

# Homework 2

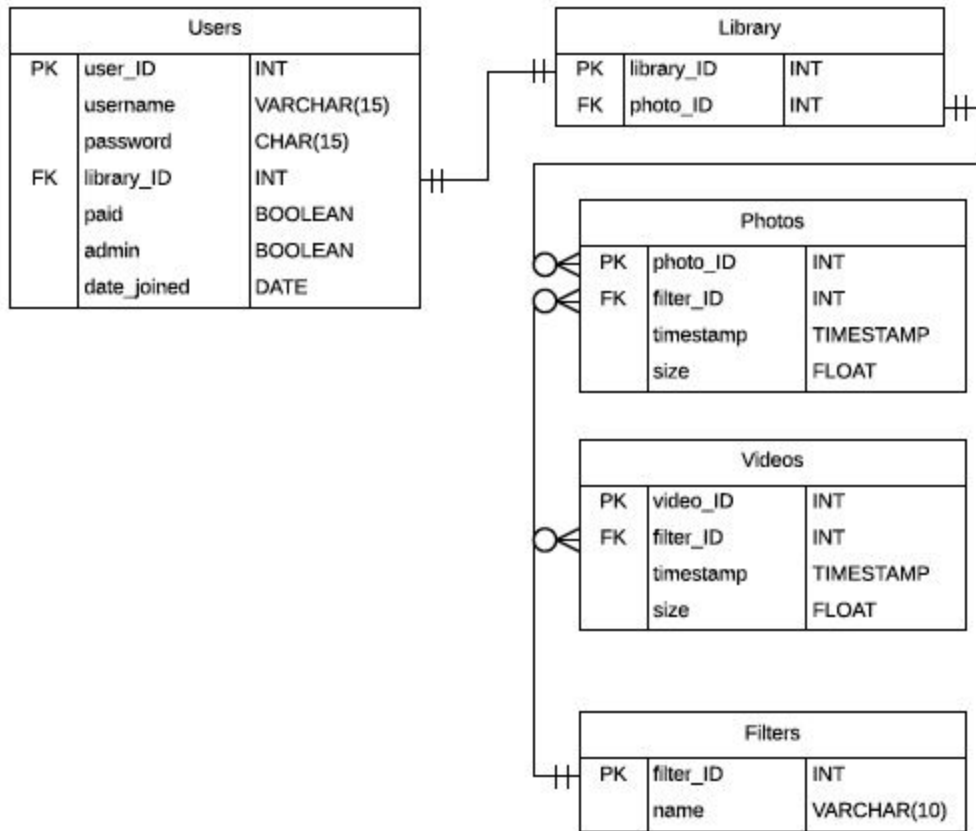
## ER Diagram, IT Requirements

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Artistic Stylizer Platform

## ER Diagram



# IT Requirements

## Server Platforms

### 1. Database Server

#### 1.1. Physical system requirements

- 1.1.1. Storage Capacity - 5Mb for each free user, 50Gb for paid (5-10tb initial)
- 1.1.2. Speed requirements / response time parameters - High response time
- 1.1.3. Scalability plans - Easily scalable storage capacity possibly through use of a storage area network

#### 1.2. Virtual system requirements

- 1.2.1. OS to be supported - Linux
- 1.2.2. Number of images expected - 2; 1 Primary 1 Backup

#### 1.3. Connectivity

- 1.3.1. Network considerations - N/A
- 1.3.2. Interconnection to what other systems - Connected to stylizer server and web server

### 1. Stylizer Server

#### 1.1. Physical system requirements

- 1.1.1. Storage capacity - Low (sub 100gb)
- 1.1.2. Speed requirements / response time parameters - High processing speeds, multiple hyper threaded processors and a dedicated GPU
- 1.1.3. Scalability plans - None, it just has to have available space (50gb) for patches to the ASP

#### 1.2. Virtual system requirements

- 1.2.1. OS to be supported - Linux
- 1.2.2. Number of images expected - 2; 1 Primary 1 Backup

#### 1.3. Connectivity

- 1.3.1. Network considerations - N/A
- 1.3.2. Interconnection to what other systems - Connected to database server

### 1. Web Server

#### 1.1. Physical system requirements

- 1.1.1. Storage capacity - Low (sub 200gb)
- 1.1.2. Speed requirements / response time parameters - High response Time, lots of RAM
- 1.1.3. Scalability plans - Should be able to add more RAM, processing power, and networking capabilities, or just more web servers as platform popularity grows

#### 1.2. Virtual system requirements

- 1.2.1. OS to be supported - Linux
  - 1.2.2. Number of images expected - 2 initially, with more to come
- 1.3. Connectivity
  - 1.3.1. Network considerations - Several NICs and redundant, high capacity network connectivity
  - 1.3.2. Interconnection to what other systems - Database Server

## 2. Reliability

### 2.1. Service Level Agreements

- 2.1.1. Uptime requirements - Our Web Server needs to be up 100% of the time, we will have scheduled maintenance (weekly basis) on the Stylizer and Database server, and for those periods our service will be unavailable
- 2.1.2. Response time requirements - Our user should be able to have their picture converted in a matter of seconds. If they upload a video, it may take several minutes depending on the length, but any process running for over an hour will be terminated. The website should have an instant response time.

## 3. Recoverability

3.1. Where are things backed up? How often? - The ASP will save two copies of each image for our paid users, one primary and one backup, at the time of its creation. There will also be a backup written for user information at the time of it's creation. We will encourage free users to save their created images locally.

3.2. Access to backups? - The user will not have access to the backup unless the primary is compromised at which point the backup becomes the primary data source

3.3. What data is transient and doesn't need to be stored longer term? - Any data stored or cached by the web server will not need to be stored long term. In addition, the base image the user uploads will not need to be stored.

## 4. Security and Privacy

### 4.1. Database

- 4.1.1. Access controls by userid / roles - Users will login using a user id that determines their membership level. System administrators will log in to their backend reporting and database access tool separate from the front facing website
- 4.1.2. Update vs. Access - users will be able to access their images stored on the database as well as other users' showcased ones. The only way a user can update the database is by submitting an image to be stylized through the web interface, removing an image from their profile, or updating their account

settings. The administrators will have full database access through a separate application to run SQL commands against

#### 4.2. Account information

4.2.1. User data - Users will store very minimal personal data on our site; their name, email, a profile picture, and a short bio. The upgrade to a premium account will be a one time cost to a credit card, so it will not be stored

4.2.1.1. Personal / registration - The registration of a user will be linked to an email account of theirs

4.2.1.2. Saved information - We will use session variables to store temporary session data, and store any user customizations in our database

4.2.2. FERPA/Privacy considerations - There is no data relating to FERPA being saved. Passwords will be saved in SHA256.

#### 4.3. Admin access controls

4.3.1. Adding new users, deleting old - Admins will be able to send out warnings that free users accounts will be deactivated after inactivity for 2 years.

Admins will not be in charge of creating new users, but will have the ability to do so. Paid users keep their accounts permanently.

### 5. Maintenance

#### 5.1. Planned down time requirements

5.1.1. Database and stylizer maintenance - maintenance of these services will occur as needed during non peak hours after a notification posted a day ahead on the site. During this period, the database and the stylizer will be down.

5.1.2. Site maintenance - the site can be instantly updated, and will stay up during maintenance.

5.1.3. Times of year when IT does maintenance - Weekly basis during off-peak hours (night-time)

5.1.4. Times of year when the systems are not available? - It will be available a vast majority of the time of the year as it is not a seasonal application.