**DOCUMENTATION FOR THE GIVEN DIAGRAM(MERN)**

**Frontend (react):**

* User Interface for Admin to login access settings and view user history.
* Forms and interactive components for system configurations.

**Backend (Express and Node js):**

* We can use REST API for authentication, settings management, and user

History management.

* CRUD operations on the backend to interact with the database.

**Database (MongoDB):**

* Store admin credentials user settings, system settings, and user history in separate collections.

**Key features:**

* **Admin Login**: JSON web tokens can be used for generating an authentication system.
* **System settings**: Manage user-specific configuration like languages preferences.
* **User history**: Track and log user activities like last login time and action taken.

As for the entity diagram, it is not applicable for MongoDB since I'm using the MERN stack

If this design is made with the MERN stack then the database can designed with two approaches

* Embedding (ideal for frequently accessed data)
* Referencing (ideal for large datasets)

**The schema for the design will be structured like below:**

(based on assumption of data in general stucture)

**Admin Collection:**

**{**

**"\_id": ObjectId("64fdcb9b9a542b001d8ecb02"),**

**"username": "admin123",**

**"password\_hash": "hashed password",**

**"role": "super admin", // could be "admin", "moderator", etc.**

**"created\_at": ISODate("2024-10-05T14:48:00Z"),**

**"updated\_at": ISODate("2024-10-05T14:48:00Z")**

**}**

**User Settings Collection:**

**{**

**"\_id": ObjectId("64fdcd9b9a542b001d8ecb05"),**

**"admin\_id": ObjectId("64fdcb9b9a542b001d8ecb02"), // Reference to Admin**

**"theme\_preference": "dark", // Theme preference (dark, light, etc.)**

**"notification\_preference": true, // Boolean for notification settings**

**"language": "en", // Preferred language of the user**

**"created\_at": ISODate("2024-10-05T14:50:00Z"),**

**"updated\_at": ISODate("2024-10-05T14:50:00Z")**

**}**

**System Settings Collection:**

**{**

**"\_id": ObjectId("64fdce9b9a542b001d8ecb06"),**

**"max\_users": 1000, // Maximum allowed users in the system**

**"feature\_flags": {**

**"enable\_chat": true, // Enable/disable chat feature**

**"enable\_notifications": false // Enable/disable notifications**

**},**

**"created\_at": ISODate("2024-10-05T14:55:00Z"),**

**"updated\_at": ISODate("2024-10-05T14:55:00Z")**

**}**

**User history Collection:**

**{**

**"\_id": ObjectId("64fdd09b9a542b001d8ecb07"),**

**"admin\_id": ObjectId("64fdcb9b9a542b001d8ecb02"), // Reference to Admin**

**"login\_time": ISODate("2024-10-05T12:00:00Z"), // Timestamp of login**

**"actions\_taken": [**

**"Logged in",**

**"Updated System Settings"**

**], // List of actions performed by the admin**

**"ip\_address": "192.168.1.1", // Optional field for storing IP address**

**"created\_at": ISODate("2024-10-05T12:05:00Z")**

**}**