For your AI-based Car Fault Diagnosis mobile app, the backend will need to store and manage several categories of data. Below is a structured list of all possible data elements, grouped by their respective modules or functionalities:

**🔐 1. User Data**

| **Field Name** | **Description** |
| --- | --- |
| user\_id | Unique identifier (UUID or auto-increment) |
| full\_name | Name of the user |
| email or username | Unique login identifier |
| password\_hash | Hashed password |
| role | car\_user or mechanic |
| phone\_number | Contact number |
| location | Last known or entered user location |
| registration\_date | Date/time the user signed up |
| last\_login | Timestamp of last login |

**🧪 2. Diagnostic Scan Data**

| **Field Name** | **Description** |
| --- | --- |
| scan\_id | Unique ID for each diagnostic session |
| user\_id | Reference to the user who initiated the scan |
| scan\_type | dashboard\_light or engine\_sound |
| image\_url | Path to uploaded dashboard image |
| audio\_url | Path to uploaded engine sound |
| scan\_timestamp | Date and time of the scan |
| status | pending, processing, or completed |

**🧠 3. AI Diagnosis Results**

| **Field Name** | **Description** |
| --- | --- |
| diagnosis\_id | Unique diagnosis record ID |
| scan\_id | Related scan session ID |
| fault\_type | warning\_light, sound\_anomaly, etc. |
| fault\_code | Standard fault code (if applicable) |
| fault\_name | Human-readable name of the fault |
| description | Description of the fault |
| urgency\_level | low, medium, high |
| possible\_causes | List of likely causes |
| recommendations | Maintenance or fix suggestions |
| diagnosis\_time | Timestamp when diagnosis completed |

**🎥 4. Tutorial Video Data**

| **Field Name** | **Description** |
| --- | --- |
| video\_id | Unique ID for each video |
| title | Video title |
| url | YouTube or hosted video URL |
| fault\_related | Related fault code or category |
| duration | Video length |
| source | Expert/Channel name |

**📍 5. Mechanic Directory**

| **Field Name** | **Description** |
| --- | --- |
| mechanic\_id | Unique ID for each mechanic |
| name | Mechanic’s full name |
| contact\_number | Phone number |
| location | Address or GPS location |
| specialization | Fault types or car brands they work with |
| availability | Status (online/offline, hours) |
| ratings | Average rating from users |

**🕘 6. History / Logs**

| **Field Name** | **Description** |
| --- | --- |
| log\_id | Unique history log entry |
| user\_id | Related user |
| scan\_id | Related diagnostic scan |
| result\_summary | Short summary of diagnosis |
| viewed | Boolean (if the user has seen the result) |

**📝 7. Feedback / Survey**

| **Field Name** | **Description** |
| --- | --- |
| feedback\_id | Unique ID for the feedback |
| user\_id | Related user |
| rating | Rating out of 5 |
| comments | Optional user comments |
| submitted\_at | Timestamp of feedback |

**📱 8. App Configuration / System Data**

| **Field Name** | **Description** |
| --- | --- |
| setting\_key | e.g., ai\_model\_version, api\_endpoint |
| setting\_value | Configured value |
| last\_updated | Timestamp of last config update |