**Written Questionnaire**

1. **Explaining what is design pattern and how we can use design patterns in**

**projects.**

* A design pattern is a reusable solution to a common software design problem.
* It’s not code you copy-paste, but rather a general guide or template for solving a particular kind of problem in programming.

1. **How are you going to store secrets in an application without exposing it to the**

**internet?**

* handling secrets securely is a must for any real-world application. Here's how you do it without exposing them to the internet

1. **What is JWT and how does it work?**

* JWT (JSON Web Token) is a compact, URL-safe token used to securely transmit information between a client (frontend) and a server (backend).
* 1. Login

2. Store Token (Frontend)

3. Use Token in Requests

4. Verify Token (Backend)

1. **What is the dierence between SQL and NoSQL databases?**

**Feature SQL (Relational DB) NoSQL (Non-Relational DB)**

Structure Tables with rows and columns Collections with documents, key-value, etc.

Schema Fixed schema Flexible schema

(predefined columns/types) (can store any fields)

Examples MySQL, PostgreSQL, SQLite MongoDB, Firebase, CouchDB, Redis

Relationships Strong – with JOINs between tables Weak or none – usually embedded documents

Query Language SQL (Structured Query Language) No standard; JSON-style queries (MongoDB)

Scalability Vertically (scale up – bigger server) Horizontally (scale out – more servers)

Transactions Full ACID compliance BASE model (eventual consistency, mostly)

**Best Use Cases Banking, accounting, ERP, where data is structured Social media, real-time apps, logs, IoT**

1. **Suggest a good state management for frontend application and explain why**

**you recommend it.**

**Tool Best For**

* React Context API Small apps, global theme/auth/user state
* Redux Complex apps, large shared state
* Zustand Modern apps, clean and minimal logic
* Recoil React-centric state with better reactivity