

Unnormalized

Name	Address	Phone	Purchases(ArtistId, ArtistName, ArtTitle, PurchaseDate, Price)
Jackson, Elizabeth	123 - 4th Avenue Fonthill ON L3J4S4	(206) 284-6783	Carol Channing, Laugh with Teeth, 9/17/2000, \$7000.00 Dennis Frings, South toward Emerald Sea, 5/11/2000, \$1800.00 Carol Channing, At the Movies, 2/14/2002, \$5550.00 Dennis Frings, South toward Emerald Sea, 7/15/2003, \$2200.00
Smith, John	123 Main Street New York, NY 10001	(123) 867-5309	Rick Steves, Travels through Europe, 9/01/2002, \$1050.00

Second Normal Form (2NF)

Customers				
CustomerID (PK)	Name	Address	Phone	
1	Jackson, Elizabeth	123 - 4th Avenue Fonthill ON L3J4S4	(206) 284-6783	
2	Smith, John	123 Main Street New York, NY 10001	(123) 867-5309	
Customer Purchases				
PurchaseID (PK)	CustomerID (FK)	ArtID (FK)	Purchase Date	Price
1	1	1	9/17/2000	\$7,000.00
2	1	2	5/11/2000	\$1,800.00
3	1	3	2/14/2002	\$5,550.00
4	1	2	7/15/2003	\$2,200.00
5	2	4	9/1/2002	\$1,050.00
Art				
ArtID (PK)	Artist Name	Title		
1	Carol Channing	Laugh with Teeth		
2	Dennis Frings	South toward Emerald Sea		
3	Carol Channing	At the Movies		
4	Rick Steves	Travels through Europe		
2NF				
In 2nd Normal Form, the table must already be in 1NF.				
Any Non-key Attribute must be dependent on the primary key.				

Third Normal Form (3NF)

Customers					
CustomerID (PK)	Name	Address	Phone		
1	Jackson, Elizabeth	123 - 4th Avenue Fonthill ON L3J4S4	(206) 284-6783		
2	Smith, John	123 Main Street New York, NY 10001	(123) 867-5309		
Customer Purchases					
PurchaseID (PK)	CustomerID (FK)	ArtID (FK)	Purchase Date	Price	
1	1	1	9/17/2000	\$7,000.00	
2	1	2	5/11/2000	\$1,800.00	
3	1	3	2/14/2002	\$5,550.00	
4	1	2	7/15/2003	\$2,200.00	
5	2	4	9/1/2002	\$1,050.00	
Art					
ArtID (PK)	ArtistID (FK)	Title			
1	1	Laugh with Teeth			
2	2	South toward Emerald Sea			
3	1	At the Movies			
4	3	Travels through Europe			
Artist					
ArtistID (PK)	First Name	Last Name			
1	Carol	Channing			
2	Dennis	Frings			
3	Rick	Steves			
3NF					
In 3rd Normal Form, the table must already be in 2NF.					
There cannot be any transitive dependency between columns (e.g. in 2NF Artist Name was dependent on Artist Id which was dependent on ArtCode)					