# Intro Class
Elements of Databases

Aug. 27, 2021

Basic Terminology

- Table / Relation / Entity Type
- Column / Field / Attribute
- Row / Record / Entity / Tuple
- Cell / Attribute Value
- Datatype (e.g. INT, DOUBLE, VARCHAR, CHAR, BOOL, DATETIME)
- Constraint (e.g. NOT NULL, Primary Key, Foreign Key)
- Database versus Database System
- Database versus Dataset
- Schema / Data Model

Table Relationship: One-to-Many (1:m)

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T1

PK	field1
	field2
	field3
	field$n$

T2

PK	field1
	field2
	field3
FK	field$n$
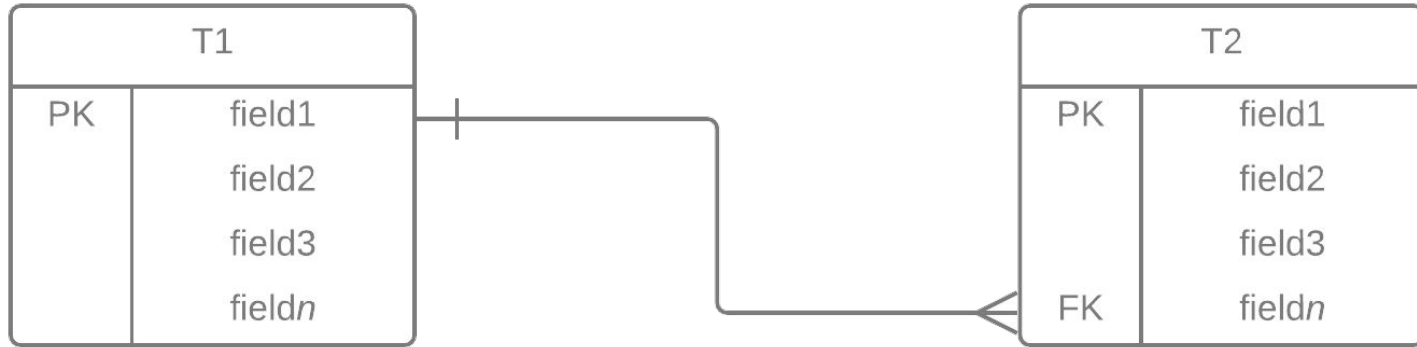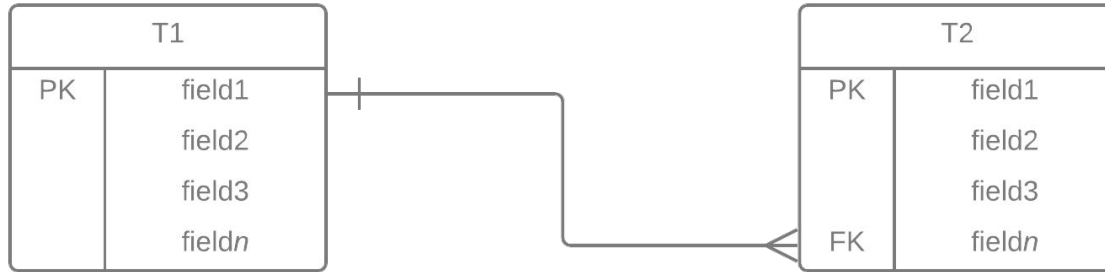
Author

id	name	section
1	Mary Tuma	news
2	Michael King	arts
3	Nina Hernandez	news
4	Sunil Kumar	music

Article

id	title	date	authid
1	Turmoil at the Zoo	2019-01-26	1
2	CodeNEXT's New Friend	2019-01-27	1
3	Quote of the Week	2019-01-27	3
4	SXSW News	2019-01-28	2
5	More from Steve Adler	2019-01-28	1

Table Relationship: One-to-One (1:1)

T1	
PK	field1
	field2
	field3
	field*n*

T2	
PK, FK	field1
	field2
	field3
	field*n*

Table Relationship: One-to-One (1:1)

