High-Level-Requirements

As the database team, we are envisioning creating a relational database where there is a data table for every possible class in the system. This will allow us to abstract a lot of the functionality in our interface, where there will be a fundamental set of "getter" and "setter" methods that the backend development teams can use to access the database. From here, each class will extend from our fundamental interface class. This will allow each class to add methods that are specific to the data items that will be associated with each class. Overall, this will enhance organization because we will not have to deal with having cumbersome amounts of data associated with each class, thus allowing us to simplify the process of accessing and altering data with each object in the system.

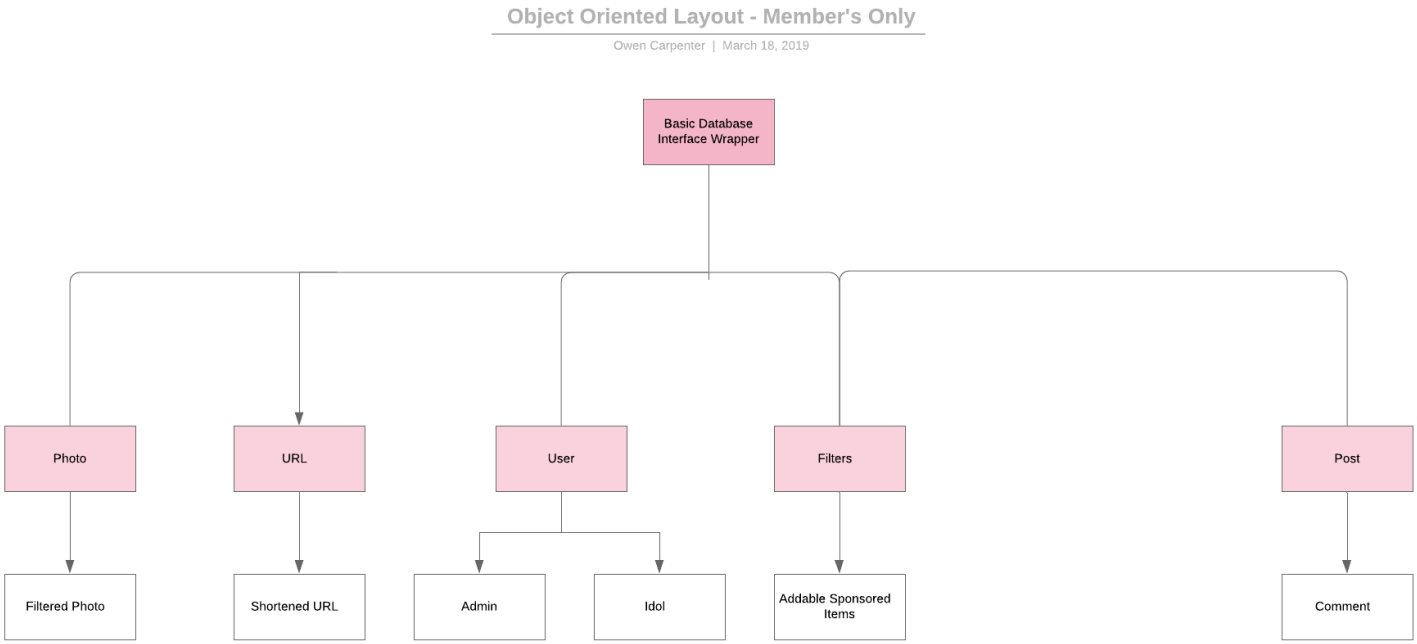
Additionally, we will be implementing this using an Adapter Design Pattern. This design pattern allows us to create an interface that will allow functionality inbetween classes that backend model teams will use that may otherwise be incompatible. Thus, we will create adapter classes that will merge similar functionalities between objects and inherited objects, simplifying the model groups' interactions with the database. Overall, our adapter classes will allow the model groups to use only one class to access what may be a variety of different tables in the database. This will ensure clean code and simplified, congregated interactions.

