

Key attributes

course: Information Modelling

WHAT IS A...

Key Attribute

A **key attribute** is an attribute in ER diagrams whose values are **constant** and **distinct** for each individual entity in an entity set.

doors: 4
airco: no
VIN: 4Y1SL65848Z411439
color: blue
hex-color: 2F8AA8
...



FINDING...

Key attributes

A car has many attributes:

doors
airco
VIN
color
hex-color
...

Every entity needs a logical set of attributes to uniquely identify that entity

doors: 4

airco: no

VIN: 4Y1SL65848Z411439

color: blue

hex-color: 2F8AA8

...



FINDING...

Key attributes

A car has many attributes:

doors

airco

VIN

color

hex-color

...

Every entity needs a **logical set of attributes** to uniquely identify that entity

FINDING...

Key attributes

What about the key attributes of an **invoice**?

subject

invoice date

invoice number

due date

account name

list of items

terms and conditions

total amount



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Key attributes

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IMPORTANCE of UNIVERSE of DISCOURSE

UNIVERSE (or DOMAIN) of DISCOURSE: **Wonka Industries**

invoice

clients

products

IMPORTANCE of UNIVERSE of DISCOURSE

UNIVERSE (or DOMAIN) of DISCOURSE: **Wonka Industries**



1971-42



1971-
313



1973-7



1973-84

clients

products

IMPORTANCE of UNIVERSE of DISCOURSE

UNIVERSE (or DOMAIN) of DISCOURSE: **Wonka Industries**



1971-42



1971-
313



1973-7



1973-84

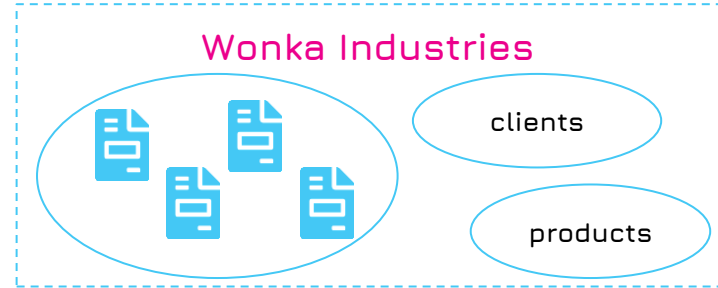
clients

products

each invoice number is **unique**

IMPORTANCE of UNIVERSE of DISCOURSE

UNIVERSE (or DOMAIN) of DISCOURSE: Smart Accountants Company



IMPORTANCE of UNIVERSE of DISCOURSE

UNIVERSE (or DOMAIN) of DISCOURSE: Smart Accountants Company

Wayne Enterprises

Nakatomi Trading Corp.

