PHASE II

SOFE 3700U

Group 6

CRN 43512 002

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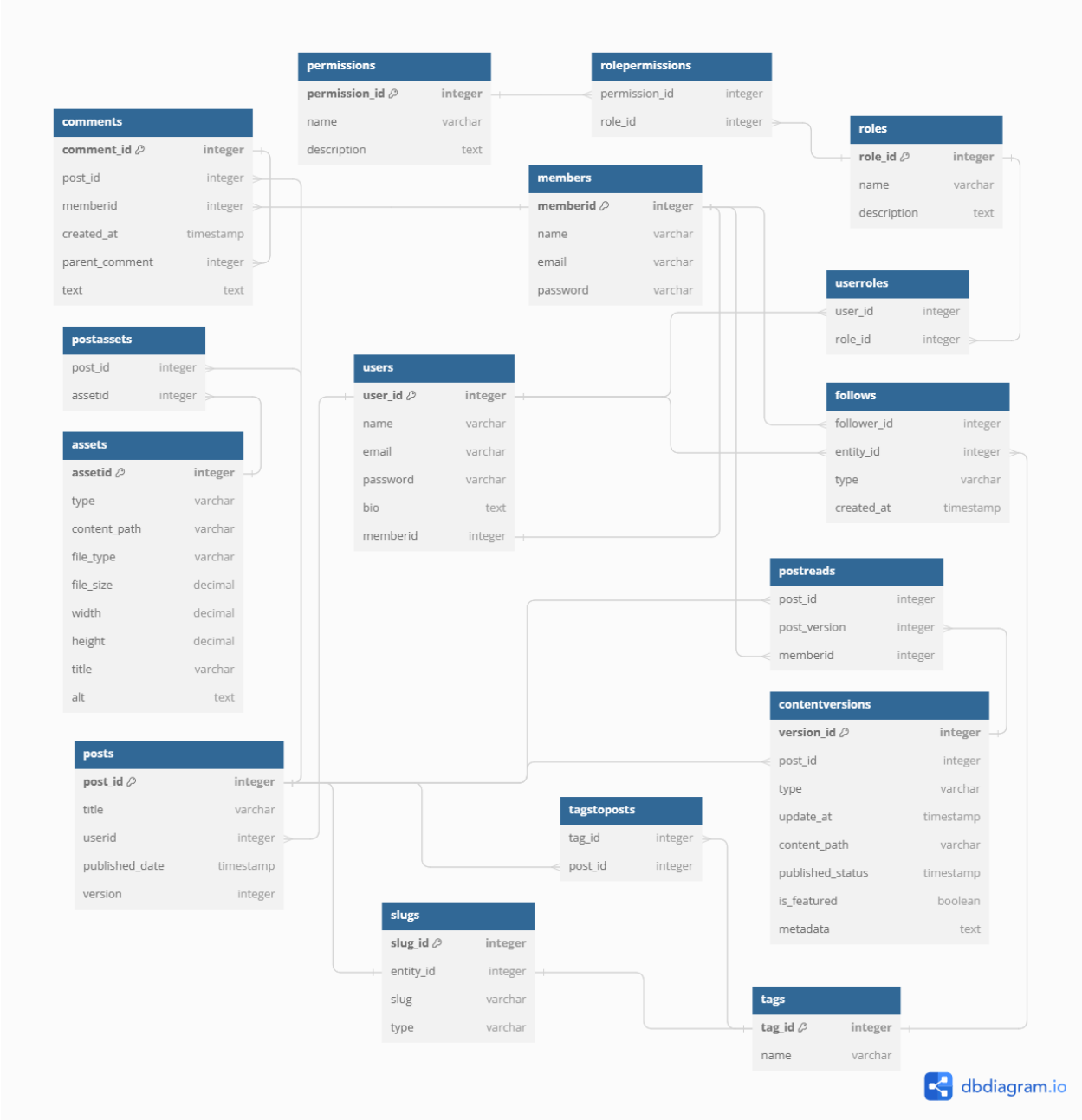
GitHub Link: ***https://github.com/pippen69/PhaseII-DBMS***