As an overarching example, the fundamental methods of our interface will be something like:

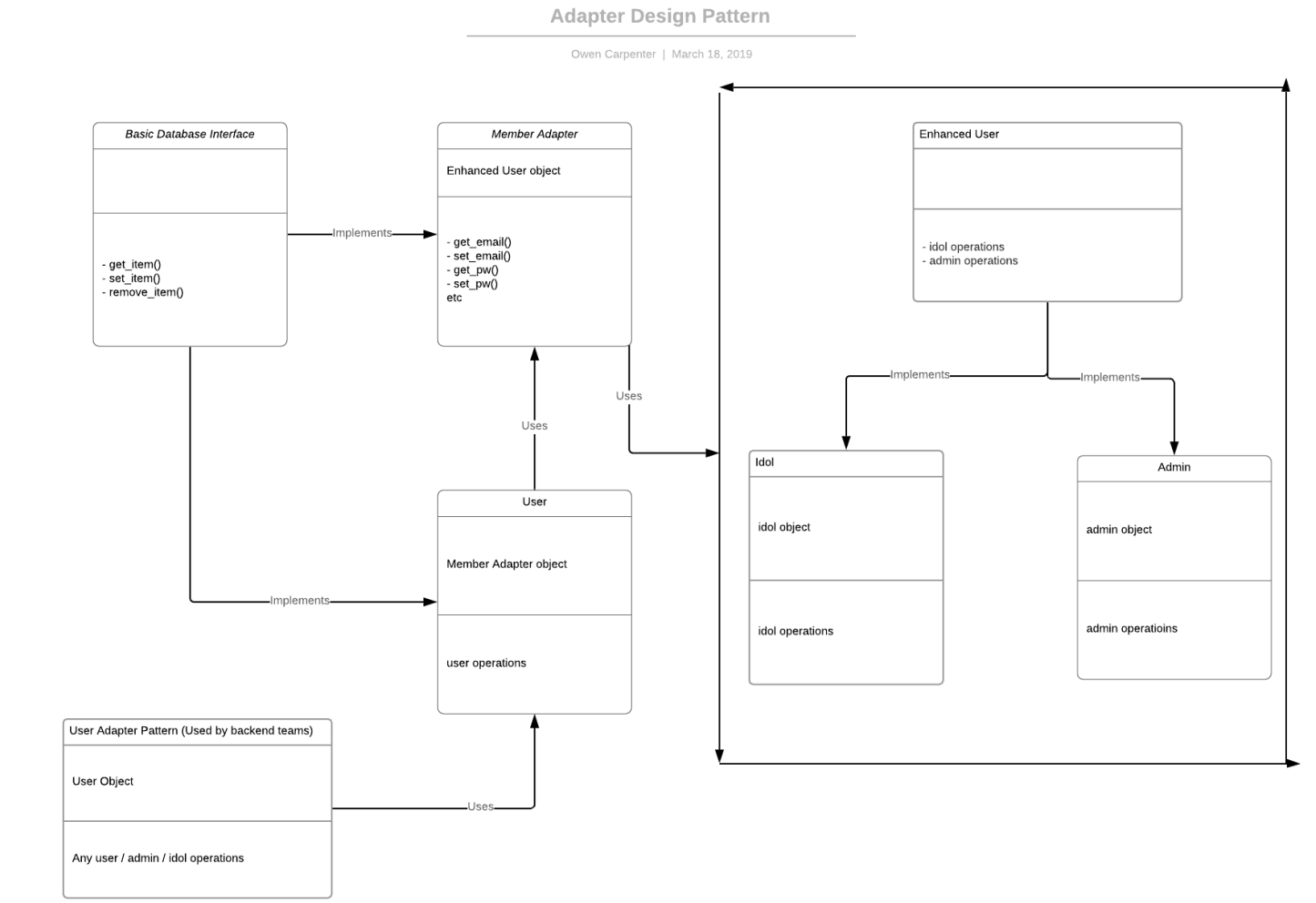
- get_id
- set_id
- remove_item

Then, each subsequent class will inherit these methods and then define class specific ones. An example for the User object would be:

