

University Bookshop Receipt
City University of Hong Kong,
Tat Chee Avenue, Kowloon, Hong Kong

Receipt ID: 9873
Staff ID: 1234

26th September 2019
9:00am

Staff Name: Chris Chan

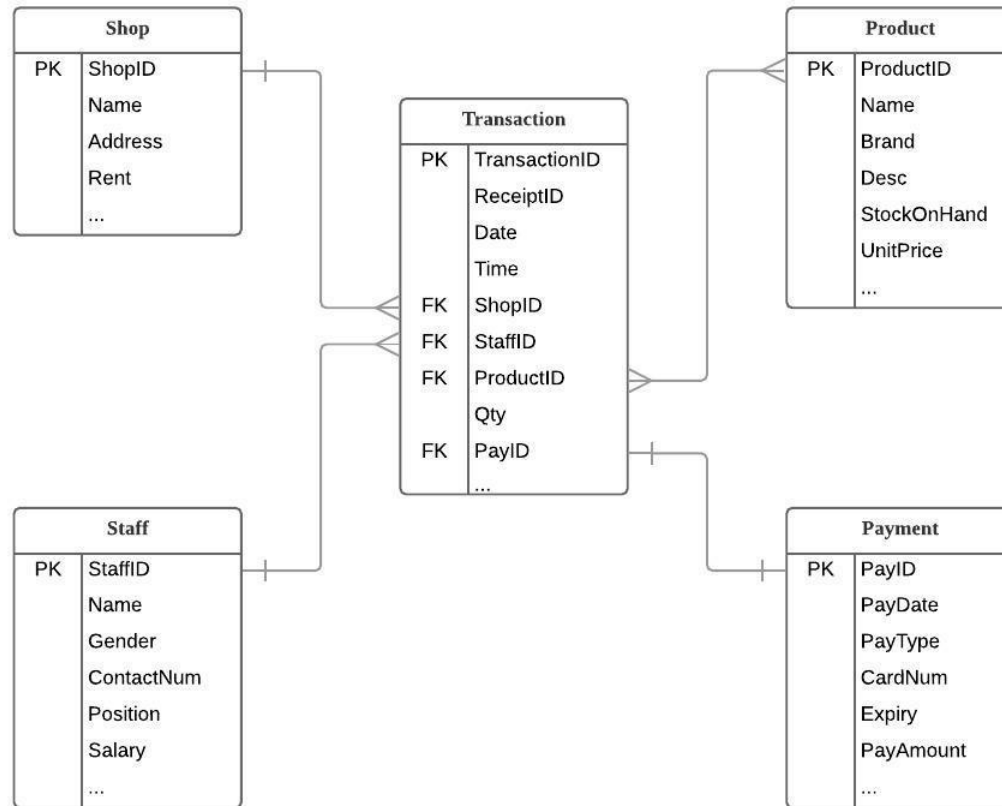
Item	Quantity	Price	Amount
#001: Pencil	2	\$6	\$12
#003: Experiencing MIS	1	\$300	\$300
		Total	\$312

Payment

Visa	1234 xxxx xxxx 5678	\$312
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Suggested Entity Relationship Diagram 1

University Book Store ER diagram Example 1



Many-to-many relationship is not preferred in a relational database because it is inefficient and managing all records tied to each side of relationship is difficult. When you look at the receipt, it contains multiple items, imagine how should you set up the transaction table? Would it be:

TransactionID	ReceiptID	Date	Time	ShopID	StaffID	ProductID	Qty	PayID
0002500	9873	26/9/2019	9:00am	CityU1	1234	#001	2	01
0002501	9873	26/9/2019	9:00am	CityU1	1234	#003	1	01

Or

TransactionID	ReceiptID	Date	Time	ShopID	StaffID	ProductID1	Qty1	ProductID2	Qty2	PayID
0002500	9873	26/9/2019	9:00am	CityU1	1234	#001	2	#003	1	01

But what if the customer purchases more items? How many duplicate records or columns will you need to add?

Therefore, we need a “bridging table”, Transaction LineItem/Detail table to eliminate M:N relationship. With this bridging table, it breaks down a M:N relationship to become two 1:N relationships as in the following diagram.

Suggested Entity Relationship Diagram 2

University Book Store ER diagram Example 2