T1	
PK	field1
	field2
	field3
	field*n*

T2	
PK, FK	field1
	field2
	field3
	field*n*

Article

id	title	date	authid
1	Turmoil at the Zoo	2019-01-26	1
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Article_Stats

id	clicks	likes	dislikes	comments
1	120	45	9	13
2	0	0	0	0
3	8	0	0	2
4	30	4	0	1
5	9	1	3	3

Table Relationship: Many-to-Many (*m:n*)

T1	
PK	field1
	field2
	field3
FK	field*n*

T2	
PK	field1
	field2
	field3
FK	field*n*

Table Relationship: Many-to-Many (m:n)

T1

PK	field1
	field2
	field3
FK	field*n*

T2

PK	field1
	field2
	field3
FK	field*n*

Tag

id	tag	*aids*
1	Politics	1, 2, 5
2	Austin	1, 2, 3, 4, 5
3	Mayor	3, 5
4	Business	1, 2, 5
6	Land Development	2
37	Animals	1

Article

id	title	date	*authid*	*tids*
1	Turmoil at the Zoo	2019-01-26	1	4, 37, 2
2	CodeNEXT's New Friend	2019-01-27	1	2, 6
3	Quote of the Week	2019-01-27	3	2, 3
4	SXSW News	2019-01-28	2	2, 40, 7
5	More from Steve Adler	2019-01-28	1	2, 3, 4

Representation of Many-to-Many (*m:n*)
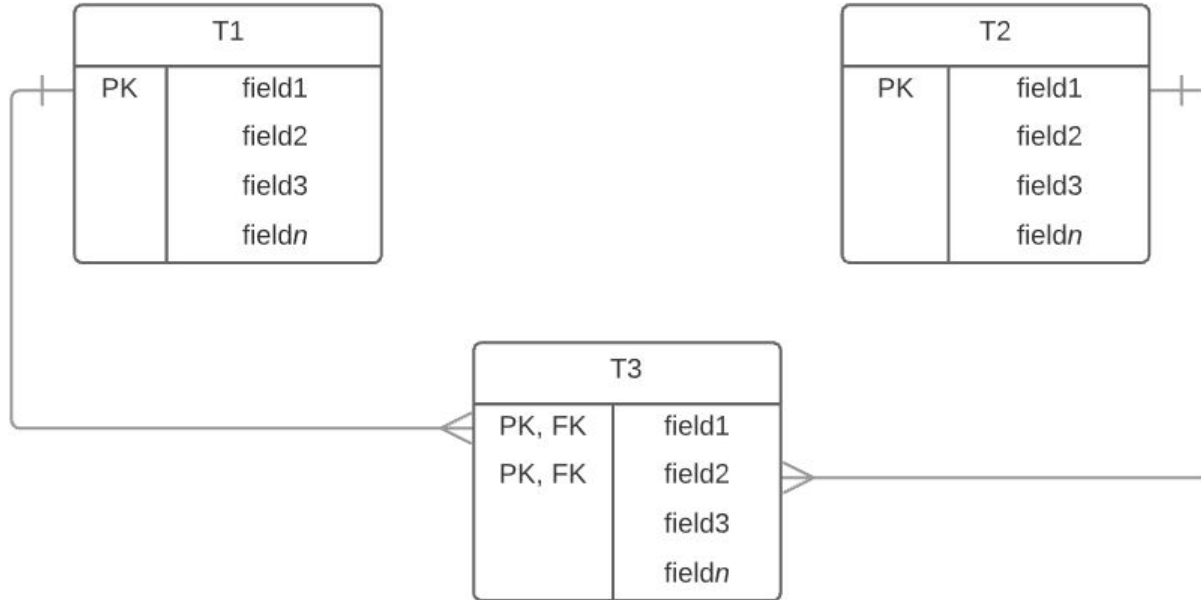
Table Relationship: Many-to-Many (*m:n*)

Tag

id	tag
1	Politics
2	Austin
3	Mayor
4	Business
6	Land Development
37	Animals

Article

id	title	date	authid
1	Turmoil at the Zoo	2019-01-26	1
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Tagged_Article

tid	aid
4	1
37	1
2	1
2	2
6	2

UT Instapoll Test

Project 0

- Find a project partner
- Set up your git repo
- Set up your GCP project
- Due next Thursday