



Filer

Student Name	Mohamed Abd El-Salam Saad
Student ID	1618120180100267
Level	Two
Department	General

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System Description

This is an online file backup service. It allows users to upload files, organize them in folders and search through their files really quickly.

Data Dictionaries

User

Field Name	Data Type	Description	Example
id	int		
password	varchar		
last_login	datetime		
is_superuser	tinyint		
username	varchar		
first_name	varchar		
Last_name	varchar		
email	varchar		
is_staff	tinyint		
is_active	tinyint		
data_joined	datetime		

File folder permission

Field Name	Data Type	Description	Example
id	int		
type	smallint		
everybody	tinyint		

can_edit	smallint		
can_read	smallint		
can_add_children	smallint		
folder_id	int		
user_id	int		
group_id	int		

Content-type

The interactions table is used to store user interactions to collect later for analysis.

Field Name	Data Type	Description	Example
id	int		
app_label	varchar	The user interacting	
model	varchar	The song they are interacting with	

Auth group

Field Name	Data Type	Description	Example
id	int		
name	varchar		

File clipboard item

Field Name	Data type	Description	Example
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id	int		
clipboard_id	int		
file_id	int		

File Folder

Field Name	Data Type	Description	Example
id	int		
name	varchar		
upload_at	datetime		
created_at	datetime		
modified_at	datetime		
lft	int		
tree_id	int		
level	int		
owner_id	int		
parent_id	int		

Filer file

Field Name	Data Type	Description	Example
id	varchar		
file	varchar	The album the song belongs to	
_file_size	bigint	The artist who released the song	
sha1	varchar	Whether the song is liked by the user or	

		not	
has_all_mandatory_data	tinyint	Song length	
original_filename	varchar	Track number on the album	
name	varchar	Disc number on the album	
description	longtext		
uploaded_at	datetime	Where the song is stored on the server	
modified_at	datetime	Modification time	
modified_at	datetime		
is_public	tinyint		
folder_id	int		
owner_id	int		
polymorphic_ctype_id	int		

Filer thumbnail option

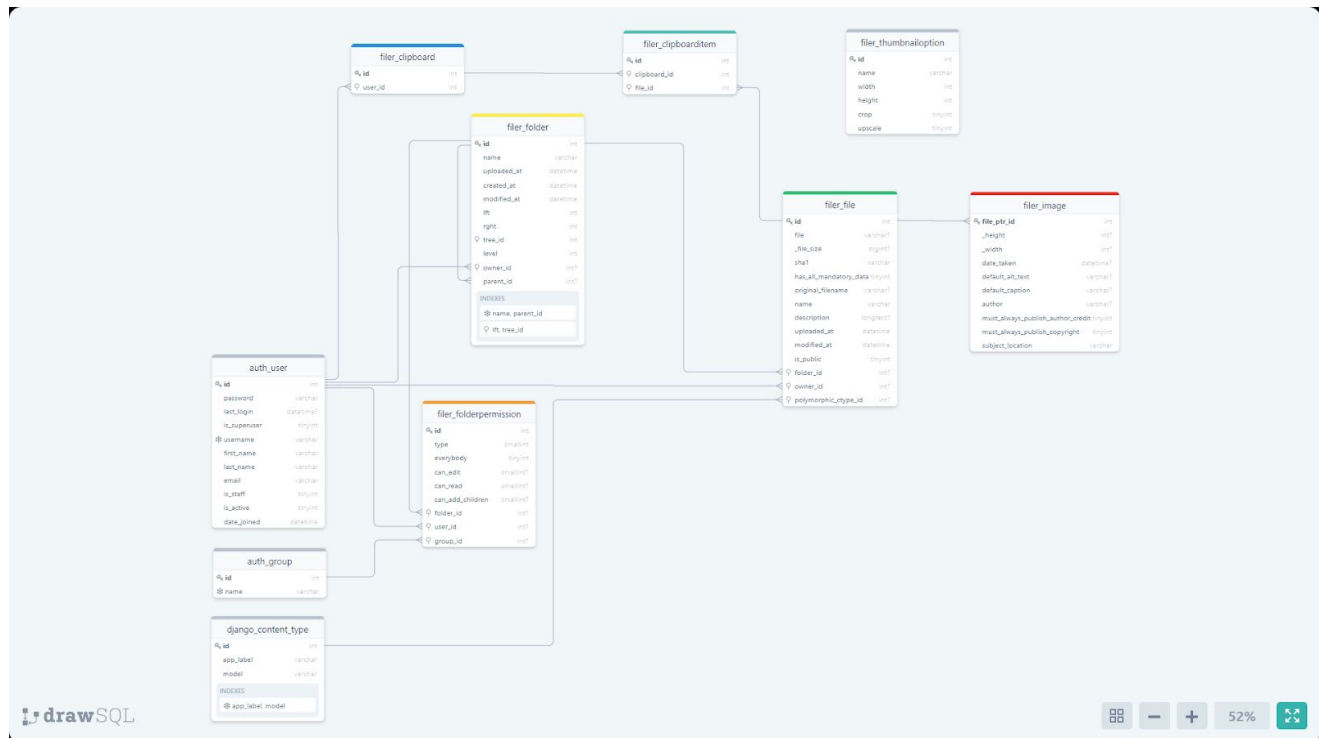
Field Name	Data Type	Description	Example
id	int		
name	varchar		
width	int		
height	int		
crop	tinyint		
upscale	tinyint		

Filer image

Field Name	Data Type	Description	Example
file_ptr_id	int		
_height	int		
_width	int		
data_taken	datetime		
default_text	varchar		
default_caption	varchar		
author	varchar		
must_always_public sh_author_credit	tinyint		
must_always_public sh_author_copyright	tinyint		
subject_location	varchar		

Entity Relationship Diagram

This diagram explains the relationships between every field of a table in the database.



