Course basic information

Code	Course Name	Credit Hours		
		Lecture	Practice	Total
IS212	Database	2	2	3

Project title

(comfortable sweet home system)

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Level: second
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System Description

It is a control management system for home with a security for parents and children. It's an automation, electronic control system for mechanical and electrical equipment like lighting, fire system, power system and security.

Data Dictionaries

Comfy_cms_translations

Field Name	Data Type	Description	Example
id	Int		
locale	varchar		
Page_id	Int		
Layout_id	Int		
label	Int		
contant_cache	text (optional)		
is_published	Boolean	If you want to published it	True
updated_at	datetime		
created_at	datetime		

Comfy_cms_fragments

Field Name	Data Type	Description	Example
id	Int		
recordable_id	Int	Owner user id	
recordable_type	varchar		
identifier	varchar		

tag	varchar		
content	text		
boolean	Boolean		True
datetime	datetime		
created_at	datetime		
updated_at	datetime		

Comfy_cms_pages

Field Name	Data Type	Description	Example
id	Int		
site_id	Int		
layout_id	Int		
parent_id	Int		
target_page_id	Int		
label	varchar		
slog	varchar		
full_path	varchar		
content_cache	text		
position	Int		
children_count	Int		
is_published	Boolean	If you want to publish	True
created_at	datetime		
updated_at	datetime		

Comfy_cms_revisions

Field Name	Data Type	Description	Example
id	Int		
record_type	varchar		
record_id	Int		
data	text		
created_at	datetime		

Comfy_cms_layouts

Field Name	Data Type	Description	Example
id	Int		
parent_id	Int		
site_id	Int		
app_layout	varchar		
label	varchar		
identifier	varchar		
content	text		
css	text		
js	text		
position	int		
created_at	datetime		
updated_at	datetime		

Comfy_coms_sites

Field Name	Data Type	Description	Example
id	Int		
Label	varchar		
Identifier	varchar		
Hostname	varchar		
Path	varchar		
Locale	varchar		
created_at	datetime		
updated_at	datetime		

Comfy_cms_snippets

Field Name	Data Type	Description	Example
id	Int		
site_id	varchar		
label	varchar		
Identifier	varchar		
content	text		
Position	Int		
created_at	datetime		
updated_at	datetime		

Comfy_cms_categorizations

Field Name	Data Type	Description	Example
id	Int		
Category_id	Int		
Categorized_type	varchar		
Categorized_id	Int		

Comfy_cms_files

Field Name	Data Type	Description	Example
id	Int		
site_id	Int		
label	varchar		
Description	text		
Position	Int		
created_at	datetime		
updated_at	datetime		

Comfy_cms_categories

Field Name	Data Type	Description	Example
id	Int		
site_id	Int		
Categorized_type	varchar		
label	varchar		

Entity Relationship Diagram

This diagram explains the relationships between every field of a table in the database.
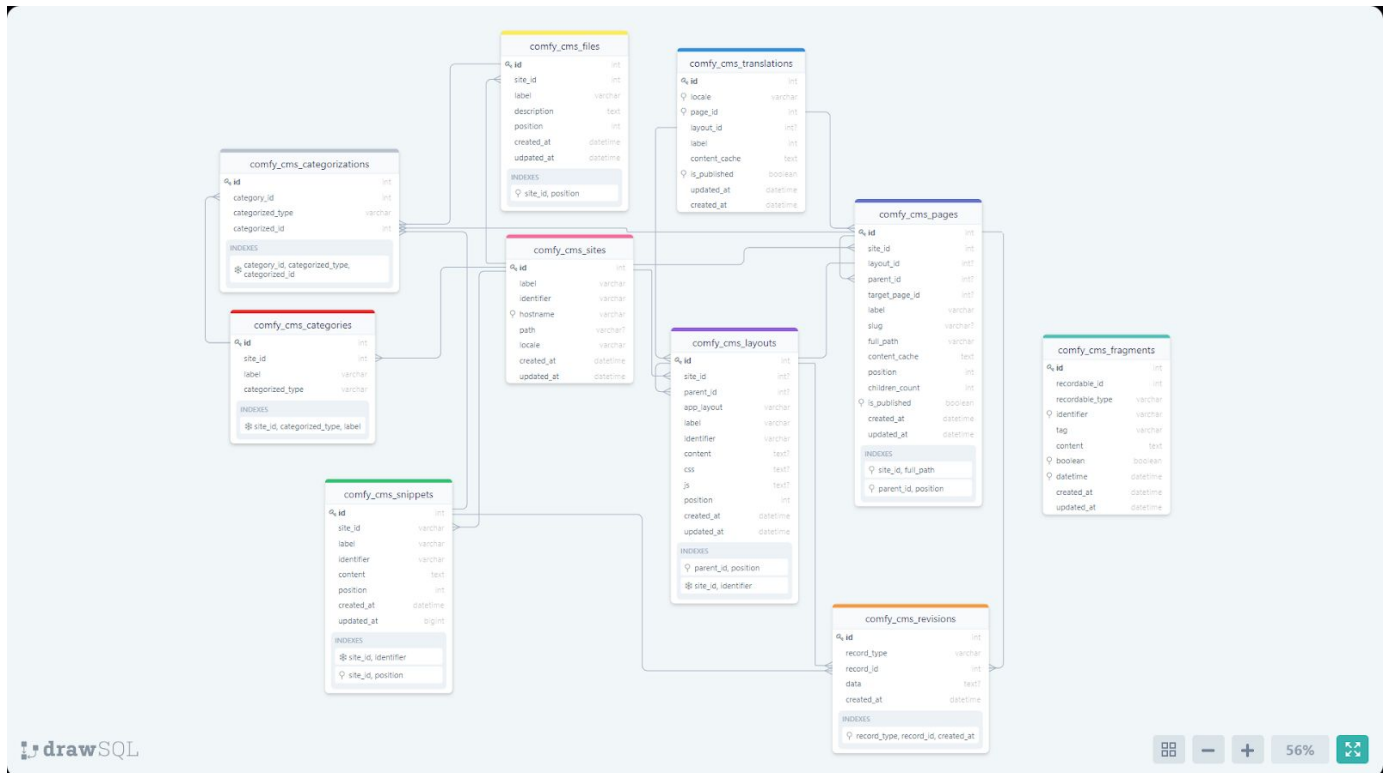
Select Statements using Different Functions

