**DATA MODELLING**

**Home Assistance Platform for Elderly Users**

Database Name**: RetirementHomeManagement**

|  |  |
| --- | --- |
| **Collection** | **Purpose** |
| **AdminUsers** | Stores login and access information of platform administrators |
| **Blocks** | Represents different apartment blocks or towers within the community |
| **Visitors** | Logs of individuals visiting elderly residents |
| **Payments** | Monthly billing and payment tracking for each flat |
| **ResidentInfo** | Core resident information, including contact, family, and vehicles |

**RELATIONSHIP**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **#** | **Relationship** | **Type** | **Field Reference** | **Modeling Approach** | **Justification** |
| 1 | Resident ↔ Payments | One-to-Many | payments.flat\_no → residents.flat\_no | Reference | Payments grow monthly; referencing avoids large documents. |
| 2 | Resident ↔ Visitors | One-to-Many | visitors.resident\_name or resident\_id | Reference | Visitor entries can be frequent; better kept separate. |
| 3 | Block ↔ Residents | One-to-Many | residents.block → blocks.block\_name | Reference | Enables grouping and filtering by apartment block. |
| 4 | Admin ↔ System Entities | One-to-Many | N/A (system-level control) | Reference | Admins are separated to manage residents, payments, etc. |

**Embed vs Reference**

| **Use Case** | **Recommended Modeling** |
| --- | --- |
| Family members in resident profile | Embed |
| Vehicle numbers for residents | Embed |
| Payments for each flat | Reference |
| Visitor logs per resident | Reference |
| Linking residents to blocks | Reference |

**Sample Schemas**

**AdminUsers**

{

"username": "admin\_ravi",

"email": "ravi.admin@example.com",

"role": "superadmin",

"created\_at": "2025-05-01T10:00:00Z"

}

**Blocks**

{

"block\_name": "A",

"floors": 5,

"total\_flats": 20,

"lift\_available": true,

"block\_manager": "Mr. Suresh Nair",

"cctv\_installed": true

}

**Visitors**

{

"resident\_name": "Ajay Mehra",

"visitor\_name": "Arun Kumar",

"purpose": "Friend Visit",

"entry\_time": "2025-07-21T09:00:00Z",

"exit\_time": "2025-07-21T11:00:00Z"

}

**Payments**

{

"flat\_no": "A-101",

"bill\_month": "2025-07",

"amount": 2500,

"status": "Paid",

"paid\_on": "2025-07-10"

}

**ResidentInfo**

**{**

name**:** "Ajay Mehra"

Age**:** 62

flat\_no: "B-204"

contact\_number: "9876543210"

member\_type: "Owner"

family\_members: Array (2)

vehicle\_numbers: Array (2)

}