

CLS-WRK

Third Normal form (3NfF)

- A rln must be in 2NF and No transitive dependency for no-key attributes.
- 3NF has to reduce the data duplication.

Example No: 1

UNF	1NF	2NF	3NF
<u>Project code</u> Project title project Manager Project budget Employee No. Employee Name Department Name Department No. Hourly Rate	<u>Project code</u> Project title Project Manager Project budget <u>Project code</u> Employee No. Employee Name Department No Department Name Hourly Rate	<u>Project code</u> Project title Project manager Project budget <u>Employee No.</u> Employee Name Department No. Department Name	<u>Project code</u> Project title Hourly Rate <u>Employee No.</u> Employee Name Department No <u>Department Name</u> Department No. <u>Project Code</u> Project title project Manager Project budget

Example No: 2

UNF	1NF = Remove redundancy	2NF = Partial department	3NF= remove transitive dependency
<u>Patient No.</u> Patient surname Patient Forename Ward No. Ward Name Prescription Date Drug date Drug name Dosage Length of treatment Drug code	<u>Patient No.</u> Patient surname Patient Forename Ward No. Ward Name <u>Patient No.</u> <u>Prescription Date</u> <u>Drug code</u> Drug date Drug name Dosage Length of treatment <u>Drug code</u> Drug name drug date	<u>Patient No.</u> Patient surname Patient Forename Ward No. Ward Name <u>Patient No.</u> <u>Prescription Date</u> Dosage Length of treatment <u>Drug code</u> Drug name	<u>Patient No.</u> Patient surname Patient Forename Ward no. <u>Ward no.</u> Ward name <u>Patient No.</u> <u>Prescription Date</u> Dosage Length of treatment <u>Drug code</u> Drug name drug date

UNF	1NF	2NF	3NF
Order No customer No customer Name customer Address Telephone No Depot No Depot Name Product no Product name Product Qty Product Price	<u>Order No</u> <u>customer No</u> <u>customer Name</u> <u>customer</u> <u>Address</u> <u>Telephone No</u> <u>Depot No</u> <u>Depot Name</u> <u>Product no</u> <u>Product name</u> <u>Product Qty</u> <u>Product Price</u>	<u>Order No</u> <u>customer No</u> <u>customer Name</u> <u>customer</u> <u>Address</u> <u>Telephone No</u> <u>Depot No</u> <u>Depot Name</u> <u>Product no</u> <u>Product name</u> <u>Product Price</u>	<u>Order No</u> <u>customer No</u> <u>depot no</u> <u>customer No</u> <u>customer name</u> <u>customer</u> <u>Address</u> <u>Telephone No</u> <u>Depot No</u> <u>Depot Name</u> <u>Order No</u> <u>Product no</u> <u>Product Qty</u> <u>Product no</u> <u>Product name</u> <u>Product Price</u>

UNF	1NF	2NF	3NF
Branch id	Branch id	Branch id	Branch id
Branch name	Branch name	Branch name	Branch name
Branch address	Branch address	Branch address	Branch manager
Post code	Post code	Post code	employee id
Town	Town	Town	Branch manager
country	Country	Country	surname
Employee id	Branch manager	Branch manager	Franchise owner
Employee F-name	employee id	employee id	name
Employee surname	Branch manager	Branch manager	id
Employee Ni No.	surname	surname	Franchise owner
Inventorybranch mana	Franchise owner	Franchise owner	tel.no
Item id	owner id	owner id	Franchise owner
Item name	Franchise owner	Franchise owner	start date
Item description	tel.no	tel.no	Post code
Unit price	Franchise owner	Franchise owner	Post code
No. in stock	start date	start date	Town address
Price+vat			Country
Category code	Branch id	Branch id	Town
Category description	Employee id	Employee id	
Supplier id	Employee f-name	Employee f-name	Employee id
Supplier name	Employee surname	Employee surname	Employee f-name
Branch manager employee id	Employee ni-name	Employee ni-name	Employee surname
Branch manager surname	Item id		Employee ni-name
Franchise owner name	Item name	Item id	
Franchise owner id	Item description	Item name	Item id
Franchise owner tel.no	Unit price	Item description	Item name
	No in stock	Unit price	Item description
	Price+vat	No in stock	Unit price
	Category code	Category code	No in stock
	Category description	Category description	Category code

Franchise start date	<p><u>Supplier id</u> Supplier Name</p> <p><u>Supplier id</u> Supplier Name</p> <p><u>Branch id</u> <u>Item id</u> <u>Employee id</u> <u>Supplier id</u> <u>Price+vat</u></p>	<p><u>Category code</u> Category description</p> <p><u>Supplier id</u> Supplier Name</p> <p><u>Branch id</u> <u>Item id</u> <u>Employee id</u> <u>Supplier id</u> <u>Price+vat</u></p>
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UNF	1NF	2NF	3NF
Order No	Order no	Customer id	Customer id
Order date	First name	First name	First name
Customer Id	Last name	Last name	Last name
Title	Address	Address	Telephone
First name	Town	Town	Post code
Last name	Country	Country	
Address	Post code	Post code	Post code
Town	Telephone	Telephone	Address
Country	Customer id		Town
Post code	Order date	Order No	Country
Telephone	Title	Order date	
Book id		Title	
Isbn	Order no		
Book title	Book id		Order No
Author	Isbn	Book id	Order date
Publisher	Book title	Isbn	Title
price	Author	Book title	
Qty	Publisher	Author	
	price	Publisher	Book id
	Qty	price	Isbn
			Book title
			Author
			Publisher
			price
		customer id	
		book id	
		order no	
		qty	
			order no
			customer id
			book id
			qty

UNF	1NF	2NF	3NF
<u>Customer</u>	<u>Customer</u>	<u>Customer</u>	<u>Customer</u>
<u>Acc.NO</u>	<u>Acc.NO</u>	<u>Acc.NO</u>	<u>Acc.NO</u>
Customer name	Customer name	Customer name	Customer name
Customer address	Customer address	Customer address	Customer address
Customer tel.no	Customer tel.no	Customer tel.no	Customer tel.no
Holiday references No.	Holiday references No.	<u>Holiday</u>	<u>Holiday</u>
Booking date	Booking date	<u>Reference no.</u>	<u>Reference no.</u>
Hotel name	Hotel name	Booking date	Hotel name
Holiday resort	Holiday resort	Hotel name	Holiday resort
Flight no		Holiday resort	
Departure airport			
Arrival airport			
Departure date	<u>Customer</u>		
Return date	<u>acc.no</u>		
	<u>Flight no</u>		
	Departure airport	<u>Flight no</u>	<u>Flight no</u>
	Arrival airport	Departure airport	Departure airport
	Departure date	Arrival airport	Arrival airport
	Return date	Departure date	Departure date
		Return date	Return date
		<u>Customer acc</u>	<u>Booking date</u>
		<u>no</u>	Customer acc.no
		<u>Holiday</u>	Holiday ref.no
		<u>reference.no</u>	Booking date
		<u>Flight no.</u>	