PART A: RELATIONAL SCHEMA

Added to Github repository



Code for Relational Schema

```
DO $$ BEGIN
 CREATE TYPE "type" AS ENUM('post', 'page');
EXCEPTION
 WHEN duplicate_object THEN null;
END $$;

CREATE TABLE IF NOT EXISTS "assets" (
	"assetid" serial PRIMARY KEY NOT NULL,
	"type" varchar NOT NULL,
	"content_path" varchar NOT NULL,
	"file_type" varchar NOT NULL,
	"file_size" numeric(8, 3) NOT NULL,
	"width" numeric(10, 4),
	"height" numeric(10, 4),
	"title" varchar,
	"alt" text
);

CREATE TABLE IF NOT EXISTS "comments" (
	"comment_id" serial PRIMARY KEY NOT NULL,
	"post_id" integer NOT NULL,
	"memberid" integer NOT NULL,
	"created_at" timestamp NOT NULL,
	"parent_comment" integer,
	"text" text NOT NULL
);

CREATE TABLE IF NOT EXISTS "contentversions" (
	"version_id" serial PRIMARY KEY NOT NULL,
	"post_id" integer NOT NULL,
	"type" "type" NOT NULL,
	"update_at" timestamp NOT NULL,
	"content_path" varchar NOT NULL,
	"published_status" boolean NOT NULL,
	"is_featured" boolean NOT NULL,
	"metadata" json,
	CONSTRAINT "contentversions_content_path_unique" UNIQUE("content_path")
);

CREATE TABLE IF NOT EXISTS "follows" (
	"follower_id" integer NOT NULL,
	"entity_id" integer NOT NULL,
	"type" "type" NOT NULL,
	"created_at" timestamp NOT NULL,
	CONSTRAINT follows_follower_id_entity_id_type PRIMARY
KEY("follower_id","entity_id","type")
```

```
);

CREATE TABLE IF NOT EXISTS "members" (
	"memberid" serial PRIMARY KEY NOT NULL,
	"name" varchar NOT NULL,
	"email" varchar NOT NULL,
	"password" varchar NOT NULL,
	CONSTRAINT "members_email_unique" UNIQUE("email")
);

CREATE TABLE IF NOT EXISTS "permissions" (
	"permission_id" serial PRIMARY KEY NOT NULL,
	"name" varchar NOT NULL,
	"description" text,
	CONSTRAINT "permissions_name_unique" UNIQUE("name")
);

CREATE TABLE IF NOT EXISTS "postassets" (
	"post_id" integer NOT NULL,
	"assetid" integer NOT NULL,
	CONSTRAINT postassets_post_id_assetid PRIMARY KEY("post_id","assetid")
);

CREATE TABLE IF NOT EXISTS "postreads" (
	"post_id" integer NOT NULL,
	"post_version" integer NOT NULL,
	"memberid" integer NOT NULL,
	CONSTRAINT postreads_post_id_post_version_memberid PRIMARY
KEY("post_id","post_version","memberid")
);

CREATE TABLE IF NOT EXISTS "posts" (
	"post_id" serial PRIMARY KEY NOT NULL,
	"title" varchar NOT NULL,
	"userid" integer NOT NULL,
	"published_date" timestamp NOT NULL,
	"version" integer NOT NULL,
	CONSTRAINT "posts_version_unique" UNIQUE("version")
);

CREATE TABLE IF NOT EXISTS "rolepermissions" (
	"permission_id" integer NOT NULL,
	"role_id" integer NOT NULL,
	CONSTRAINT rolepermissions_permission_id_role_id PRIMARY
KEY("permission_id","role_id")
);
```

```
CREATE TABLE IF NOT EXISTS "roles" (
	"role_id" serial PRIMARY KEY NOT NULL,
	"name" varchar NOT NULL,
	"description" text,
	CONSTRAINT "roles_name_unique" UNIQUE("name")
);

CREATE TABLE IF NOT EXISTS "slugs" (
	"slug_id" serial PRIMARY KEY NOT NULL,
	"entity_id" integer NOT NULL,
	"slug" varchar NOT NULL,
	"type" "type" NOT NULL,
	CONSTRAINT "slugs_slug_unique" UNIQUE("slug")
);

CREATE TABLE IF NOT EXISTS "tags" (
	"tag_id" serial PRIMARY KEY NOT NULL,
	"name" varchar NOT NULL,
	CONSTRAINT "tags_name_unique" UNIQUE("name")
);

CREATE TABLE IF NOT EXISTS "tagstoposts" (
	"tag_id" integer NOT NULL,
	"post_id" integer NOT NULL,
	CONSTRAINT tagstoposts_tag_id_post_id PRIMARY KEY("tag_id","post_id")
);

CREATE TABLE IF NOT EXISTS "userroles" (
	"user_id" integer NOT NULL,
	"role_id" integer NOT NULL,
	CONSTRAINT userroles_user_id_role_id PRIMARY KEY("user_id","role_id")
);

CREATE TABLE IF NOT EXISTS "users" (
	"user_id" serial PRIMARY KEY NOT NULL,
	"name" varchar NOT NULL,
	"email" varchar NOT NULL,
	"password" varchar NOT NULL,
	"bio" text,
	"memberid" integer,
	CONSTRAINT "users_email_unique" UNIQUE("email"),
	CONSTRAINT "users_memberid_unique" UNIQUE("memberid")
);
```