Stark Industries

Oceanic Airlines

Oscorp

Wonka Industries

clients

products

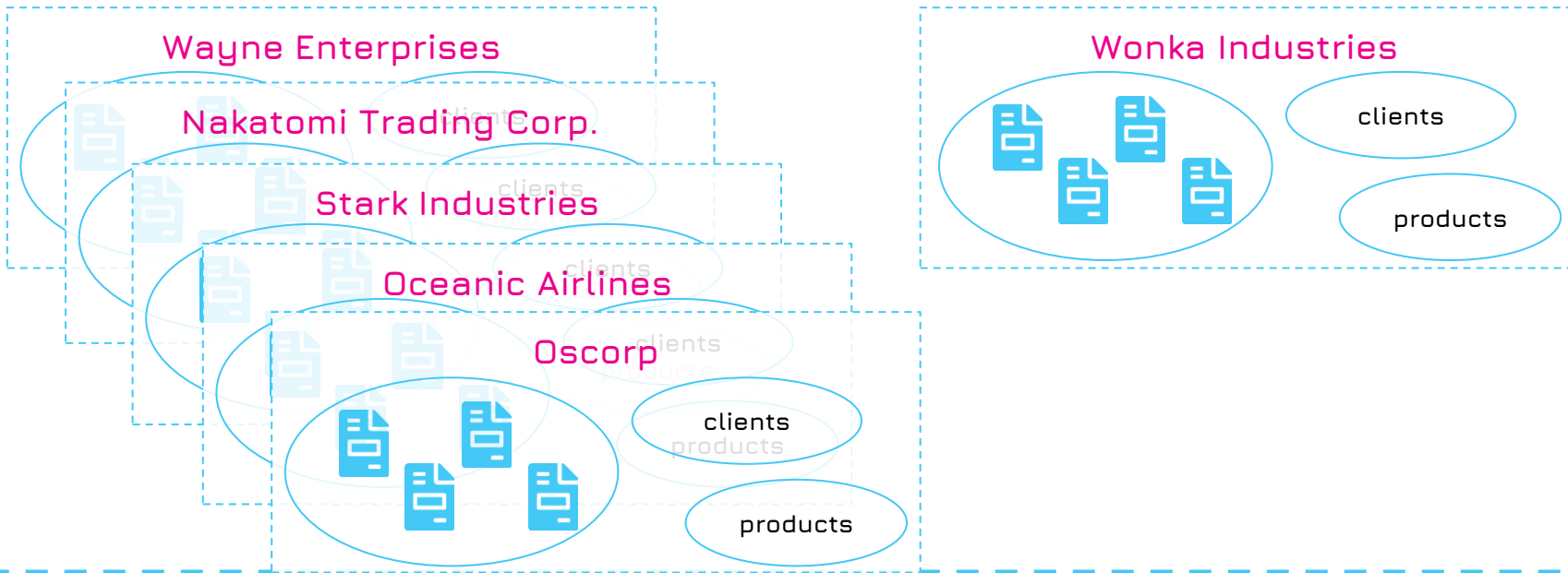
clients

products

products

each invoice number is
NOT unique

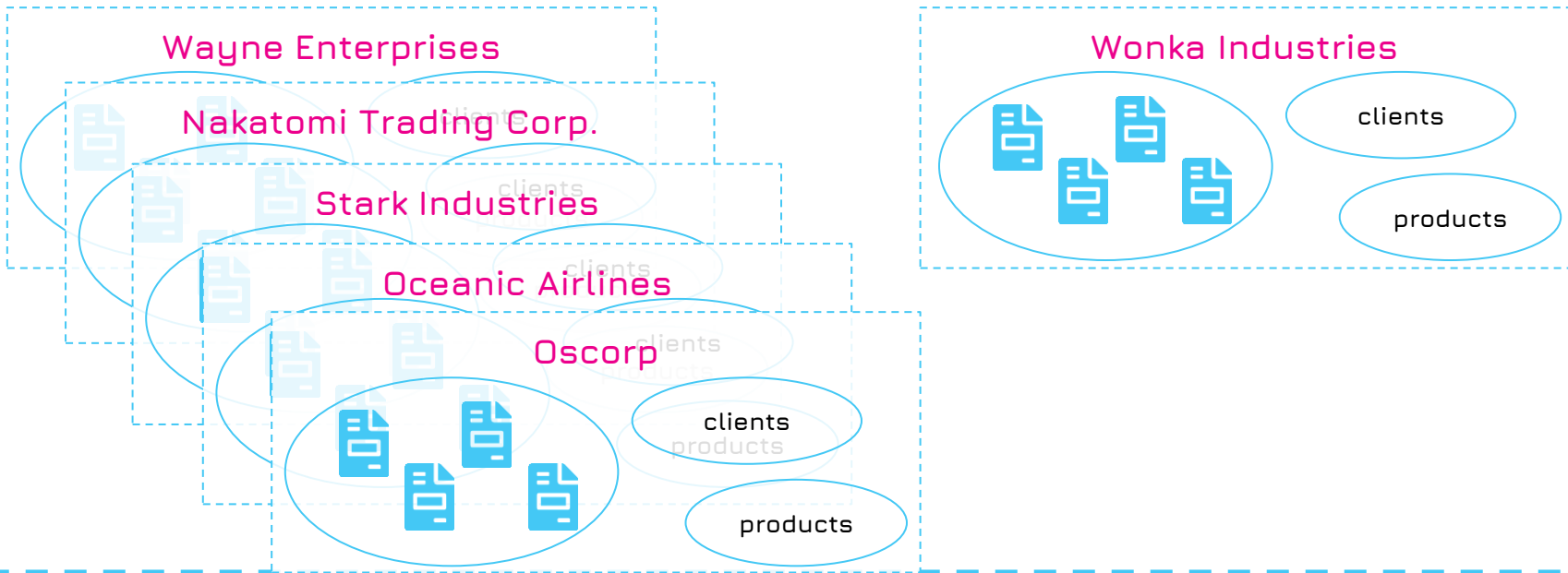
UNIVERSE (or DOMAIN) of DISCOURSE: Smart Accountants Company



you may need multiple attributes
to uniquely identify entities in an entity set

but it depends on the universe of discourse

UNIVERSE (or DOMAIN) of DISCOURSE: Smart Accountants Company



invoice number and its related company
uniquely identify the entities in the invoice set

but it depends on the universe of discourse

invoices



1971-42
Wonka...



1971-
313
Wonka...



1973-7
Wonka...



1973-84
Wonka...

invoice number and its related company
uniquely identify the entities in the invoice set

but it depends on the universe of discourse

invoices



1971-42
Wonka...



1971-
313
Wonka...



1973-7
Wonka...



1973-84
Wonka...



