

SO FAR WE'VE GOT...

ENTITIES ATTRIBUTES

A LOT OF THE DATA WE ADD TO A DATABASE REQUIRES ASSOCIATION OF THE INFORMATION WITH A SPECIFIC ENTITY

HOW DO WE UNIQUELY IDENTIFY AN ENTITY AMONGST ALL OTHER ENTITIES OF THE SAME TYPE?

A SINGLE ATTRIBUTE OR A COMBINATION OF ATTRIBUTES OF AN ENTITY SHOULD BE UNIQUE

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ENTITIES ATTRIBUTES

A SINGLE ATTRIBUTE OR A COMBINATION OF
ATTRIBUTES OF AN ENTITY SHOULD BE UNIQUE

THIS WILL ALLOW US TO IDENTIFY AN ENTITY
WITHOUT ANY AMBIGUITY

THE IDENTIFIER IS CALLED A:

KEY

KEY

LET'S SEE SOME EXAMPLES:

ENTITY

PERSON



POSSIBLE KEYS

EMAIL ADDRESS

PHONE NUMBER

SOCIAL SECURITY NUMBER

EMPLOYEE ID

KEY

LET'S SEE SOME EXAMPLES:

ENTITY

PERSON



POSSIBLE KEYS

EMAIL ADDRESS

PHONE NUMBER

SOCIAL SECURITY NUMBER

EMPLOYEE ID

~~GENDER?~~

~~FIRST NAME?~~

~~FIRST NAME + LAST NAME?~~

KEY

A key is an attribute or a set of attributes which uniquely identify an entity in an entity set

SOME DEFINITIONS...

CANDIDATE KEY

SUPER KEY

PRIMARY KEY

SUPER KEY

A set of attributes which is **sufficient** to uniquely distinguish entities from one another

EMAIL ADDRESS

PHONE NUMBER

EMAIL ADDRESS + PHONE NUMBER

SOCIAL SECURITY NUMBER + NAME



NOTE THAT SSN ALONE MAY BE SUFFICIENT BUT ALONG WITH NAME FORMS A SUPER KEY

CANDIDATE KEY

A **minimal** set of attributes which form a key

ONLY ONE OF THESE ARE
ENOUGH FOR UNIQUE
IDENTIFICATION

EMAIL ADDRESS + PHONE NUMBER

SOCIAL SECURITY NUMBER + NAME

IF WE REMOVE THE
NAME ATTRIBUTE, IT'S
STILL A KEY!

PRIMARY KEY

One of the candidate keys which the database designer **designates** as the key to uniquely identify an entity

AS A DATABASE DESIGNER...

YOU CAN HAVE A SPECIFIC **CUSTOMER ID** TO REPRESENT A CUSTOMER AS PHONE NUMBERS OR EMAIL ADDRESSES MIGHT CHANGE

USE THE BANK **ACCOUNT NUMBER** TO REPRESENT AN ACCOUNT

GENERATE A UNIQUE **RIDE NUMBER** TO REPRESENT A RIDE ON UBER