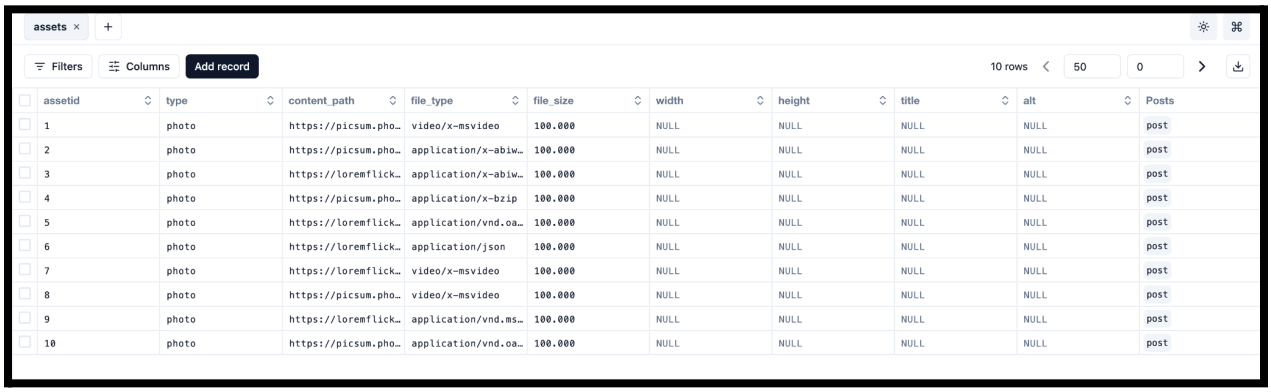
```
ALTER TABLE "comments" ADD CONSTRAINT "comments_post_id_posts_post_id_fk" FOREIGN KEY
("post_id") REFERENCES "posts"("post_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "comments" ADD CONSTRAINT "comments_memberid_members_memberid_fk" FOREIGN
KEY ("memberid") REFERENCES "members"("memberid")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "comments" ADD CONSTRAINT "comments_parent_comment_users_user_id_fk"
FOREIGN KEY ("parent_comment") REFERENCES "users"("user_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "contentversions" ADD CONSTRAINT
"contentversions_post_id_posts_post_id_fk" FOREIGN KEY ("post_id")
REFERENCES "posts"("post_id") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "follows" ADD CONSTRAINT
"follows_follower_id_members_memberid_fk" FOREIGN KEY ("follower_id")
REFERENCES "members"("memberid") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "postassets" ADD CONSTRAINT
"postassets_post_id_posts_post_id_fk" FOREIGN KEY ("post_id")
REFERENCES "posts"("post_id") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "postassets" ADD CONSTRAINT
"postassets_assetid_assets_assetid_fk" FOREIGN KEY ("assetid")
REFERENCES "assets"("assetid") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "postreads" ADD CONSTRAINT
"postreads_post_id_posts_post_id_fk" FOREIGN KEY ("post_id")
REFERENCES "posts"("post_id") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;
```

```
ALTER TABLE "postreads" ADD CONSTRAINT
"postreads_post_version_contentversions_version_id_fk" FOREIGN KEY ("post_version")
REFERENCES "contentversions"("version_id") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "postreads" ADD CONSTRAINT "postreads_memberid_members_memberid_fk"
FOREIGN KEY ("memberid") REFERENCES "members"("memberid")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "posts" ADD CONSTRAINT "posts_userid_users_user_id_fk" FOREIGN KEY
("userid") REFERENCES "users"("user_id") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "rolepermissions" ADD CONSTRAINT
"rolepermissions_permission_id_permissions_permission_id_fk" FOREIGN KEY
("permission_id") REFERENCES "permissions"("permission_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "rolepermissions" ADD CONSTRAINT
"rolepermissions_role_id_roles_role_id_fk" FOREIGN KEY ("role_id") REFERENCES
"roles"("role_id") ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "tagstoposts" ADD CONSTRAINT "tagstoposts_tag_id_tags_tag_id_fk"
FOREIGN KEY ("tag_id") REFERENCES "tags"("tag_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "tagstoposts" ADD CONSTRAINT "tagstoposts_post_id_posts_post_id_fk"
FOREIGN KEY ("post_id") REFERENCES "posts"("post_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "userroles" ADD CONSTRAINT "userroles_user_id_users_user_id_fk"
FOREIGN KEY ("user_id") REFERENCES "users"("user_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;
```

```
ALTER TABLE "userroles" ADD CONSTRAINT "userroles_role_id_roles_role_id_fk"
FOREIGN KEY ("role_id") REFERENCES "roles"("role_id")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;

ALTER TABLE "users" ADD CONSTRAINT "users_memberid_members_memberid_fk"
FOREIGN KEY ("memberid") REFERENCES "members"("memberid")
ON DELETE no action ON UPDATE no action;
EXCEPTION
 WHEN duplicate_object THEN null;
```

PART B: SAMPLE DATA

Data used for Relational Schema and E-R Diagram. Note that the metadata (JSON) section under the ContentVersion section is not used because that is part of the metadata variable.



assets ×

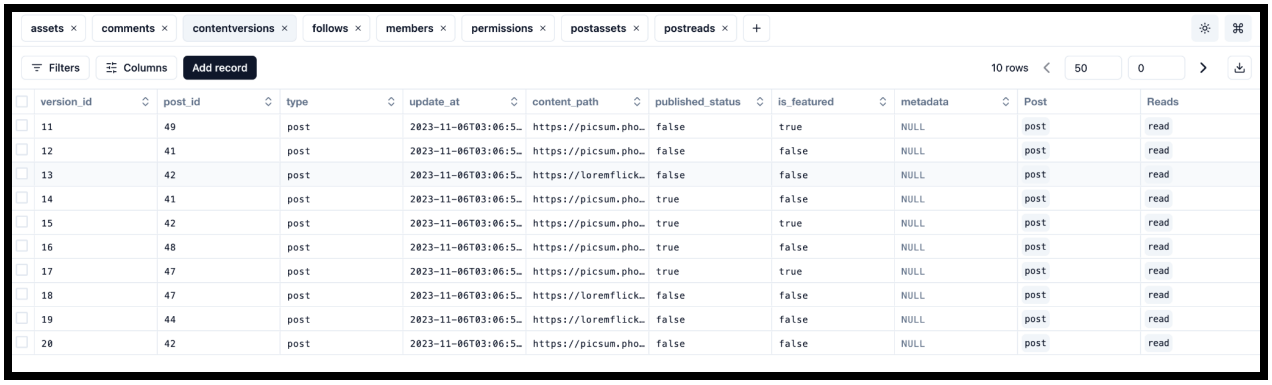
Filters | Columns | Add record | 10 rows | 50 | 0

