

orders

customer	date	items
Boots	12/20/2022	chicken, tuna, catnip
Tor	12/20/2022	toothpaste, cereal
Brian	12/20/2022	ping pong balls, disposable red cups
Pinky	12/15/2022	kibble
Artyom	12/20/2022	rope, duct tape, shovel
Pinky	12/15/2022	kibble

solution 1:

order_id	customer	date	items
1	Boots	12/20/2022	chicken, tur
2	Tor	12/20/2022	toothpaste,
3	Brian	12/20/2022	ping pong b
4	Pinky	12/15/2022	kibble
5	Artyom	12/20/2022	rope, duct t
6	Pinky	12/15/2022	kibble

solution 2a:

order_id	customer	date	item1
1	Boots	12/20/2022	chicken
2	Tor	12/20/2022	toothpaste
3	Brian	12/20/2022	ping pong b
4	Pinky	12/15/2022	kibble
5	Artyom	12/20/2022	rope
6	Pinky	12/15/2022	kibble

Solution 2b:

order_id	customer	date	item
1	Boots	12/20/2022	chicken
1	Boots	12/20/2022	tuna
1	Boots	12/20/2022	catnip
2	Tor	12/20/2022	toothpaste
2	Tor	12/20/2022	cereal
3	Brian	12/20/2022	ping pong b
3	Brian	12/20/2022	red disposa
4	Pinky	12/15/2022	kibble
5	Artyom	12/20/2022	duct tape
5	Artyom	12/20/2022	shovel
5	Artyom	12/20/2022	rope
6	Pinky	12/15/2022	kibble

solution 2c:

order_id	customer	date
1	Boots	12/20/2022
2	Tor	12/20/2022
3	Brian	12/20/2022
4	Pinky	12/15/2022
5	Artyom	12/20/2022
6	Pinky	12/15/2022

items

item	order_id	item_details	* item deta
chicken	1		
tuna	1		
catnip	1		
toothpaste	2		
cereal	2		
ping pong balls	3		
red disposable cups	3		
kibble	4		
duct tape	5		
shovel	5		
rope	5		
kibble	6		

solution 2d

order_id	customer	date
1	Boots	12/20/2022
2	Tor	12/20/2022
3	Brian	12/20/2022
4	Pinky	12/15/2022
5	Artyom	12/20/2022
6	Pinky	12/15/2022

items

item	order_id
1	1

2	1
3	1
4	2
5	2
6	3
7	3
8	4
9	5
10	5
11	5
8	6

inventory

git

<u>item_id</u>	item_name
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1	chicken
2	tuna
3	catnip
4	toothpaste
5	cereal
6	ping pong balls
7	red disposable cups
8	kibble
9	duct tape
10	shovel
11	rope

1a, catnip
cereal
alls, disposable red cups

ape, shovel

item2	item3	item4	item5
tuna	catnip		
cereal			
red disposable cups			
duct tape	shovel		

alls
ble cups

Design Principle:

Problem 1: not unique (ex: Pinky ordered more kibl

Problem 2: we have a comma separated list in one
-- ineffient for lookup and update operations

solution 2a:

- we have solved the problem of having a list to sea
- we have limited the functionality of our database

solution 2b:

- we are making our life easier to search for orders
one value in one column
- we are making our life harder by having all the du

Notes on Solution 2d:

items table has

- foreign key order_id which references the order's table's order_id (primary key)
- foreign key item which references the inventory table's item_id (primary key)
- composite primary key composed of the item and order_id columns

we have used items table to create a
MANY-to-MANY relationship
we call this a **join table** or **junction table**

Types of relationships between tables:

1:M = one to many

1:1 = one to one

M:N = many to many

ble on the same day)
of our columns

arch through
to only limited size orders

of a specific item, we only to look at
uplicate customer info taking up space

