

# Phone Shop Management System



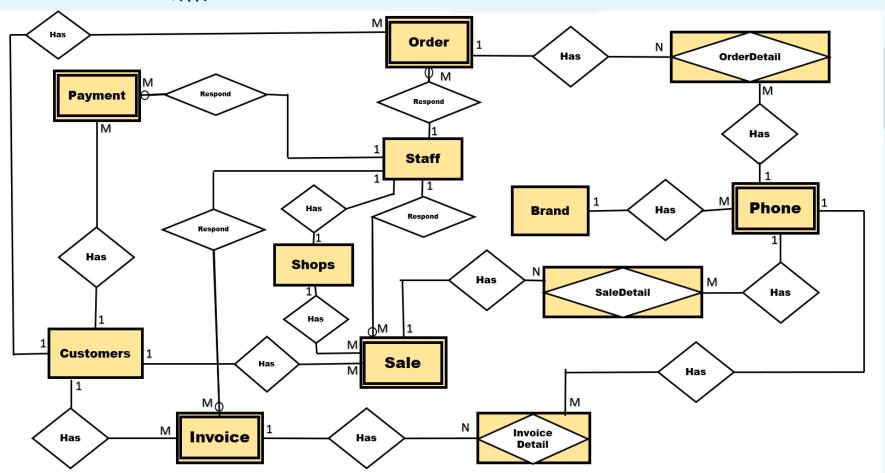
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# មាត៌កា:

Entity-Relationship Diagram	. Page 1
Normalisation	Page 2-3
តារាងទិន្នន័យ(Tables)	
Strong Entity Sets	Page 10
Weak Entity Sets	
ទំនាក់ទំនង Entity Sets	Page 12-14
Relationship Diagram	Page 15



# **Entity-Relationship Diagram**



# **Normalization**

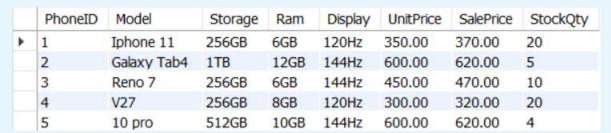
#### - តារាង Phones

	BrandName	Model	Storage	Ram	Display	UnitPrice	SalePrice	StockQty
•	Apple	Iphone 11	256GB	6GB	120Hz	350.00	370.00	20
	Samsung	Galaxy Tab4	1TB	12GB	144Hz	600.00	620.00	5
	Oppo	Reno 7	256GB	6GB	144Hz	450.00	470.00	10
	Vivo	V27	256GB	8GB	120Hz	300.00	320.00	20
	Oneplus	10 pro	512GB	10GB	144Hz	600.00	620.00	4

តារាងខាងលើនេះមានទម្រង់ជា 1NF(First Normal Form) ដូច្នេះយើងនឹងបំបែកតារាងPhones ខាងលើនេះជាពីរផ្សេងគ្នាក្នុងទម្រង់ 2NF(Second Normal Form) ។

#### 2NF(Second Normal Form)

#### - តារាង Phones



#### - តារាង Brands

	PhoneID	BrandName
١	1	Apple
	2	Vivo
	3	Oppo
	4	Samsung
	5	Oneplus

យើងបានបង្កើត Column ថ្មីមួយគឺ <u>PhonelD</u> ដែលជា Primary Key របស់ តារាង <u>Phones</u> ។ដូច្នេះ Field ទាំងអស់ក្នុងតារាងទី 1 មានលក្ខណ: Unique ដោយការប្រើ <u>PhonelD</u>។





## - <u>តារាងអាតិថិជន</u>(Customers):

	CustomerID	CusName	ContactNumber	Email
•	1	Kim Hean	011233444	hean123@gmail
	2	Thea Ra	011334444	raa123@gmail
	3	Reak Smey	011999999	Smey123@gmail
	4	Chor Von	012123456	von23@gmail
	5	Chan Trea	09999999	konkhmer123@gmail

Primary Key: CustomerID

## - <u>តារាងបុគ្គលិក</u>(Staffs):

			1 71							
	StaffID	FirstName	LastName	Sex	BirthDate	HiredDate	StaffAddress	E_ContactNumber	ShopID	StopWork
•	1	Ly	Ler	M	2000-10-28 00:00:00	2022-10-03 00:00:00	Tuek Thla st2004	011122334	1	1
	2	Phorn	Theara	M	2002-10-28 00:00:00	2022-11-03 00:00:00	Tuek Thla st2002	011342312	2	1
	3	Leo	Messi	M	1990-10-28 00:00:00	2021-10-03 00:00:00	Tuek Thla st2004	099122334	2	1
	4	Ronald	Dinho	M	1985-10-28 00:00:00	2023-03-10 00:00:00	Battambang	011122334	2	1
	5	Luch	Dynatt	M	2003-10-28 00:00:00	2019-10-03 00:00:00	Takeo	011122334	2	1