1973-84
Oscorp



1978-1
Oscorp



1988-42
Wayne...

invoice number and its related company
uniquely identify the entities in the invoice set

but it depends on the universe of discourse

WHAT IS A...

Key Attribute

A **key attribute** is an attribute in ER diagrams whose values are distinct for each individual entity of an entity type. There may be more key attributes for an entity.

There may be **more than one attribute composing the key**: the combination of those attributes are unique for each individual entity of an entity type and **no attribute in the combination is obsolete**. One attribute in that composition is called **partial key attribute**.

FINDING...

Key attributes

What about the key / partial key attributes of an **address**?

street

number

city

zip code

province or state

country

2 digit country code



FINDING...

Key attributes

What about the key / partial key attributes of an **address**?

street

number

~~city~~

zip code

province or state

~~country~~

2 digit country code

Assume one city per zip
code



FINDING...

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~~province or state~~

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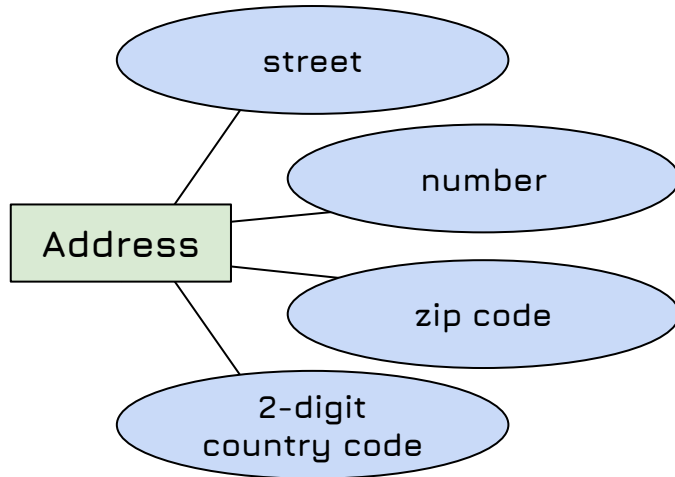
country

2 digit country code



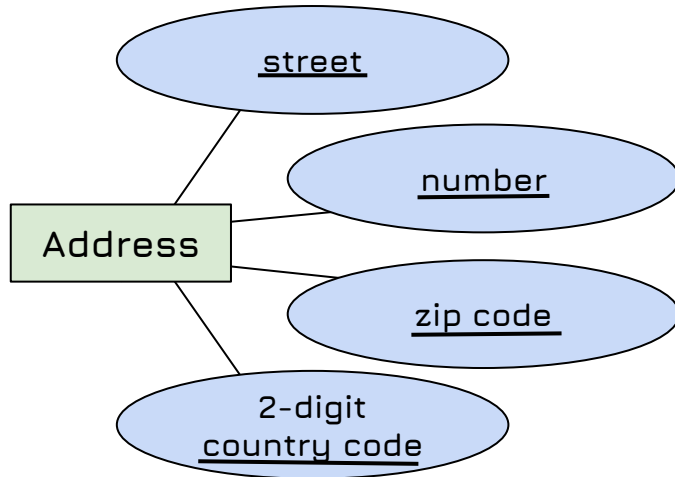
NOTATION

Key attributes



NOTATION

Key attributes



NOTATION

Key attributes

Address
*street
*number
*zipCode
*countryCode



NOTATION

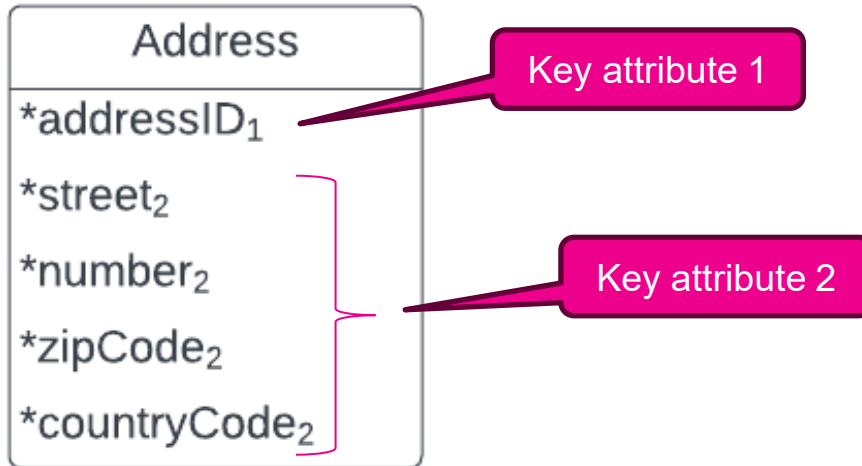
Key attributes

Address
*addressID ₁
*street ₂
*number ₂
*zipCode ₂
*countryCode ₂



NOTATION

Key attributes



Key attributes

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