- get_id
- set_id
- remove_item
- get_email
- set_email
- get_pw
- set_pw
- get_cc_num
- set_cc_num
- get_cvv
- set_cvv
- get_is_admin
- set_is_admin
- get_is_idol
- set_is_idol



Adapter Pattern Design


Adapter Design Pattern
Owen Carpenter | March 18, 2019
Basic Database Interface
- get_item()
- set_item()
- remove_item()
Implements
Member Adapter
Enhanced User object
- get_email()
- set_email()
- get_pw()
- set_pw()
etc
Enhanced User
- idol operations
- admin operations
Implements
Implements
Uses
Uses
Idol
idol object
idol operations
Admin
admin object
admin operatioins
User
Member Adapter object
user operations
Implements
User Adapter Pattern (Used by backend teams)
User Object
Any user / admin / idol operations
Uses

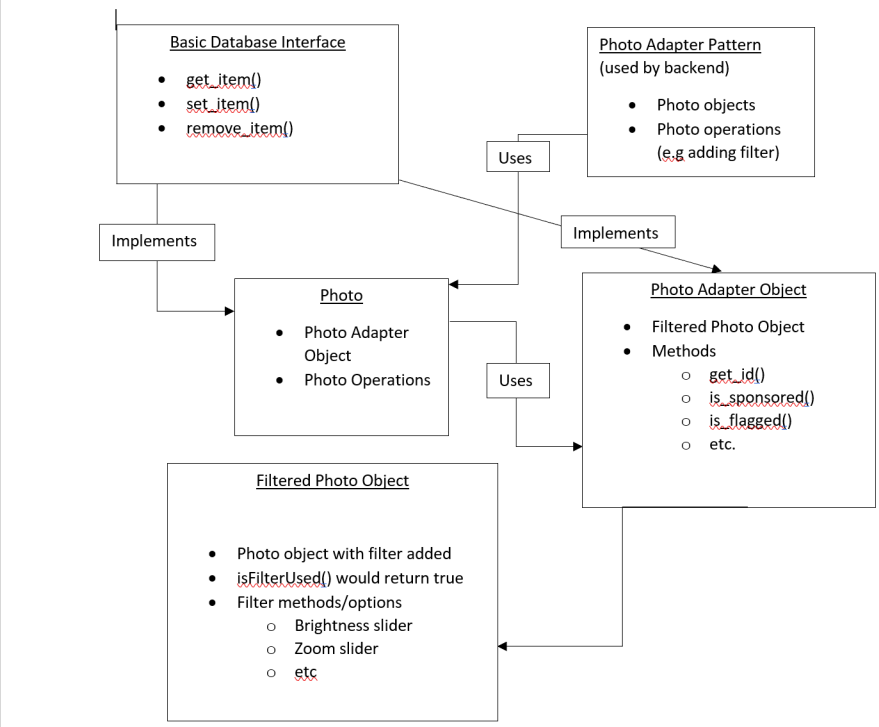
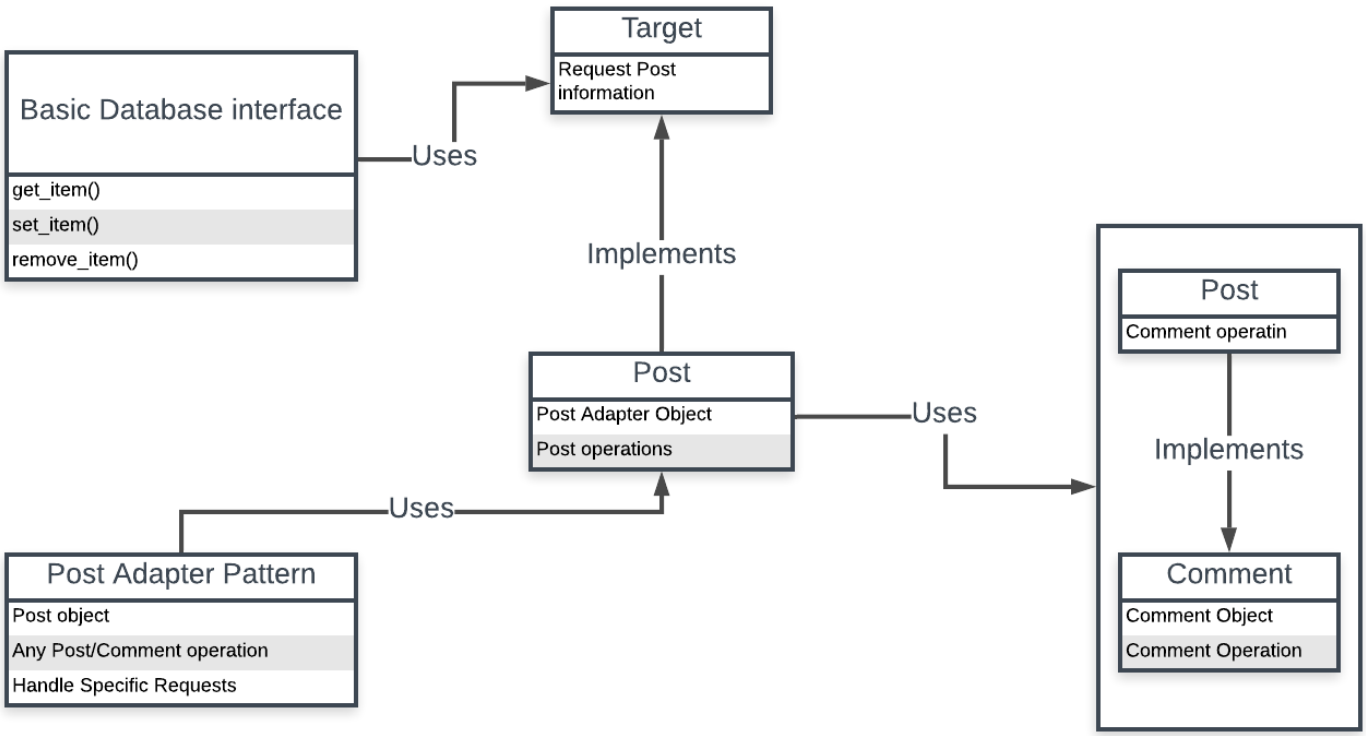
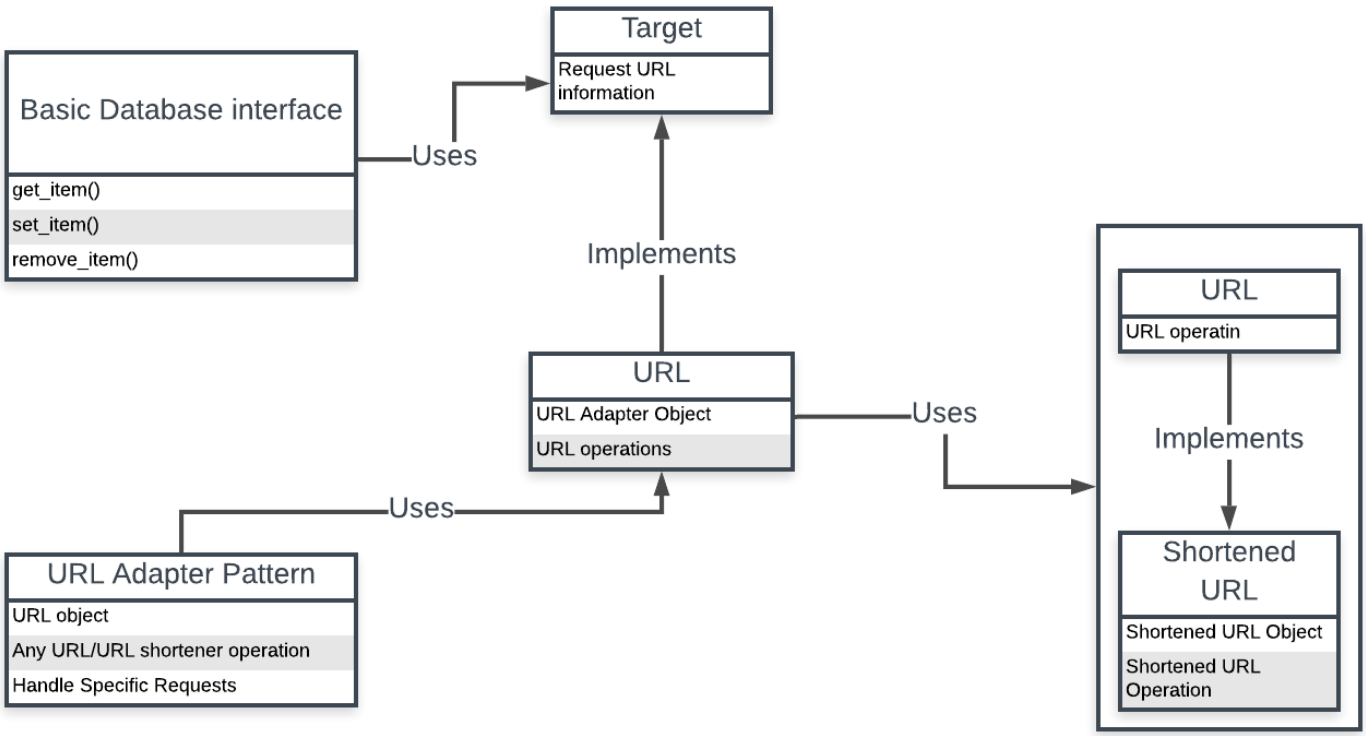


