FK order_id -> ORDER

BRAND(**brand_id**, brand_name)

COLOR(**color_id**, color_name)

PRODUCT_COLOR(**product_id**, **color_id**)
FK leader_id -> EMPLOYEE