Select Statements using Different Functions

Find the biggest file we have

```
SELECT MAX(`_file_size`) FROM `filer_file`
```

How many files does a user have?

```
SELECT COUNT(*) FROM `filer_file` WHERE `owner_id`=...
```

What is the last file a user uploaded?

```
SELECT LAST(*) FROM `filer_file` WHERE `owner_id`=...
```

Select statements using Subquery

Select all images that belong to a user

```
SELECT * FROM `filer_image` WHERE `file_ptr_id` IN (SELECT `id` FROM `filer_file` WHERE `owner_id`=...)
```

Select all clipboard items that belong to a user

```
SELECT * FROM `filer_clipboarditem` WHERE `clipboard_id` IN (SELECT `id` FROM `filer_clipboard` WHERE `user_id`=...)
```

Select all folders that belong to a certain auth group

```
SELECT * FROM `filer_folder` WHERE `id` IN (SELECT `folder_id` FROM `filer_folderpermission` WHERE `group_id`=...)
```

Select statements using Count and Group functions

Select last file uploaded of every folder of a user

```
SELECT LAST(`modified_at`) FROM `filer_file` WHERE `owner_id`=...  
GROUP BY `folder_id`
```

How many files are in a folder?

```
SELECT COUNT(*) FROM `filer_file` WHERE `folder_id`=...
```

Select statements using Different Joins

List folders in a user directory with permissions

```
SELECT * FROM `filer_folder`, `filer_folderpermission` INNER JOIN  
`filer_folderpermission` ON `filer_folder`.id =  
`filer_folderpermission`.folder_id WHERE `owner_id`=... AND  
`parent_id`=...
```

Select files with image thumbnails of a folder

```
SELECT * FROM `filer_file`, `filer_image` INNER JOIN `filer_image` ON  
`filer_file`.id = `filer_image`.file_ptr_id WHERE `owner_id`=... AND  
`folder_id`=...
```

List clipboard items with their owners

```
SELECT * FROM `filer_clipboarditem`, `filer_clipboard` LEFT JOIN  
`filer_clipboard` ON `filer_clipboarditem`.clipboard_id =  
`filer_clipboard`.id
```

Insert Statements

Create a new folder

```
INSERT INTO `filer_folder` (`name`, `level`, `tree_id`, `parent_id`,  
`user_id`) VALUES (...)
```

Upload a new file

```
INSERT INTO `filer_file` (`folder_id`, `owner_id`, `name`,  
`is_public`) VALUES (...)
```

Create a new thumbnail option

```
INSERT INTO `filer_thumbnailoption` (`name`, `width`, `height`,  
`crop`, `upscale`) VALUES (...)
```

Create a new clipboard item into a clipboard

```
INSERT INTO `filer_clipboarditem` (`clipbaord_id`, `file_id`) VALUES  
(...)
```

Create a new auth group

```
INSERT INTO `auth_group` (`name`) VALUES (...)
```

Update Statements

Update file folder permissions

```
UPDATE `filer_folderpermission` SET `can_read`=..., `can_edit`=...  
WHERE `folder_id`=...
```

Update auth group name

```
UPDATE `auth_group` SET `name`=... WHERE `id`=...
```

Update file folder name

```
UPDATE `filer_folder` SET `name`=... WHERE `id`=...
```

Update file description

```
UPDATE `filer_file` SET `description`=... WHERE `id`=...
```

Suspend a user

```
UPDATE `auth_user` SET `is_active`=FALSE WHERE `id`=...
```

Delete Statements

Delete a thumbnail option

```
DELETE FROM `filer_thumbnailoption` WHERE `id`=...
```

Delete a filer with image thumbnail

```
DELETE FROM `filer_image` WHERE `file_ptr_id`=<file_id>  
DELETE FROM `filer_file` WHERE `id`=<file_id>
```

Delete a clipboard item

```
DELETE FROM `filer_clipboarditem` WHERE `id`=...
```

Delete a folder with its contents

```
DELETE FROM `filer_file` WHERE `folder_id` IN (SELECT `id` FROM  
`filer_folder` WHERE `parent_id`=<folder_id>) OR  
`folder_id`=<folder_id>  
DELETE FROM `filer_folderpermission` WHERE `folder_id` IN (SELECT  
`id` FROM `filer_folder` WHERE `parent_id`=<folder_id>) OR  
`folder_id`=<folder_id>  
DELETE FROM `filer_folder` WHERE `parent_id`=<folder_id>  
DELETE FROM `filer_folder` WHERE `id`=<folder_id>
```

Delete an auth group

```
DELETE FROM `auth_group` WHERE `id`=...
```

References

- What is a data dictionary?
<https://www.tutorialspoint.com/What-is-Data-Dictionary>
- What is an entity relationship diagram?
<https://www.smartdraw.com/entity-relationship-diagram/>
- SQL Reference from W3Schools
https://www.w3schools.com/sql/sql_ref_keywords.asp

GitHub Repository Link

[GitHub Repository](#)