Photo – Filtered Photo Adapter Pattern
Basic Database Interface
get_item()
set_item()
remove_item()
Photo Adapter Pattern
(used by backend)
Photo objects
Photo operations
(e.g adding filter)
Uses
Implements
Implements
Photo
Photo Adapter Object
Photo Operations
Uses
Photo Adapter Object
Filtered Photo Object
Methods
get_id()
is_sponsored()
is_flagged()
etc.
Filtered Photo Object
Photo object with filter added
isFilterUsed() would return true
Filter methods/options
Brightness slider
Zoom slider
etc





Data Tables

User

ID	Email	Password	CC Number	CVV	Is Admin	Is Idol	Points	Visibility	Invited By
Integer	String	String	Integer	Integer	Boolean	Boolean	Integer	Boolean	Integer

URL

ID	Text/Link	Shortened URL Key	User Key	Associated Website
Integer	String	Integer	Integer	String

Shortened URL

ID	Text/Link	Shortened URL Key	User Key	Associated Website
Integer	String	Integer	Integer	String

Sponsored Items

ID	Company	Points Given	Description	Size	Times Used
Integer	String	Integer	String	Int x Int	Integer

Comment

ID	User Key	Original Post Key	Content of Comment	Date Created	Points Given
Integer	Integer	Integer	String	Date and Time Field	Integer

Filtered Image

ID	Filters Key	Sponsored Items Key	Original Image Key	Points Given	Done by Admin	Post Key	Date Created	User Key
Integer	Integer	Integer	Integer	Integer	Boolean	Integer	Date & Time Field	Integer

Filters

ID	Filter Name	Description	Points Given
Integer	String	String	Integer

Image

ID	User Key	Image Format	Date Created	Associated Website	Flagged	Filtered Photo Key	Post Key
Integer	String	String	Date & Time Field	String	Boolean	Integer	Integer

Post

ID	Image Key	Comment Key	User Key	Date Created	Date Modified	Content	Is Flagged
Integer	Integer	Integer	Integer	Date & Time Field	Date & Time Field	String	Boolean

Class Method Calls

URL

- get_id()
- set_id()
- remove_item()
- get_link()
- set_link()
- get_shortened_key()
- set_shortened_key()
- get_user_key()
- set_user_key()
- get_website()
- set_website()