Primary Key: StaffID



# - <u>តារាងទិន្នន័យទូរស័ព្</u>ធ(Phones):

	PhoneID	Model	Storage	Ram	Display	UnitPrice	SalePrice	StockQty
•	1	Iphone 11	256GB	6GB	120Hz	350.00	370.00	20
	2	Galaxy Tab4	1TB	12GB	144Hz	600.00	620.00	5
	3	Reno 7	256GB	6GB	144Hz	450.00	470.00	10
	4	V27	256GB	8GB	120Hz	300.00	320.00	20
	5	10 pro	512GB	10GB	144Hz	600.00	620.00	4
			Б.	17	DI 11			

Primary Key: PhoneID

# - <u>តារាងបញ្ជាក់ម៉ាកនៃទូរស័ព្</u>ធ(Brands):

	PhoneID	BrandName	
٠	1	Apple	
	2	Vīvo	
	3	Oppo	Foreign Key: PhoneID
	4	Samsung	
	5	Oneplus	

#### - <u>តារាងហាង</u>(Shops):

	ShopID	Branch	PhoneNumber	Manager
١	1	Bak Tuk	012 89 98 89	Vorn Vuthy
	2	Tuek Thla St 2002	085 60 40 84	Seak Lim

Primary Key: ShopID

## - <u>តារាងការបង់ប្រាក់</u>(Payments):

	PaymentID	PayDate	CustomerID	StaffID	PaidAmount	Payment_Method
•	1	2023-06-25 00:00:00	3	2	893.00	Cash
	2	2023-06-12 00:00:00	2	4	1406.00	ABA
	3	2023-06-11 00:00:00	3	2	304.00	ABA
	4	2023-06-23 00:00:00	3	4	351.50	Cash

Primary Key: PaymentID

Foreign Key: StaffID & CustomerID

#### - <u>តារាឯកម្មង</u>(Orders):

	OrderID	CustomerID	Order_Date	StaffID
•	1	3	2023-06-25 00:00:00	2
	2	2	2023-06-12 00:00:00	4
	3	3	2023-06-11 00:00:00	2
	4	3	2023-06-23 00:00:00	4

Primary Key: OrderID

Foreign Key: CustomerID

# - <u>តារាងទិន្នន័យលម្អិតនៃការកម្មង</u>(OrderDetail):

	OrderID	PhoneID	Qty
•	1	3	2
	2	1	4
	3	4	1
	4	1	1

Foreign Key: OrderID & PhoneID

#### - <u>តារាងលក់</u>(Sales):

	SaleID	SaleDate	ShopID	CustomerID	StaffID
•	1	2023-06-25 00:00:00	2	3	2
	2	2023-06-12 00:00:00	2	2	4
	3	2023-06-11 00:00:00	2	3	2
	4	2023-06-23 00:00:00	2	3	4

Primary Key: SaleID

Foreign Key: CustomerID

& StaffID

## - <u>តារាងទិន្នន័យលម្អិតនៃការលក់</u> (SaleDetail):

	SaleID	PhoneID	SaleQty	Discount	Amount
•	1	3	2	5%	893.00
	2	1	4	5%	1406.00
	3	4	1	5%	304.00
	4	1	1	5%	351.50

Foreign Key: SaleID & PhoneID

#### - <u>តារាងវិក្ខុយបត្</u>រា(Invoices):

	InvoiceID	StaffID	CustomerID	TotalAmount
•	1	2	3	893.00
	2	4	2	1406.00
	3	2	3	304.00
	4	4	3	351.50

Primary Key: InvoiceID

Foreign Key: CustomerID

& StaffID

## - <u>តារាងទិន្នន័យលម្អិតនៃវិក្កយបត្រ</u> (InvoiceDetail):

	InvoiceID	PhoneID	ProductQty	SalePrice	Amount
•	1	3	2	620.00	893.00
	2	1	4	320.00	1406.00
	3	4	1	370.00	304.00
	4	1	1	370.00	351.50

