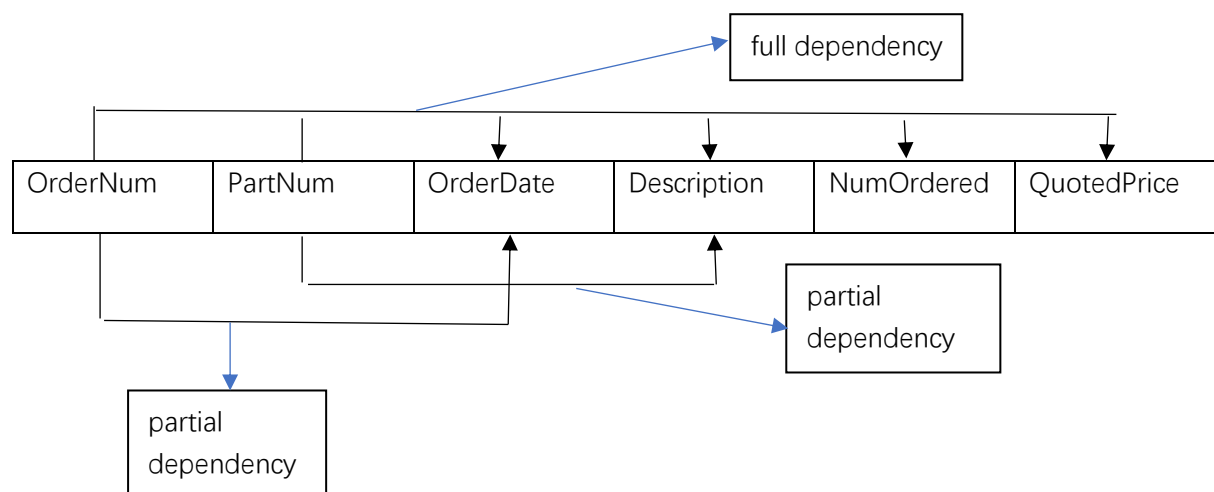


Insertion anomaly can be found in TABLE\_1. For example, if we want to insert a new Part data, we need to enter not just the PartNum, PartDescription, but also need to know the order details about this new part. The structure of this table forces us to enter facts about two or more entities, but we just want to enter facts about one.

Deletion anomaly exists in TABLE\_1. For example, suppose we delete the data for Part Number "DW11". When we delete this row, we remove not only data about the part number but also data about the order. We will lose all the order details about "DW11", such as OrderNum, OrderDate, NumOrdered, QuotedPrice. This anomaly also obvious when we want to delete the OrderNum "21608", multiple records about the part related to this order needs to be deleted to maintain the data integrity.

Update anomaly also can be found in this table. For example, with the redundant data, if we want to alter the last value of the Description column "GAS RANGE" to "ELECTRIC", the PartNum "DR93" has two different descriptions. The table will become inconsistent.



Full dependency: (OrderNum, PartNum) → (OrderDate, Description, NumOrdered, QuotedPrice)

1<sup>st</sup> partial dependency: PartNum → Description

2<sup>nd</sup> partial dependency: OrderNum → OrderDate

#### ORDER\_PART

<u>OrderNum</u> (FK)	<u>PartNum</u> (FK)	NumOrdered	QuotedPrice
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#### ORDER

<u>OrderNum</u>	OrderDate
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#### PART

<u>PartNum</u>	Description
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### ORDER\_PART

<u>OrderNum</u>	<u>PartNum</u>	NumOrdered	QuotedPrice
21608	AT94	11	21.95
21610	DR93	1	495.00
21610	DW11	1	399.99
21610	KL62	2	399.99
21614	KT03	2	595.00
21617	BV06	2	794.95
21617	KV29	1	1250.00
21617	CD52	4	150.00
21619	DR93	5	450.00
21623	KV29	1	1290.00
21624	DR93	1	495.00

### ORDER

<u>OrderNum</u>	<u>OrderDate</u>
21608	10/20/2015
21610	10/23/2015
21614	10/23/2015
21617	10/23/2015
21619	10/23/2015
21623	10/24/2015
21624	10/24/2015

### PART

<u>PartNum</u>	<u>Description</u>
AT94	IRON
DR93	GAS RANGE
DW11	WASHER
KL62	DRYER
KT03	DISHWASHER
BV06	HOME GYM
KV29	TREADMILL
CD52	MICROWAVE OVEN

ORDER\_PART is in 3NF

ORDER is in BCNF

PART is in BCNF