Blog App Structure – FastAPI + MongoDB

1. User Roles

There are three roles in the system:
- Writer: Can write and read posts, and like/unlike them.
- Reader: Can only read and like/unlike posts, and comment.
- Manager: Has full access to write, read, like/unlike, and moderate posts and comments.

2. Database Collections

Users

```
{
  "_id": ObjectId,
  "username": "john_doe",
  "password": "hashed_password",
  "role": "reader"  // or "writer", "manager"
}
```

Posts

```
{
  "_id": ObjectId,
  "author": "john_doe",
  "title": "The Magic of FastAPI",
  "content": "Introductory guide...",
  "tags": ["api", "python", "webdev"],
  "created_at": datetime,
  "updated_at": datetime,
  "is_published": true,
  "likes": 3,
  "liked_by": ["reader1", "userX"],
  "views": 57
}
```

Comments

```
{
  "_id": ObjectId,
  "post_id": ObjectId,
  "commenter": "sana_user",
  "text": "Loved this article!",
  "timestamp": datetime
}
```

3. API Endpoints

Authentication

- POST /signup — Register with role (writer / reader / manager)
- POST /login — Authenticate user and get session

Posts

- POST /create-post — Create blog post (Writer / Manager only)
- GET /posts — Get list of posts with filters (All users)
- PUT /edit-post — Update existing post (Author or Manager)
- DELETE /delete-post — Delete a post (Author or Manager)
- POST /like-post — Like a post (All authenticated users)
- POST /unlike-post — Remove like from a post (All authenticated users)
- POST /view-post — Increment view count when read (All users)

Comments

- POST /add-comment — Add a comment (All authenticated users)
- GET /comments — Fetch comments for a post (All users)
- DELETE /delete-comment — Remove a comment (Commenter / Manager)

4. Rules & Logic

- Role-Based Control:
  - Readers can only like/unlike and comment.
  - Writers manage their own posts.
  - Managers can edit/delete any content.

- Like System:
  - Each user can like a post once.
  - Unliking removes their name from liked_by and decreases likes.

- Post Views:
  - Each time a post is accessed, views increases by 1.

- Comment Control:
  - Only original commenter or manager can delete.

5. Filtering & Sorting (GET /posts)

Supported query filters:
- author=username
- tag=python
- is_published=true
- sort=newest | most_liked | most_viewed