Shortened URL

- get_id()
- set_id()
- remove_item()
- get_link()
- set_link()
- get_original_key()
- set_original_key()
- get_user_key()
- set_user_key()
- get_website()
- set_website()

Sponsored Item

- get_id()
- set_id()
- remove_item()
- get_company()
- set_company()
- get_points()
- set_points()
- get_description()
- set_description()
- get_size()

- set_size()
- get_times_used()
- set_times_used()

Comment

- get_id()
- set_id()
- remove_item()
- get_key_post()
- set_key_post()
- get_comment()
- set_comment()
- get_time_posted()
- set_time_posted()
- get_points()
- set_points()

Filtered Image

- get_id()
- set_id()
- remove_item()
- get_filters()
- set_filters()
- get_user_key()
- set_user_key()
- get_added_items()
- set_added_items()
- get_post()
- set_post()
- get_points()
- set_points()
- get_done_by_admin()
- set_done_by_admin()
- get_time()
- set_time()

Filters

- get_id()
- set_id()
- remove_item()
- get_name()
- set_name()
- get_description()
- set_description()
- get_points()
- set_points()

Image

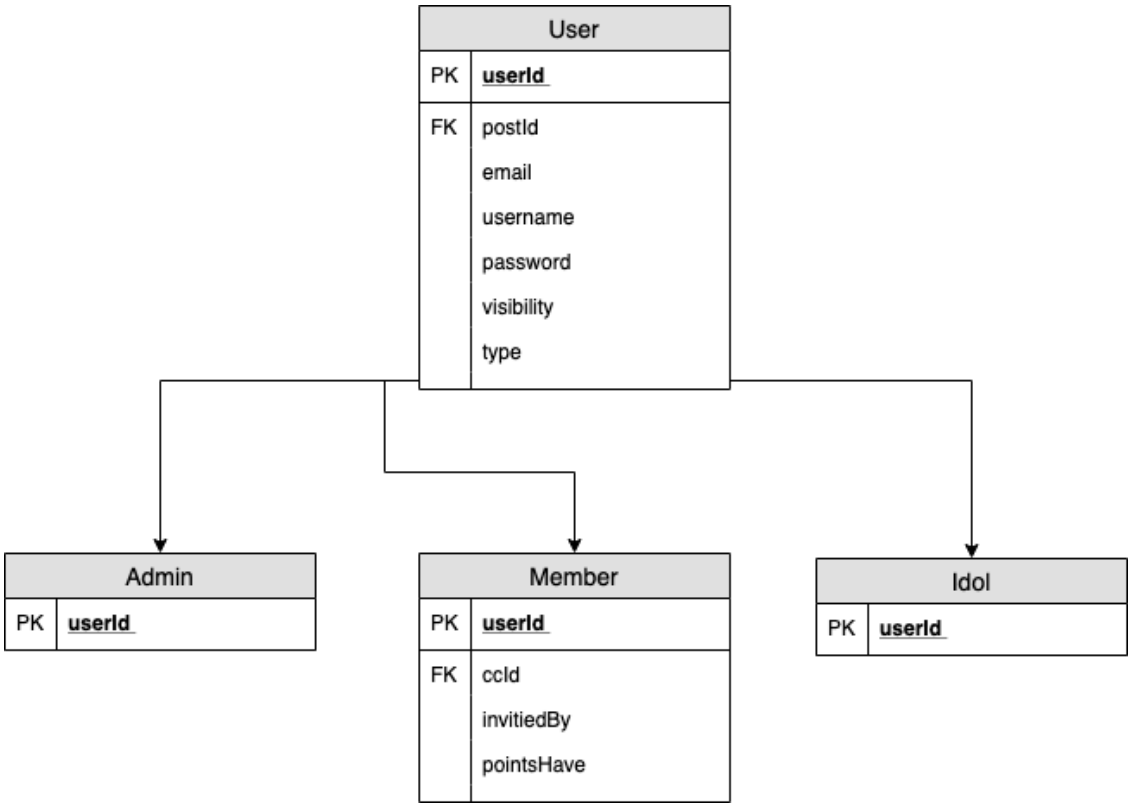
- get_id()
- set_id()
- remove_item()
- get_post()
- set_post()
- get_time()
- set_time()
- get_user_key()
- set_user_key()
- get_format()
- set_format()
- get_time()
- set_time()
- get_website()
- set_website()
- get_is_flagged()
- set_is_flagged()
- get_filtered()
- set_filtered()