assetid	type	content_path	file_type	file_size	width	height	title	alt	Posts
1	photo	https://picsum.pho…	video/x-msvideo	100.000	NULL	NULL	NULL	NULL	post
2	photo	https://picsum.pho…	application/x-abiw…	100.000	NULL	NULL	NULL	NULL	post
3	photo	https://loremflick…	application/x-abiw…	100.000	NULL	NULL	NULL	NULL	post
4	photo	https://picsum.pho…	application/x-bzip	100.000	NULL	NULL	NULL	NULL	post
5	photo	https://loremflick…	application/vnd.oa…	100.000	NULL	NULL	NULL	NULL	post
6	photo	https://loremflick…	application/json	100.000	NULL	NULL	NULL	NULL	post
7	photo	https://loremflick…	video/x-msvideo	100.000	NULL	NULL	NULL	NULL	post
8	photo	https://picsum.pho…	video/x-msvideo	100.000	NULL	NULL	NULL	NULL	post
9	photo	https://loremflick…	application/vnd.ms…	100.000	NULL	NULL	NULL	NULL	post
10	photo	https://picsum.pho…	application/vnd.oa…	100.000	NULL	NULL	NULL	NULL	post

assets × | comments ×

Filters | Columns | Add record | 10 rows | 50 | 0

comment_id	post_id	memberid	created_at	parent_comment	text	Post	Member	Parent Comment	Child Comments
11	41	51	2023-11-06T03:06:5…	NULL	Aegrotatio numquam…	post	member	parentComment	childComment
12	45	52	2023-11-06T03:06:5…	NULL	Arbitro quisquam b…	post	member	parentComment	childComment
13	45	56	2023-11-06T03:06:5…	NULL	Alii cursus debili…	post	member	parentComment	childComment
14	45	55	2023-11-06T03:06:5…	NULL	Universe votum com…	post	member	parentComment	childComment
15	49	56	2023-11-06T03:06:5…	NULL	Atqui aveho ultio …	post	member	parentComment	childComment
16	48	55	2023-11-06T03:06:5…	NULL	Explicabo conitor …	post	member	parentComment	childComment
17	49	59	2023-11-06T03:06:5…	NULL	Terror molestias v…	post	member	parentComment	childComment
18	49	51	2023-11-06T03:06:5…	NULL	Delinquo appello r…	post	member	parentComment	childComment
19	44	57	2023-11-06T03:06:5…	NULL	Timidus tamquam vo…	post	member	parentComment	childComment
20	46	58	2023-11-06T03:06:5…	NULL	Vilitas ab crustul…	post	member	parentComment	childComment



version_id	post_id	type	update_at	content_path	published_status	is_featured	metadata	Post	Reads
11	49	post	2023-11-06T03:06:5…	https://picsum.pho…	false	true	NULL	post	read
12	41	post	2023-11-06T03:06:5…	https://picsum.pho…	false	false	NULL	post	read
13	42	post	2023-11-06T03:06:5…	https://loremflick…	false	false	NULL	post	read
14	41	post	2023-11-06T03:06:5…	https://picsum.pho…	true	false	NULL	post	read
15	42	post	2023-11-06T03:06:5…	https://picsum.pho…	true	true	NULL	post	read
16	48	post	2023-11-06T03:06:5…	https://picsum.pho…	true	false	NULL	post	read
17	47	post	2023-11-06T03:06:5…	https://picsum.pho…	true	true	NULL	post	read
18	47	post	2023-11-06T03:06:5…	https://loremflick…	false	false	NULL	post	read
19	44	post	2023-11-06T03:06:5…	https://loremflick…	false	false	NULL	post	read
20	42	post	2023-11-06T03:06:5…	https://picsum.pho…	false	false	NULL	post	read

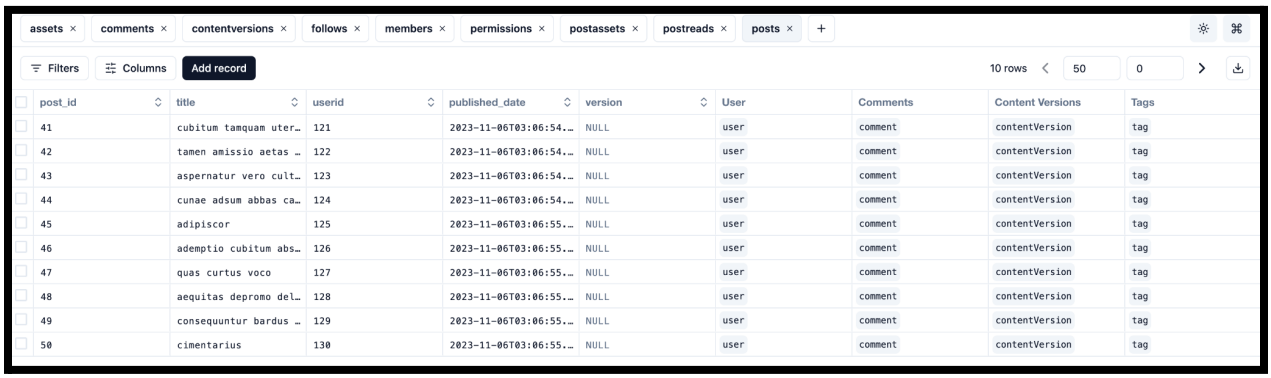
follower_id	entity_id	type	created_at	Follower
55	127	user	2023-11-06T03:07:06.000Z	follower
52	78	tag	2023-11-06T03:07:06.000Z	follower
58	79	tag	2023-11-06T03:07:06.000Z	follower
59	125	user	2023-11-06T03:07:06.000Z	follower
55	128	user	2023-11-06T03:07:06.000Z	follower
51	77	tag	2023-11-06T03:07:07.000Z	follower
56	75	tag	2023-11-06T03:07:07.000Z	follower
51	126	user	2023-11-06T03:07:07.000Z	follower
58	126	user	2023-11-06T03:07:07.000Z	follower
51	78	tag	2023-11-06T03:07:07.000Z	follower
59	121	user	2023-11-06T03:07:07.000Z	follower
57	128	user	2023-11-06T03:07:07.000Z	follower

