

Normalization of relations

Disclaimer: Not every single relation is in all the forms specified in the task. Many of them are technically in 2NF and thus just need to remove the transitive dependencies.

Order 2NF

Order					
OrderID	UserID	OrderDate	TotalPrice	OrderStatusID	PaymentConfirmedDate
1	1	1/10/23	1299.99	1	1/10/23
2	2	2/10/23	349.99	2	2/10/23
3	3	3/10/23	149.99	3	3/10/23

Order 3NF, BCNF

Order				Dates	
OrderID	UserID	TotalPrice	OrderStatusID	OrderDate	PaymentConfirmedDate
1	1	1299.99	1	1/10/23	1/10/23
2	2	349.99	2	2/10/23	2/10/23
3	3	149.99	3	3/10/23	3/10/23

Payment 2NF

Payment						
PaymentID	OrderID	PaymentMethod	Amount	PaymentDate	PaymentStatusID	TransactionID
1	1	Credit Card	1299.99	1/10/23	1	TX100001
2	2	PayPal	349.99	2/10/23	1	TX100002
3	3	PayPal	125.49	10/10/23	2	TX100003

Payment 3NF, BCNF

Payment				PaymentDetails		
PaymentID	OrderID	PaymentMethod	Amount	PaymentDate	PaymentStatusID	TransactionID
1	1	Credit Card	1299.99	1/10/23	1	TX100001
2	2	PayPal	349.99	2/10/23	1	TX100002
3	3	PayPal	125.49	10/10/23	2	TX100003

Wishlist 3NF, BCNF

Wishlist					
WishlistID	UserID	ProductID	AddedDate	Name	
1	1	1	5/10/23	Holiday Gifts	
2	2	2	8/1/24	Gamer Wishlist	
3	3	3	2/3/24	Birthday Wishlist	

OrderItem 2NF

OrderItem			
OrderID	ProductID	Quantity	Subtotal
1	5	1	1999.99
2	11	1	349.99

OrderItem 3NF, BCNF

OrderItem		ItemDetails	
OrderID	ProductID	Quantity	Subtotal
1	5	1	1999.99
2	11	1	349.99

ShippingDetail 1NF

ShippingDetail											
ShippingID	OrderID	ReceipientName	AddressID	ShippingMethod	ShippingCost	ExpectedDeliveryDate	TrackingNumber	IsDelivered	DeliveryDate	BaseCost	WeightSurcharge
1	1	Alice	1	FedEX	10	5/10/23	TRACK1001	0	NULL	10	2
2	2	Bob Smith	2	UPS	5	4/10/23	TRACK1002	1	4/10/23	5	0.5

ShippingDetail 2NF

ShippingDetail					
ShippingID	OrderID	ReceipientName	AddressID	ShippingMethod	TrackingNumber
1	1	Alice	1	FedEX	TRACK1001
2	2	Bob Smith	2	UPS	TRACK1002

ShipmentDetail				
ShippingCost	IsDelivered	DeliveryDate	BaseCost	WeightSurcharge
10	0	NULL	10	2
5	1	4/10/23	5	0.5

ShippingDetail 3NF, BCNF

ShippingDetail					
ShippingID	OrderID	ReceipentName	AddressID	ShippingMethod	TrackingNumber
1	1	Alice	1	FedEX	TRACK1001
2	2	Bob Smith	2	UPS	TRACK1002

DeliveryStatus	
IsDelivered	DeliveryDate
0	NULL
1	4/10/23

ShipmentCosts		
ShippingCost	BaseCost	WeightSurcharge
10	10	2
5	5	0.5

OrderStatus 2NF

OrderStatus				
OrderStatusID	StatusName	Description	CreatedAt	UpdatedAt
1	Placed	Order has been placed and is waiting processing	14/04/2024 1:00:03	14/04/2024 1:00:03
2	Shipped	Order has been shipped to the customer	16/04/2024 11:45	18/04/2024 10:25
3	Delivered	Order has been delivered	15/03/2024 14:46	22/03/2024 10:05

OderStatus 3NF, BCNF

OrderStatus			StatusDetails		
OrderStatusID	CreatedAt		StatusName	Description	UpdatedAt
1	14/04/2024	1:00:03	Placed	Order has been placed and is waiting processing	14/04/2024 1:00:03
2	16/04/2024	11:45	Shipped	Order has been shipped to the customer	18/04/2024 10:25
3	15/03/2024	14:46	Delivered	Order has been delivered	22/03/2024 10:05

Product

Product											
ProductID	Name	Description	Price	StockQuantity	BrandID	CategoryID	ImageURL	SKU	Weight	Dimensions	IsActive
1	Samsung Galaxy S21	High end smartphone	799.99	150		1	https://example.com/galaxys21.png	SKU9001	0.17	151.7 x 71.2 x 7.9 mm	1
2	iPhone 13	Lates model with A15 bionic chip and advanced photography features	899.99	100		2	https://example.com/ihone13.png	SKU9002	0.17	146.7 x 71.5 x 7.65 mm	1
3	HP Spectre x360	Veratile laptop with 2-in-1 design and touchscreen	1200	75		4	https://example.com/hpspectre.png	SKU9003	1.3	306 x 194 x 17 mm	1
4	MacBook Pro 14	Powerful laptop with M1 pro chip, designed for professionals	1999.99	50		2	https://example.com/macbookpro14.png	SKU9004	1.6	312 x 221 x 15.5 mm	1
5	Apple iPad Pro	High-performance tablet with Liquid Retina display	1099	85		2	https://example.com/ipadpro.png	SKU9005	0.47	247.6 x 178.5 x 5.9 mm	1

Category

Category		
CategoryID	Name	Description
1	Smartphones	Mobile phones with advanced features and functionalities
2	Laptops	Portable personal computers suitable for mobile use
3	Tablets	Portable computing devices with touchscreen interfaces
4	Cameras	Devices for capturing phtoographs and videos
5	Home Appliances	Electronic devices intended for everyday home use
6	Accessories	Additional gadgets and devices that complement other electronics

Tax

Tax			
TaxID	Description	TaxPercent	ApplicableToCategoryID
1	Standard electronics Tax	15	1
2	Luxury Electronics Tax	20	2
3	Reduced Tax for Tablets	5	3
4	Camera Tax	18	4
5	Home Appliance Tax	10	5
6	Accessory Tax	12	6

Brand

Brand		
BrandID	Name	Description
1	Samsung	South Korean multinational electronics company known for its smartphones and consumer electronics
2	Apple	American multinational technology company known for its innovative consumer electronics
3	Sony	Japanese multinational conglomerate known for its electronics, especially in photography and gaming
4	HP	American multinational information technology company known for its laptops and printers
5	Canon	Japanese multinational corporation specialized in the manufacture of imaging and optical products, including cameras
6	Bosch	Leading global supplier of technology and services in the areas of Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology

User

User								
UserID	Username	Password	Email	FirstName	LastName	ProfilePicURL	DateOfBirth	LastLogin
1	aliceblue	hashed_password_123	alice.blue@example.com	Alice	Blue	https://example.com/aliceblue.png	6/1/90	4/14/24 10:58
2	bobsmith	hashed_password_456	bob.smith@example.com	Bob	Smith	https://example.com/bobsmith.png	8/15/85	4/14/24 10:58

Address

Address								
AddressID	UserID	Street	City	State	PostalCode	Country	IsDefault	Addresstype
1	1	Karl Johans gate 23	Oslo	Oslo	0162	Norway	1	Shipping
2	2	Nedre Bakklandet 158	Trondheim	Trøndelag	7014	Norway	1	Billing