

A6: Modelo relacional

Por forma a demonstrar as relações do problema (apresentado na secção anterior) é usado um diagrama de classes UML específico, denominado de *Physical Data Model (PDM)*. O PDM da Figura 1 apresenta as entidades e as relações entre estas, assim como os atributos que as relacionam, incluindo também o domínio e a complexidade destes atributos e das ligações.

1 PDM

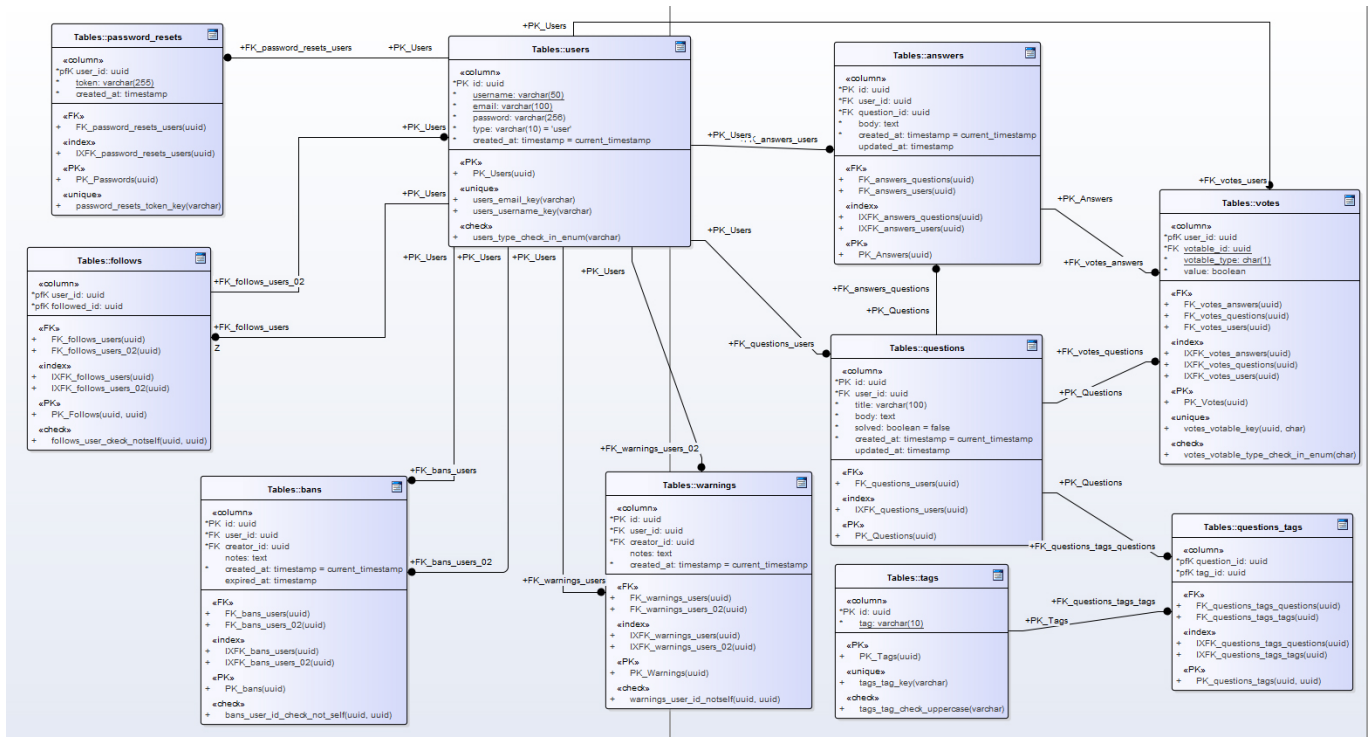


Figura 1: Diagrama UML de classes

O PDM pode também ser descrito em forma compacta através do conjunto das relações, restrições, atributos e domínio destes atributos, notação esta que apresentamos abaixo.

1.1 Relations

Password_Resets(<u>user_id</u> : UUID → Users, token: VARCHAR, created_at: TIMESTAMP)
Users(<u>id</u> : UUID, username: VARCHAR, email: VARCHAR, password: VARCHAR, type: VARCHAR, created_at: TIMESTAMP)
Follows(<u>user_id</u> : UUID → Users, <u>followed_id</u> : UUID → Users)
Bans(<u>id</u> : UUID, <u>user_id</u> : UUID → Users, <u>creator_id</u> : UUID → Users, notes: TEXT, created_at: TIMESTAMP, expired_at: TIMESTAMP)
Warnings(<u>id</u> : UUID, <u>user_id</u> : UUID → Users, <u>creator_id</u> : UUID → Users, notes: TEXT, created_at: TIMESTAMP)
Answers(<u>id</u> : UUID, <u>user_id</u> : UUID → Users, <u>question_id</u> : UUID → Questions, body: TEXT, created_at: TIMESTAMP, updated_at: TIMESTAMP)
Questions(<u>id</u> : UUID, <u>user_id</u> : UUID → Users, title: VARCHAR, body: TEXT, solved: BOOLEAN, created_at: TIMESTAMP, updated_at: TIMESTAMP)
Tags(<u>id</u> : UUID, tag: VARCHAR)
Question_Tags(<u>question_id</u> : UUID → Questions, <u>tag_id</u> : UUID → Tags)

Votes(user_id: UUID → Users, votable_id: UUID → Questions OR Answers, votable_type: CHAR, value: BOOLEAN)

Table 1: Tidder Esquema Relacional notação compacta

1.2 Domains

token	VARCHAR with up to 255 characters
username	VARCHAR between 5 and 100 characters
email	VARCHAR between 3 and 100 characters
password	VARCHAR with up to 256 characters (hashed)
type	VARCHAR with up to 10 characters DEFAULT "user"
created_at	TIMESTAMP DEFAULT current_timestamp
title	VARCHAR up to 100 characters
solved	BOOLEAN DEFAULT false
tag	VARCHAR with up to 10 characters
votable_type	CHAR "Q" or "A"

Table 2: Domínio dos atributos

1.3 Tuple Checks

Restrições de verificação. Servem para garantir que os atributos estão dentro dos domínios especificados.

```
Create Table users {
  ...
  username VARCHAR(50) UNIQUE NOT NULL,
  password VARCHAR(256) UNIQUE NOT NULL,
  type VARCHAR(10) NOT NULL,
  ...
  CHECK(username.length > 4),
  CHECK(email SIMILAR TO '[[[:ALNUM:]]._%-]+@[[:ALNUM:]].-]+\.[[:ALPHA:]]+')
  CHECK(type IN ('users', 'mod', 'admin'))
}
```

```
Create Table follows {
  ...
  user_id UUID,
  followed_id UUID,
  ...
  CHECK(user_id != followed_id)
}
```

```
Create Table bans{
  ...
  user_id UUID,
  creator_id UUID,
  ...
  CHECK(user_id != creator_id)
```

```
}
```

```
Create Table warnings {  
  ...  
  user_id UUID,  
  creator_id UUID,  
  ...  
  CHECK(user_id != creator_id)  
}
```

```
Create Table tags {  
  ...  
  tag VARCHAR(10),  
  ...  
  CHECK(UPPER(tag))  
}
```

```
Create Table votes {  
  ...  
  votable_type CHAR,  
  ...  
  CHECK(votable_type IN ('Q', 'A'))  
}
```

— *LBAW*

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