Foreign Key: CustomerID & PhoneID



## **Strong Entity Sets**

Customers

Staffs

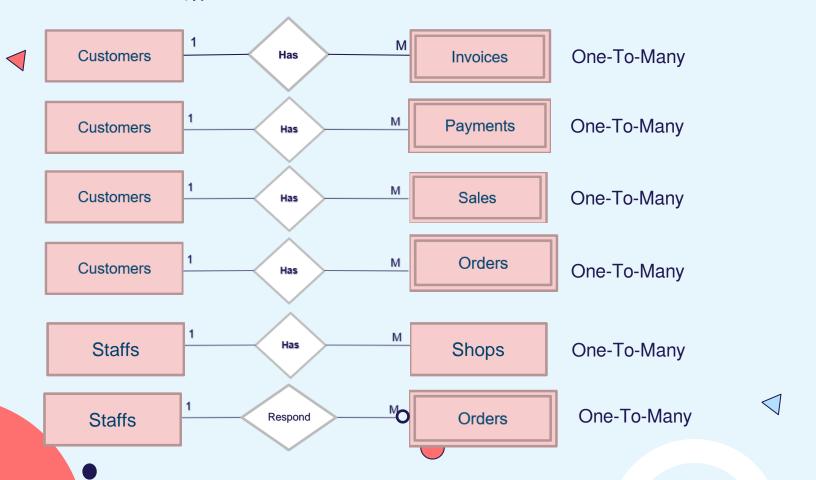
Shops

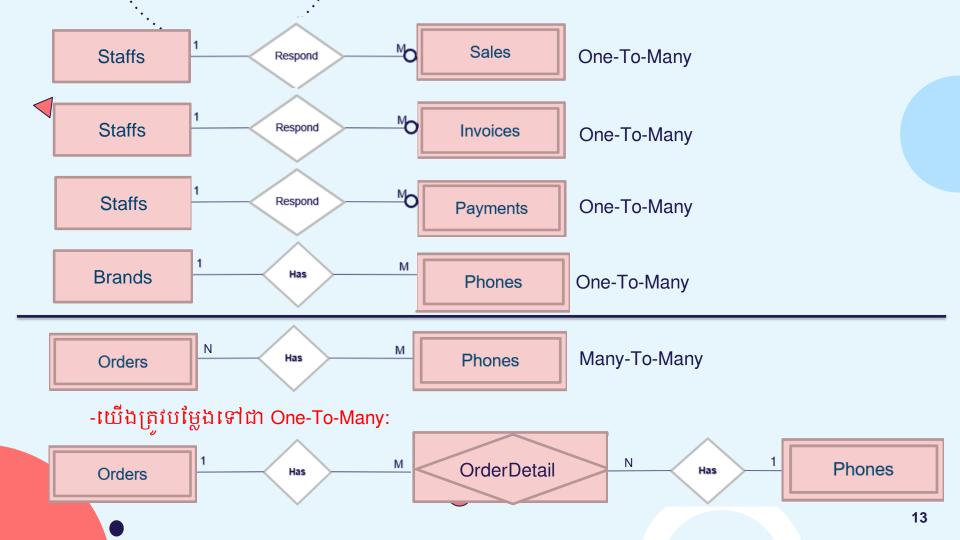
Brands

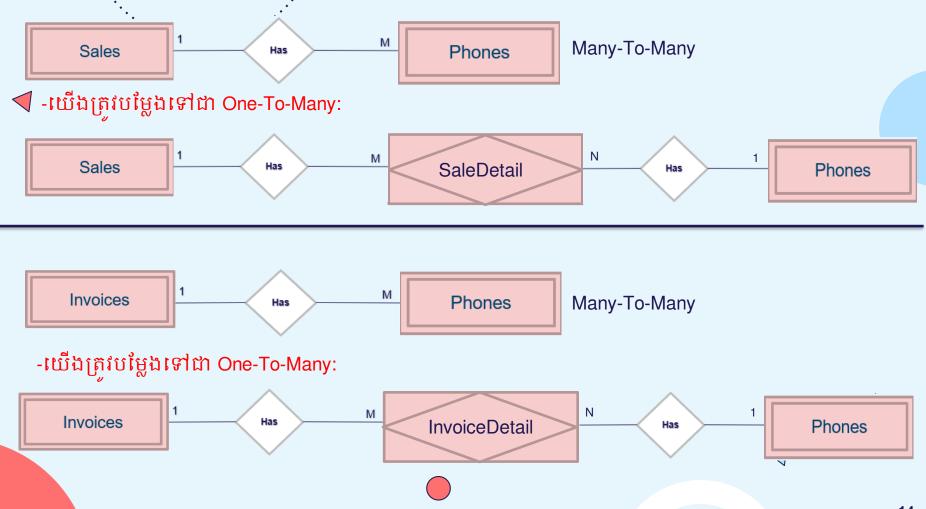
#### **Weak Entity Sets**



## <u>ទំនាក់ទំនង Entity Sets</u>







#### Relationship Diagram

