

Relational Databases

How can we save data in a web application?



Databases

To save (or **persist**) data, you need to somehow write the data to permanent storage, like the hard disk.



Databases

For a blogging platform, users have many posts and posts have tags and users may be following other users and so on.



Relational Databases / RDBMS/ Relational Database Management Systems

Relational databases were developed to provide a means of organizing data and their relationships, persisting that data and querying it.



USERS		
id	name	email
1	Sally	sally @ gmail.com
2	Jeff	jeff @ gmail.com
3	Matt	matt @ hotmail.com
4	Sophie	pretty_girl@aol.com



USERS		
id	name	email
1	Sally	sally @ gmail.com
2	Jeff	jeff @ gmail.com
3	Matt	matt @ hotmail.com
4	Sophie	pretty_girl @ aol.com

Row, Single entity



USERS				
id	r	name	er	nail
1	٤	Sally	sa	lly @ gmail.com
2	J	eff	je	f ø gmail.com
3	1	Matt	m	att @ hotmail.com
4	٤	Sophie	pr	etty_girl @ aol.com

Column, Attribute



		USERS
id	name	email
1	Sally	sally @ gmail.com
2	Jeff	jeff @ gmail.com
3	Matt	matt @ hotmail.com
4	Sophie	pretty_girl @ aol.com

Primary Key, Identifier



Schema

USERS		
id	name	email
1	Sally	sally @ gmail.com
2	Jeff	jeff @ gmail.com
3	Matt	matt @ hotmail.com
4	Sophie	pretty_girl@aol.com

	POST - TAG		
id	post_id	tag_id	
1	1	3	
2	3	2	
3	4	3	
4	1	1	

	TAGS
id	tag_name
1	music
2	awesomeness
3	facts
4	boring

POSTS		
id	user_id	post
1	1	this is my first post!
2	1	this is great
3	3	I am Matt!
4	2	I am not a pretty girl!



Schema

USERS		
id	name	email
1	Sally	sally @ gmail.com
2	Jeff	jeff @ gmail.com
3	Matt	matt @ hotmail.com
4	Sophie	pretty_girl@aol.com

POST - TAG		
id	post_id	tag_id
1	1	3
2	3	2
3	4	3
4	1	1

TAGS	
id	tag_name
1	music
2	awesomeness
3	facts
4	boring

Foreign Key, Relationships 1:n (has many)

	POSTS		
id	user_id post		
1	1	this is my first post!	
2	1	this is great	
3	3	I am Matt!	
4	2	I am not a pretty girl!	

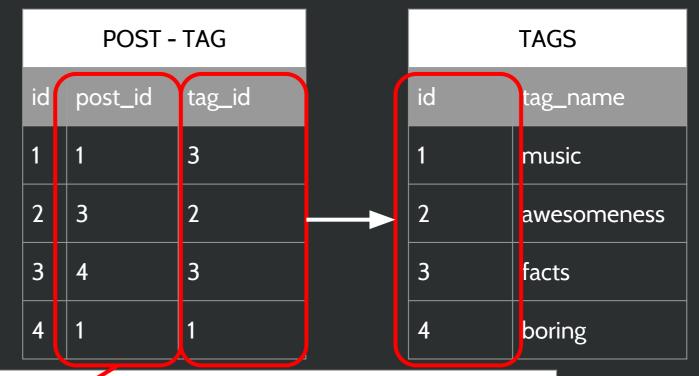


Schema

USERS		
id	name	email
1	Sally	sally @ gmail.com
2	Jeff	jeff @ gmail.com
3	Matt	matt @ hotmail.com
4	Sophie	pretty_girl@aol.com

Foreign Key, Relationships

n:m (many to many)



POSTS			
id	user_id	post	
1	1	this is my first post!	
2	1	this is great	
3	3	I am Matt!	
4	2	I am not a pretty girl!	





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