memberid	name	email	password	User	Comments	Follows	Reads
51	Alexandra_Rippin85	Preston73@yahoo.com	IXbEQnxu1GckVm0	user	comment	follow	read
52	Eddie78	Delpha_Homenick52@yahoo…	onLb9SekaM3oK1o	user	comment	follow	read
53	Alison21	Dayana_Conn68@gmail.com	QKWeE5vGI3vbWQS	user	comment	follow	read
54	Mavis78	Jakob_Corkery@yahoo.com	4QtroCTplnj45VX	user	comment	follow	read
55	Gunnar_Murazik90	Colin.Kassulke10@gmail.…	GgXLcR0SakLPmhG	user	comment	follow	read
56	Darrion_Adams21	Van_Considine@yahoo.com	bHw4qRvbWjePKYM	user	comment	follow	read
57	Lela_Klocko80	Cole_Koch@hotmail.com	rlDWYo69huD45zi	user	comment	follow	read
58	Terry37	Naomi34@hotmail.com	a9QOELYbXqefisD	user	comment	follow	read
59	Vickie_Stoltenberg-Niko…	Tyra_Balistreri85@gmail…	acV0vSTQUqvs7aE	user	comment	follow	read
60	Daphnee.OConner60	Doyle69@hotmail.com	lM5zXZVKXaqYMHK	user	comment	follow	read

permission_id	name	description	Roles
45	post-read	read access for only published posts and versions	role
46	content-read	read access for all posts and versions	role
47	content-write	write access to all posts and versions	role
48	comments-read	read access for comments	role
49	comments-write	write access for comments	role
50	users-read	read access to total list of users & members	role
51	users-write	write access to users & members; e.g. add new use…	role
52	publish	permission to publish post	role

post_id	assetid	Post	Asset
46	1	post	asset
41	2	post	asset
41	3	post	asset
46	4	post	asset
44	5	post	asset
45	6	post	asset
44	7	post	asset
48	8	post	asset
45	9	post	asset
48	10	post	asset

post_id	post_version	memberid	Post	Member	Content Version
49	11	58	post	member	contentVersion
41	12	54	post	member	contentVersion
42	13	51	post	member	contentVersion
41	14	51	post	member	contentVersion
42	15	51	post	member	contentVersion
48	16	55	post	member	contentVersion
47	17	56	post	member	contentVersion
47	18	57	post	member	contentVersion
44	19	51	post	member	contentVersion
42	20	58	post	member	contentVersion

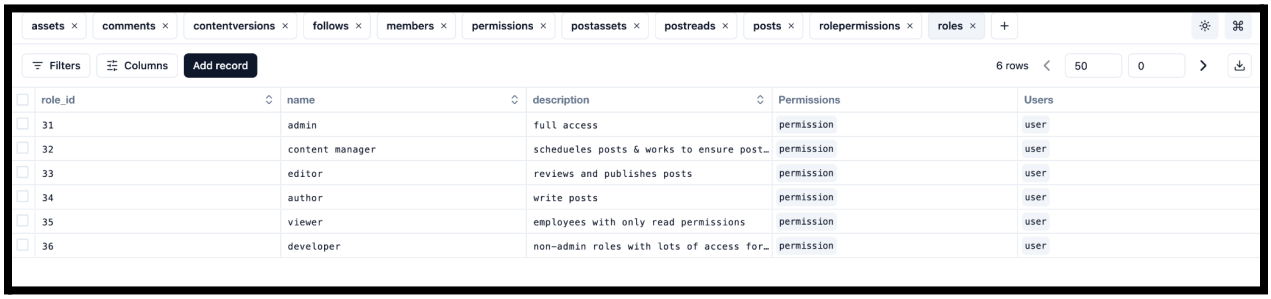


post_id	title	userid	published_date	version	User	Comments	Content Versions	Tags
41	cubitum tamquam uter…	121	2023-11-06T03:06:54.…	NULL	user	comment	contentVersion	tag
42	tamen amissio aetas …	122	2023-11-06T03:06:54.…	NULL	user	comment	contentVersion	tag
43	aspernatur vero cult…	123	2023-11-06T03:06:54.…	NULL	user	comment	contentVersion	tag
44	cunae adsum abbas ca…	124	2023-11-06T03:06:54.…	NULL	user	comment	contentVersion	tag
45	adipiscor	125	2023-11-06T03:06:55.…	NULL	user	comment	contentVersion	tag
46	ademptio cubitum abs…	126	2023-11-06T03:06:55.…	NULL	user	comment	contentVersion	tag
47	quas curtus voco	127	2023-11-06T03:06:55.…	NULL	user	comment	contentVersion	tag
48	aequitas depromo del…	128	2023-11-06T03:06:55.…	NULL	user	comment	contentVersion	tag
49	consequuntur bardus …	129	2023-11-06T03:06:55.…	NULL	user	comment	contentVersion	tag
50	cimentarius	130	2023-11-06T03:06:55.…	NULL	user	comment	contentVersion	tag