Post

- get_id()
- set_id()
- remove_item()
- get_image()
- set_image()
- get_comments()
- set_comments()
- get_user_key()
- set_user_key()
- get_time_modified()
- set_time_modified()
- get_time()
- set_time()
- get_content()
- set_content()
- get_is_flagged()
- set_is_flagged()

ER diagrams

User


User
PK
userId
FK
postId
email
username
password
visibility
type
Admin
PK
userId
Member
PK
userId
FK
ccId
invitiedBy
pointsHave
Idol
PK
userId

Image

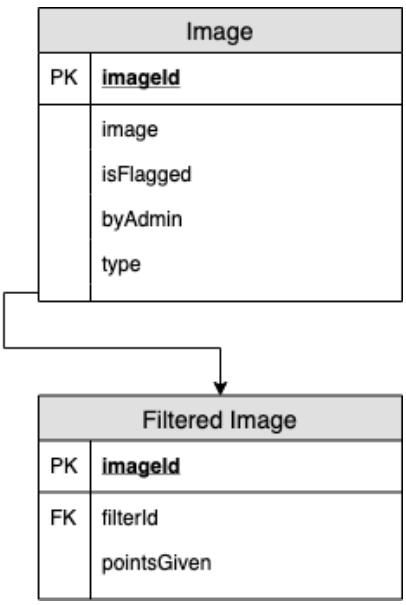
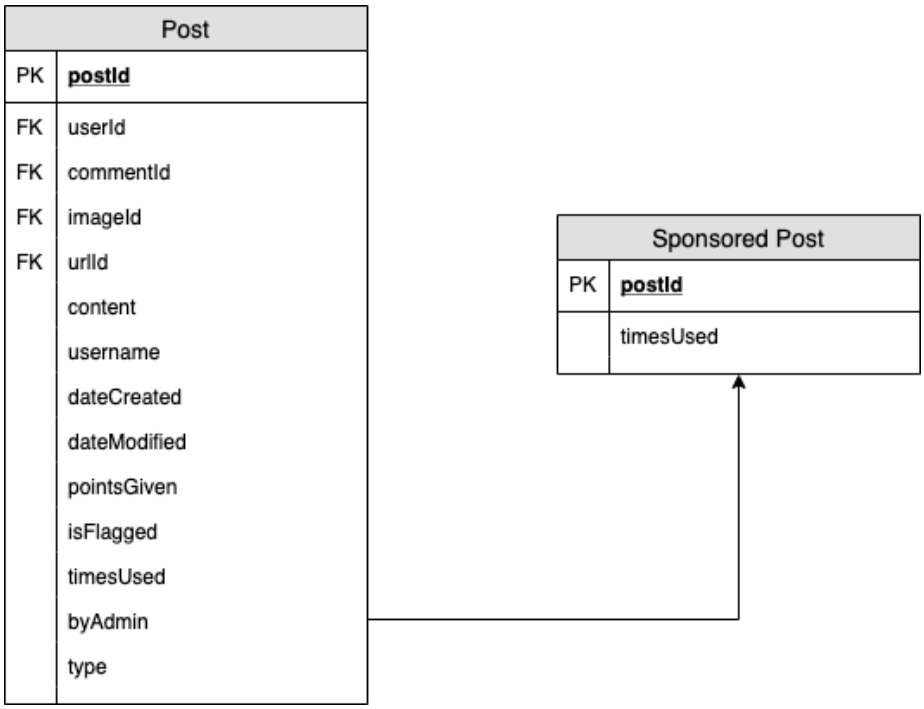
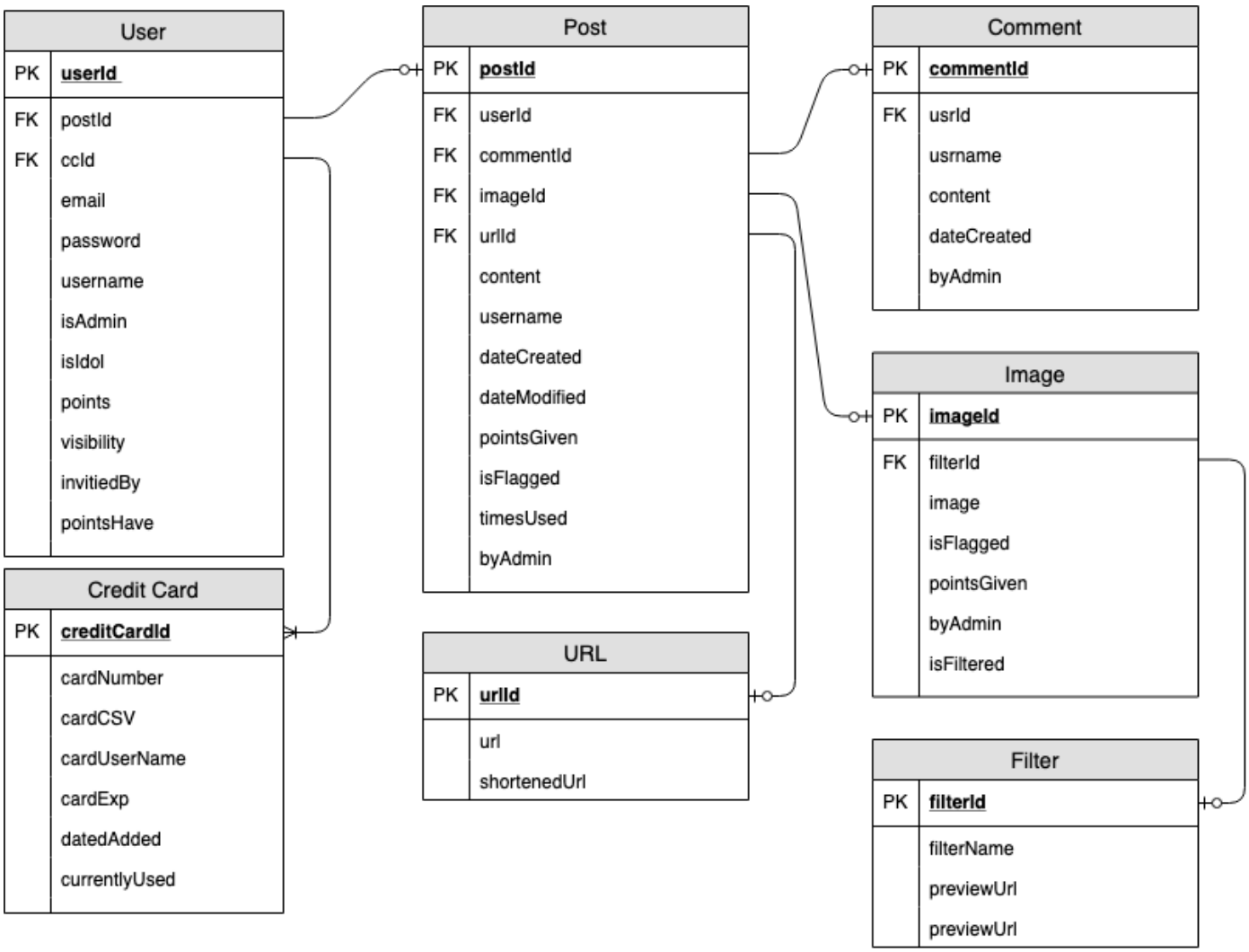


Image
PK
imageId
image
isFlagged
byAdmin
type
Filtered Image
PK
imageId
FK
filterId
pointsGiven

Post



Entire System