

Invoice Form

Invoice ID: 101

Items title: Accessories

Invoice Name: Invoice #001

Invoice Details: Company Accessories and services

Invoice Date: 11/4/2018

Derived total cost: \$200

Order Details

Order ID: 1234

Order Placed: Accessories

Order Date: 12/6/2018

Order Details: Accessories

Customer Details

First Name: Brown

Last Name: Roy

Address: 567 Street Newyork

City: NewYork

Country: USA

Product ID	Product name	Product price	Product quantity	Product size	Product descriptions
1110	Accessories	\$450	10	43 in	Good quality
1111	Accessories	\$650	5	43 in	Good quality
1112	Accessories	\$450	10	43 in	Good quality
1113	Accessories	\$650	5	43 in	Good quality

ONF

InvoiceID	InvoiceNa	InvoiceDate	Items_title	InvoiceDetail	Derived_t	OrderID	OrderPlac	OrderDate	OrderDet:	FirstName	LastName	Address	City	Country	ProductID	Product_r	Product_r	Product_c	Product_s	Product_descriptions
101	Invoice #0	11/4/2018	Accessories	Company Acc	\$200	1234	Accessori€	12/6/2018	Accessori€	Brown	Roy	567 Street	NewYork	USA	1110	Accessori€	\$450	10	43 in	Good quality

1NF

InvoiceID	InvoiceNa	InvoiceDate	Items_title	InvoiceDetail	Derived_t	OrderID	OrderPlac	OrderDate	OrderDet:	FirstName	LastName	Address	City	Country	ProductID	Product_r	Product_r	Product_c	Product_s	Product_descriptions
101	Invoice #0	11/4/2018	Accessories	Company Acc	\$200	1234	Accessori€	12/6/2018	Accessori€	Brown	Roy	567 Street	NewYork	USA	1110	Accessori€	\$450	10	43 in	Good quality
101	Invoice #0	11/4/2018	Accessories	Company Acc	\$200	1235	Accessori€	12/6/2018	Accessori€	Brown	Roy	567 Street	NewYork	USA	1111	Accessori€	\$450	10	43 in	Good quality
101	Invoice #0	11/4/2018	Accessories	Company Acc	\$200	1236	Accessori€	12/6/2018	Accessori€	Brown	Roy	567 Street	NewYork	USA	1112	Accessori€	\$450	10	43 in	Good quality

InvoiceID, OrderID and ProductID together identified as a Composite key in 1NF (will be used to split the table in 2NF). This will eliminate the repeating groups from the Invoice table.

2NF

Invoice Information Table

Primary key

InvoiceID	InvoiceNa	InvoiceDate	Items_title	InvoiceDetail	Derived_total_cost				
101	Invoice #0	11/4/2018	Accessories	Company Acc	\$200				
Composite Key			Invoice Order Information Table						
InvoiceID	OrderID(PK)	OrderPlaced	OrderDate	OrderDet:	FirstName	LastName	Address	City	Country
101	1234	Accessories	12/6/2018	Accessori€	Brown	Roy	567 Street New	NewYork	USA
101	1235	Accessories	12/6/2018	Accessori€	Brown	Roy	567 Street New	NewYork	USA
101	1236	Accessories	12/6/2018	Accessori€	Brown	Roy	567 Street New	NewYork	USA
			Order Information Table						
OrderID(P	OrderPlaced	OrderDate	OrderDetails	FirstName	LastName	Address	City	Country	
1234	Accessories	12/6/2018	Accessories1:	Brown	Roy	567 Street New	York	USA	
1235	Accessories	12/6/2018	Accessories1:	Brown	Roy	567 Street New	York	USA	
1236	Accessories	12/6/2018	Accessories1:	Brown	Roy	567 Street New	York	USA	
			Product Information Table						
ProductID	Product_nam	Product_price	Product_qua	Product_s	Product_descriptions				
1110	Accessories	\$450	10	43 in	Good quality				
1111	Accessories	\$450	10	43 in	Good quality				
1112	Accessories	\$450	10	43 in	Good quality				

Composite key

Invoice Product Information Table

InvoiceID	ProductID	Product_nan	Product_price	Product_qua	Product_s	Product_descriptions
101	1110	Accessories	\$450	10	43 in	Good quality
101	1111	Accessories	\$450	10	43 in	Good quality
101	1112	Accessories	\$450	10	43 in	Good quality

Here orderID, ProductID and InvoiceID are composite key
invoice key is primary key

3NF

Customer Name and other associated info - recognised as Transitive in the Order info table and can be pulled out as a separate table in 3NF

Primary key

Invoice Information Table

InvoiceID	InvoiceNa	InvoiceDate	Items_title	InvoiceDetail	Derived_total_cost
101	Invoice #0	11/4/2018	Accessories	Company Acc	\$200
Order Information Table					
OrderID(PK)	OrderPlaced	OrderDate	OrderDet:	CustID(FK)	
1234	Accessories	12/6/2018	Accessori€	1	
1235	Accessories	12/6/2018	Accessori€	1	
1236	Accessories	12/6/2018	Accessori€	1	
Customer Information Table					
CustID(PK)	FirstName	LastName	Address	City	Country
1	Brown	Roy	567 Street	NewYork	USA
Product Information Table					
ProductID	Product_nam	Product_price	Product_qua	Product_s	Product_descriptions
1110	Accessories	\$450	10	43 in	Good quality
1111	Accessories	\$450	10	43 in	Good quality
1112	Accessories	\$450	10	43 in	Good quality

Composite key

Invoice Product Information Table

InvoiceID	ProductID	Product_nam	Product_price	Product_qua	Product_s	Product_descriptions
101	1110	Accessories	\$450	10	43 in	Good quality
101	1111	Accessories	\$450	10	43 in	Good quality
101	1112	Accessories	\$450	10	43 in	Good quality

ERD