assets × comments × contentversions × follows × members × permissions × postassets × postreads × posts × rolepermissions ×

Filters | Columns | Add record | 33 rows | 50 | 0

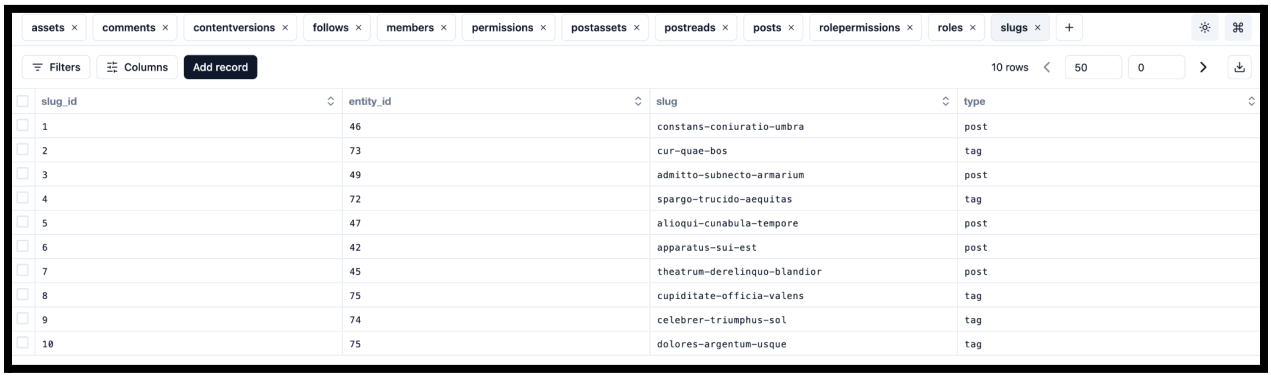
permission_id	role_id	Role	Permission
45	31	role	permission
46	31	role	permission
47	31	role	permission
48	31	role	permission
49	31	role	permission
50	31	role	permission
51	31	role	permission
52	31	role	permission
45	32	role	permission
46	32	role	permission
48	32	role	permission
50	32	role	permission
51	32	role	permission
52	32	role	permission
45	33	role	permission
46	33	role	permission
47	33	role	permission
48	33	role	permission
49	33	role	permission
52	33	role	permission
45	34	role	permission
46	34	role	permission
47	34	role	permission
48	34	role	permission
49	34	role	permission
45	35	role	permission



assets × comments × contentversions × follows × members × permissions × postassets × postreads × posts × rolepermissions × roles ×

Filters | Columns | Add record | 6 rows | 50 | 0

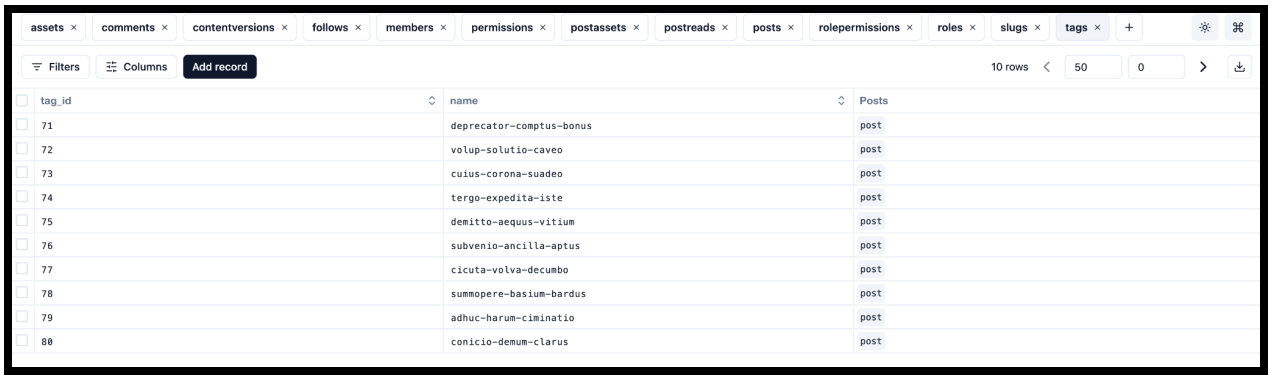
role_id	name	description	Permissions	Users
31	admin	full access	permission	user
32	content manager	schedueles posts & works to ensure post…	permission	user
33	editor	reviews and publishes posts	permission	user
34	author	write posts	permission	user
35	viewer	employees with only read permissions	permission	user
36	developer	non-admin roles with lots of access for…	permission	user