How many files do we have?

```
SELECT COUNT(*) FROM `comfy_cms_files`
```

What many pages do we have for a site?

```
SELECT SUM(`site_id`) FROM `comfy_cms_pages` WHERE `site_id`=<site_id>
```

Get last revision

```
SELECT LAST(*) FROM `comfy_cms_revisions` WHERE `record_id`=<record_id>
```

Select statements using Subquery

Select files of a categorized type

```
SELECT * FORM `comfy_cms_files` WHERE `site_id` IN (SELECT `categoried_id`
FROM `comfy_cms_categorizations` WHERE
`categorized_type`=<categorized_type>)
```

Select sites of category type

```
SELECT * FORM `comfy_cms_sites` WHERE `id` IN (SELECT `site_id` FROM
`comfy_cms_categories` WHERE `categorized_type`=<categorized_type>)
```

What are our unused layout?

```
SELECT * FROM `comfy_cms_layouts` WHERE `id` NOT IN (SELECT `layout_id`
FROM `comfy_cms_pages` GROUP BY `layout_id`)
```

Select statements using Count and Group functions

Select all unused files

```
SELECT * FROM `comfy_cms_files` WHERE `site_id` NOT IN (SELECT `id` FROM
`comfy_cms_sites` GROUP BY `id`)
```

How many revisions does a snippet record type have?

```
SELECT COUNT(*) FROM `comfy_cms_revisions` WHERE `record_type`=...
```

Select statements using Different Joins

What are the original categories of categorizations?

```
SELECT * FROM `comfy_cms_categorizations`, `comfy_cms_categories` INNER
JOIN `comfy_cms_cateogries` ON comfy_cms_categorizations.category_id =
comfy_cms_categories.id
```

What files belong to what sites?

```sql
SELECT * FROM `comfy_cms_files`, `comfy_cms_sites` LEFT JOIN
`comfy_cms_sites` ON comfy_cms_files.site_id = comfy_cms-sites.id
```

Insert Statements

Create a category

```sql
INSERT INTO `comfy_cms_categories` (`site_id`, `label`,
`categorized_type`) VALUES (...)
```

Create a categorization

```sql
INSERT INTO `comfy_cms_categorizations` (`category_id`,
`categorized_type`, `categorized_id`) VALUES (...)
```

Create a new revision

```sql
INSERT INTO `comfy_cms_revisions`  (`record_type`, `record_id`, `data`)
VALUES (...)
```

Upload a new file entity

```sql
INSERT INTO `comfy_cms_files` (`site_id`, `label`, `description`,
`position`) VALUES (...)
```

Create a new site

```sql
INSERT INTO `comfy_cms_sites` (`label`, `identifier`, `hostname`, `path`,
`locale`) VALUES (...)
```

Update Statements

Update category label

```sql
UPDATE `comfy_cms_categories` SET `label`=... WHERE `id`=...
```

Update site locale

```
UPDATE `comfy_cms_sites` SET `locale`=... WHERE `id`=...
```

Update page label

```
UPDATE `comfy_cms_pages` SET `label`=...  WHERE `id`=...
```

Upload new layout css

```
UPDATE `comfy_cms_layouts` SET `css`='...' WHERE `id`=...
```

Upload page children count

```
UPDATE `comfy_cms_pages` SET `children_count`= (SELECT COUNT(*) FROM `comfy_cms_pages` WHERE `parent_id` = <id>) WHERE `id`=<id>
```

Delete Statements

Delete a translation

```
DELETE FROM `comfy_cms_translation` WHERE `id`=...
```

Delete all child pages

```
DELETE FROM `comfy_cms_pages` WHERE `parent_id`=...
```

Delete all layouts that are not used

```
DELETE FROM `comfy_cms_layouts` WHERE `id` NOT IN (SELECT `layout_id` FROM `comfy_cms_pages` GROUP BY `layout_id`)
```

Delete all unattached files

```
DELETE FROM `comfy_cms_files` WHERE `site_id` NOT IN (SELECT `id` FROM `comfy_cms_sites` GROUP BY `id`)
```

Delete revisions past a certain date

```
DELETE FROM `comfy_cms_revisions` WHERE `created_at` > ...
```

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