

# Database Modeling

Introduction

- 1) Requirement analysis
- 2) Create ER-diagram
- 3) Organizing data into tables
- 4) Normalizing

①

Gather information

List the types of data

②

Visual

Entities

Primary keys

Cardinality

# Organizing data into tables

③

ER-diagram => tables

Assign datatypes

④

One big => many small

# Relations

Customer	

Order	

# Relations





# Relations

Book	

Lender	

# Relations



# Relations

Order	

Product	

# Relations



# Relations

Shop	

Icecream	

# Relations



# Relations

Country	

UN Representative	

# Relations





# Relations

Candidate	

Person	

Car	

ExtraInfo	

PoliticalParty	

Color	

ParkingSpot	

Product	

Order	

Student	

Book	

PassportDetails	

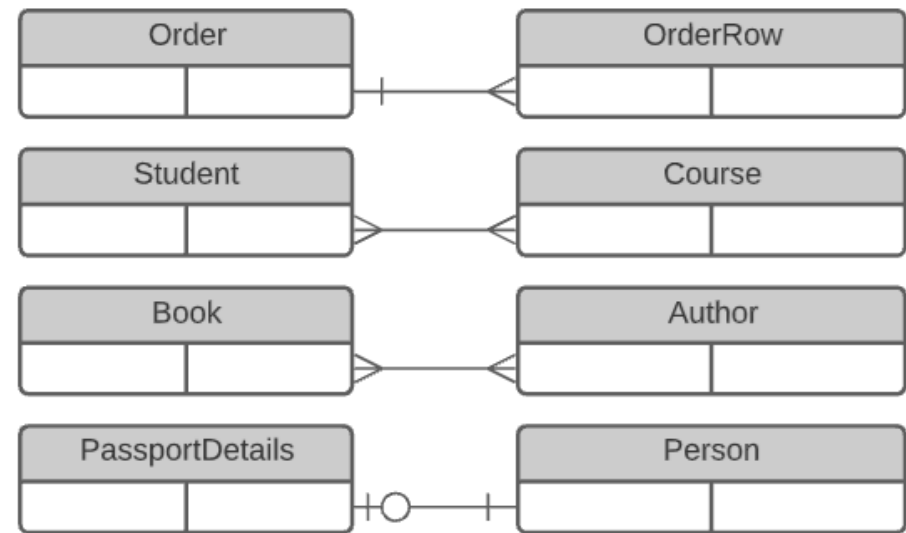
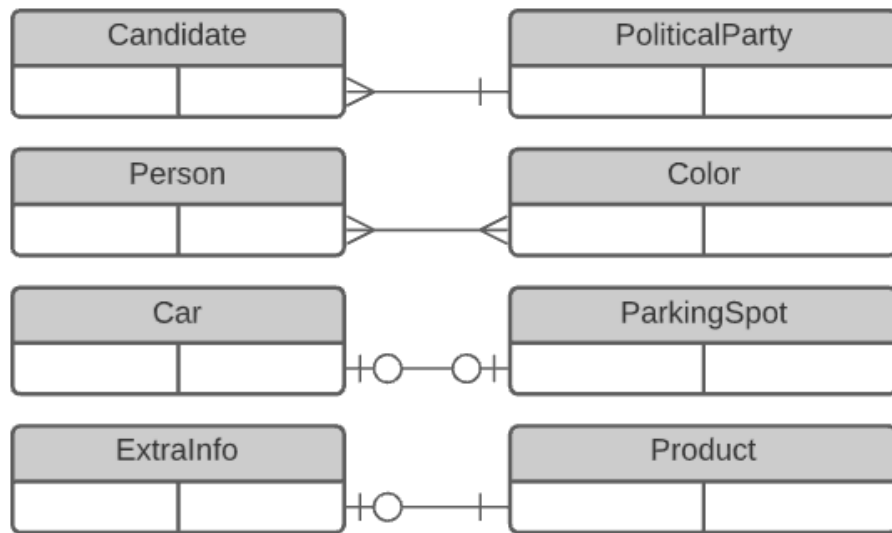
OrderRow	

Course	

Author	

Person	

# Relations



# Normalizing

First normal form

Second normal form

Third normal form



# Normalizing

## First normal form

<b>Name</b>	<b>FavoriteColors</b>
Bart	Red, Green, Blue
Lisa	Green, Purple

<b>Name</b>	<b>Color1</b>	<b>Color2</b>	<b>Color3</b>
Bart	Red	Green	Blue
Lisa	Green	Purple	

## Second normal form

 <b>OrderNumber</b>	 <b>ProductId</b>	<b>ProductName</b>
1	3000	Monitor 26"
2	4000	Freezer
3	3000	Monitor 26"

## Third normal form

<b>ProductId</b>	<b>Name</b>	<b>Price</b>	<b>VAT</b>	<b>TotalPrice</b>
1	Bowl	200	50	250
2	Spoon	32	8	40