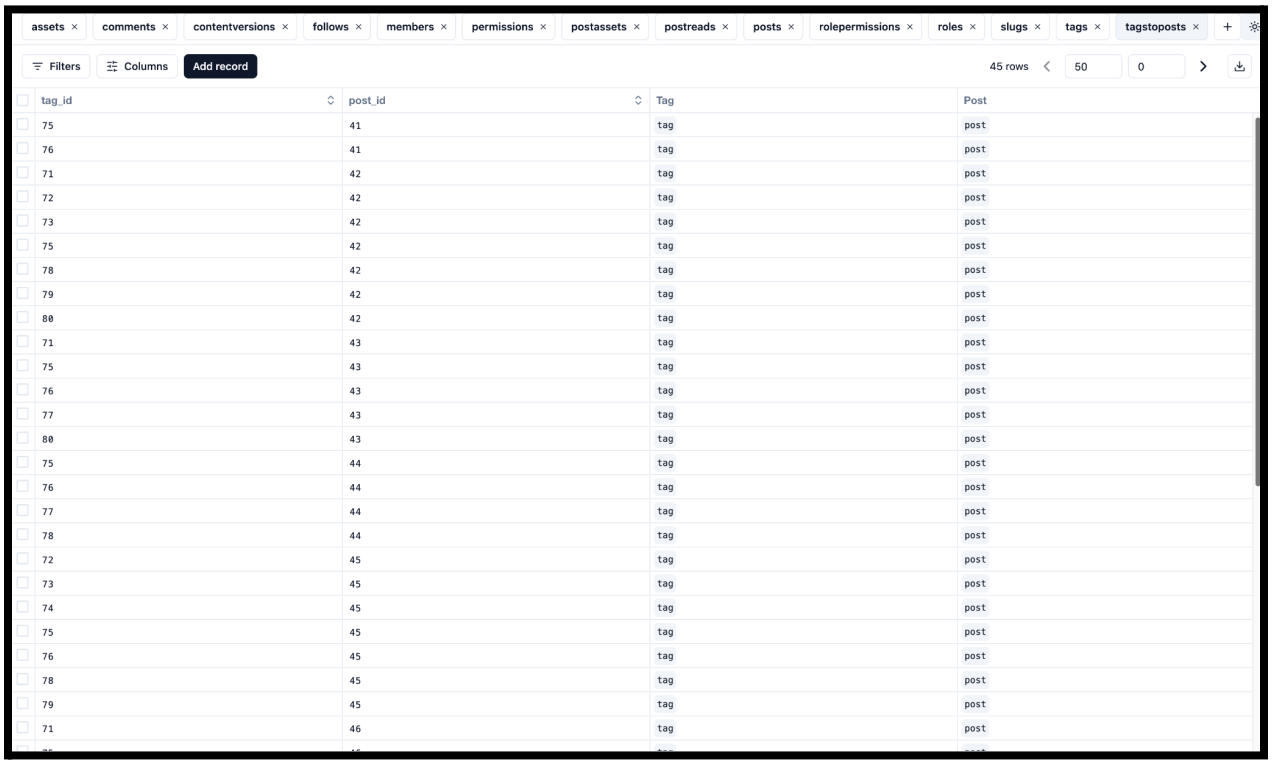
assets × comments × contentversions × follows × members × permissions × postassets × postreads × posts × rolepermissions × roles × slugs ×

Filters | Columns | Add record | 10 rows | 50 | 0

slug_id	entity_id	slug	type
1	46	constans-coniuratio-umbra	post
2	73	cur-quae-bos	tag
3	49	admitto-subnecto-armarium	post
4	72	spargo-trucido-aequitas	tag
5	47	alioqui-cunabula-tempore	post
6	42	apparatus-sui-est	post
7	45	theatrum-derelinquo-blandior	post
8	75	cupiditate-officia-valens	tag
9	74	celebrer-triumphus-sol	tag
10	75	dolores-argentum-usque	tag



tag_id	name	Posts
71	deprecator-comptus-bonus	post
72	volup-solutio-caveo	post
73	cuius-corona-suadeo	post
74	tergo-expedita-iste	post
75	demitto-aequus-vitium	post
76	subvenio-ancilla-aptus	post
77	cicuta-volva-decumbo	post
78	summopere-basium-bardus	post
79	adhuc-harum-ciminatio	post
80	conicio-demum-clarus	post



tag_id	post_id	Tag	Post
75	41	tag	post
76	41	tag	post
71	42	tag	post
72	42	tag	post
73	42	tag	post
75	42	tag	post
78	42	tag	post
79	42	tag	post
80	42	tag	post
71	43	tag	post
75	43	tag	post
76	43	tag	post
77	43	tag	post
80	43	tag	post
75	44	tag	post
76	44	tag	post
77	44	tag	post
78	44	tag	post
72	45	tag	post
73	45	tag	post
74	45	tag	post
75	45	tag	post
76	45	tag	post
78	45	tag	post
79	45	tag	post
71	46	tag	post

user_id	role_id	User	Role
121	33	user	role
122	35	user	role
123	31	user	role
124	33	user	role
125	35	user	role
126	32	user	role
127	33	user	role
128	34	user	role
129	35	user	role
130	34	user	role

