# Gym Management System - Data Storage Explanation

## 1. What data will the system store?

The Gym Management System will store different types of structured data, just like a digital notebook for the gym. The key data includes:

* User Information – Name, contact details, address, and login credentials.
* Membership Plan Details – Type of plan (Normal or Premium), pricing, and benefits.
* Subscription Records – Active subscriptions with start dates and statuses.
* Optional Services – Add-on services such as diet plans, workout plans, and meal prep guidance.
* User-Service Mapping – Which services each user has selected and when they started.

## 2. Where will this data come from?

The system will not create data by itself. Instead, the information will come from the following sources:

* Users – When members sign up or log in, they provide their personal details.
* Administrators – They set up membership plans, update prices, and manage services.
* References from Real Gyms – Developers may use examples from gyms like Les Mills or Jetts to design realistic plans.
* Mock Data – Fake or sample data created by the team to test the system during development.
* Custom Scenarios – Based on common gym workflows to ensure the system fits real-world needs.

## 3. Simple Explanation

In short, the Gym Management System will store member details, their chosen plans, subscriptions, and services. This data mostly comes from users when they register, admins who set up the plans and services, and references/mock data used by developers.

## 4. How can a developer address this?

To successfully handle data storage and sources in the Gym Management System, developers must carefully plan, design, and implement best practices. Here are the main steps a developer would take, explained in detail:

1. 1. Database Design

Developers begin by creating a well-structured database (e.g., MySQL, PostgreSQL). They design tables for Users, Membership Plans, Subscriptions, and Optional Services. Relationships are defined clearly, for example: one user can have many subscriptions, or a subscription can include multiple services. This ensures data integrity and makes the system scalable.

1. 2. Data Collection

Developers build forms and dashboards where users and admins can input information. For example, users register by entering their personal details, while admins create membership plans. Validation techniques are applied (checking email formats, password strength, required fields) so that only correct data is saved.

1. 3. Data Sources Handling

Data may come from multiple sources. For real-world references, developers add standard gym plans based on research. For testing, they use mock data to simulate real users and subscriptions. Custom workflows can also be added, for example handling cases like expired memberships or trial offers.

1. 4. Data Security

Security is one of the most important responsibilities. Developers ensure user passwords are stored securely (hashed, not plain text). They apply role-based access so normal members can only see their own data, while administrators have full access. Developers may also use encryption and regular database backups to prevent data loss.

1. 5. Scalability and Maintenance

The database should be built in a way that supports growth. For example, if a new service (like Yoga Classes) is added in the future, it should be easy to include without redesigning the whole system. Developers also maintain system logs, monitor performance, and make regular backups to ensure reliability.

### Summary for Presentation

In simple words: A developer addresses this by designing a strong database, creating input forms for collecting information, managing multiple data sources (users, admins, references, mock data), ensuring high security, and making the system scalable for the future. This ensures the Gym Management System is reliable, secure, and ready for real-world use.