# Document Models for User, Activity Log, and Incident in MongoDB

This document describes the models for User, Activity Log, and Incident collections in MongoDB, including their fields and relationships. The structure is optimized for managing users, activities, and incident reports, using separate collections for scalability and performance.

## 1. User Model

* Collection: users

The User document stores essential information about the user, including authentication details, preferences, and permissions.

### Fields:

* user\_id: Unique identifier for the user.
* username: Unique username for authentication.
* email: User's email address.
* password\_hash: Encrypted password hash for security.
* full\_name: User's full name.
* role: User's role or position (e.g., 'inspector', 'admin').
* status: Account status (e.g., 'active', 'inactive').
* date\_created: Account creation date.
* last\_login: Date and time of the last login.
* preferences: Object storing language, notifications, and theme preferences.
* contact\_info: Object containing phone and address details.
* permissions: List of specific permissions assigned to the user (e.g., 'view\_reports').

### Relationships:

* Related to ActivityLog and Incident collections via the user\_id field.

## 2. ActivityLog Model

* Collection: activity\_logs

The ActivityLog document records user actions, such as login events or edits, with optional location information.

### Fields:

* user\_id: Reference to the user's user\_id.
* action: Description of the activity performed (e.g., 'login', 'edit\_report').
* timestamp: Date and time when the action was performed.
* location: Optional object with IP address and geographic coordinates (latitude and longitude).
* report\_id: Optional reference to a report if needed.

### Relationships:

* Related to User collection via the user\_id field.

## 3. Incident Model

* Collection: incidents

The Incident document represents a reported incident or unsafe condition. It stores photo evidence, locations, and an action plan.

### Fields:

* user\_id: Reference to the user's user\_id responsible or reporting the incident.
* incident\_id: Unique identifier for the incident.
* description: Details about the unsafe condition or incident.
* location\_area: General area or location of the incident.
* observation\_date: Date when the incident was observed.
* action\_plan: Action plan to resolve the incident.
* resolution\_deadline: Deadline for incident resolution.
* status: Current status of the incident (e.g., 'Pending', 'Resolved').
* photo\_evidence: List of photo evidence with photo\_id, photo\_url, and optional description.
* locations: List of locations related to the incident, each with coordinates and a timestamp.

### Relationships:

* Related to User collection via the user\_id field.