user_id	name	email	password	bio	memberid	Member	Posts	Roles
121	Kelvin Wiza Sr.	Wilfred.Kilback89@ho…	GOiXHMdxugQNlko	reporter supporter, …	51	member	post	role
122	Mrs. Heidi Bradtke J…	Marcus89@gmail.com	k3LqwgMnkCRp7yM	person, veteran	52	member	post	role
123	Fred Nicolas	Colleen_Oberbrunner5…	GiAJ_6QQvbLgAUH	coach	53	member	post	role
124	James Klocko	Pablo.Rau@hotmail.com	nG54UwovBTkwO2I	leader, student, env…	54	member	post	role
125	Clarence Cronin	Merl.Kunde66@hotmail…	uSawXpC2Aks1LP6	netball lover, desig…	55	member	post	role
126	Melody Schumm	Aubrey3@hotmail.com	MeWx0KlRpIoSMf6	parent, musician, ne…	56	member	post	role
127	Eugene Mueller	Tess_Marquardt78@yah…	025GnfXK0qXlHGf	soundness supporter,…	57	member	post	role
128	Miss Edith Sporer	Bernard93@yahoo.com	qI8ZquFrIm1dcf9	hepatitis junkie	58	member	post	role
129	Johnathan Aufderhar I	Trenton_Fahey@hotmai…	aptrfiWBNpkgUC8	nation fan, parent	59	member	post	role
130	Darla Douglas	Myrtis.Dickens@yahoo…	4bMOaYrmIzqx6Xj	foodie, teacher	60	member	post	role

PART C: VIEWS

View 1: Computes a join of at least three tables

```
-- creates a view displaying comments associated with each users' posts
CREATE VIEW CommentsonUserPost AS
SELECT p.title, u.name AS author_name, c.text AS post_comment
FROM posts p
JOIN users u ON p.userid = u.user_id
JOIN comments c ON c.post_id = p.post_id;
```

View 2: Uses nested queries with the ANY or ALLoperator and uses a GROUP BY clause

```
-- creates a view displaying the total number of times a post has been viewed
CREATE VIEW TotalPostReads AS
SELECT post_id, COUNT(*) AS total_reads
FROM postreads
WHERE post_id = ANY (SELECT post_id FROM posts)
GROUP BY post_id;
```

View 3: A correlated nested query

```
-- creates a view displaying latest version of posts
CREATE VIEW PostLastestVersion AS
SELECT p.post_id, p.title, cv.version_id, cv.post_id
FROM posts p JOIN contentversions cv ON p.post_id = cv.post_id
WHERE cv.update_at = (SELECT MAX(update_at) FROM contentversions WHERE
post_id = p.post_id);
```

View 4: Uses a FULL JOIN

```
-- creates a view displaying posts and their associated asset IDs,
-- including posts with no assets
CREATE VIEW PostAssetAssociation AS
SELECT p.post_id, p.title, pa.assetid
FROM posts p
FULL OUTER JOIN postassets pa ON p.post_id = pa.post_id;
```

View 5: Uses nested queries with and of the set operations UNION, EXCEPT, or INTERSECT

```
-- creates a view displaying posts that are relevant to the follows of each member
-- (i.e. lists posts with tags or made by users whom the member follows)
CREATE VIEW RelevantPosts AS
SELECT f.follower_id, p.post_id, p.title, t.tag_id AS followed_id,
t.name AS followed_name, f.type AS follow_type
FROM posts p, tagstoposts tp, tags t
JOIN follows f ON f.entity_id = t.tag_id
WHERE p.post_id = tp.post_id AND tp.tag_id = t.tag_id AND f.type = 'tag'
UNION SELECT f.follower_id, p.post_id, p.title, u.user_id AS followed_id,
u.name AS followed_name, f.type AS follow_type
FROM posts p, users u
JOIN follows f ON f.entity_id = u.user_id
WHERE p.userid = u.user_id AND f.type = 'user’
```

View 6:

```
-- creates a view displaying total posts made by a user
CREATE VIEW TotalPosts AS
SELECT u.user_id, u.name, COUNT(p.post_id) AS total_posts
FROM users u
LEFT JOIN posts p ON u.user_id = p.userid
GROUP BY u.user_id, u.name;
```

View 7:

```
-- creates a view displaying tags associated with a post
CREATE VIEW TagsPostAssociation AS
SELECT p.post_id, p.title, t.name AS tag
FROM posts p
LEFT JOIN tagstoposts tp ON p.post_id = tp.post_id
```

```
LEFT JOIN tags t ON tp.tag_id = t.tag_id;
```

View 8:

```
-- creates a view displaying detailed content information for posts
CREATE VIEW DetailedContentInfo AS
SELECT p.post_id, p.title, cv.type, cv.content_path, cv.published_status
FROM posts p
JOIN contentversions cv ON p.post_id = cv.post_id;
```

View 9:

```
-- creates a view displaying roles and which permissions they have
CREATE VIEW RolePermissionsAssociation AS
SELECT r.name AS rolename, p.name AS permissionname
FROM roles r
JOIN rolepermissions rp ON r.role_id = rp.role_id
JOIN permissions p ON rp.permission_id = p.permission_id;
```

View 10:

```
-- creates a view displaying posts and their associated authors
CREATE VIEW PostAuthorAssociation AS
SELECT p.post_id, p.title AS post_title, u.user_id, u.name AS author
FROM posts p
LEFT JOIN users u ON p.userid = u.user_id;
```

PART D: E-R DIAGRAM

Added to GitHub repository