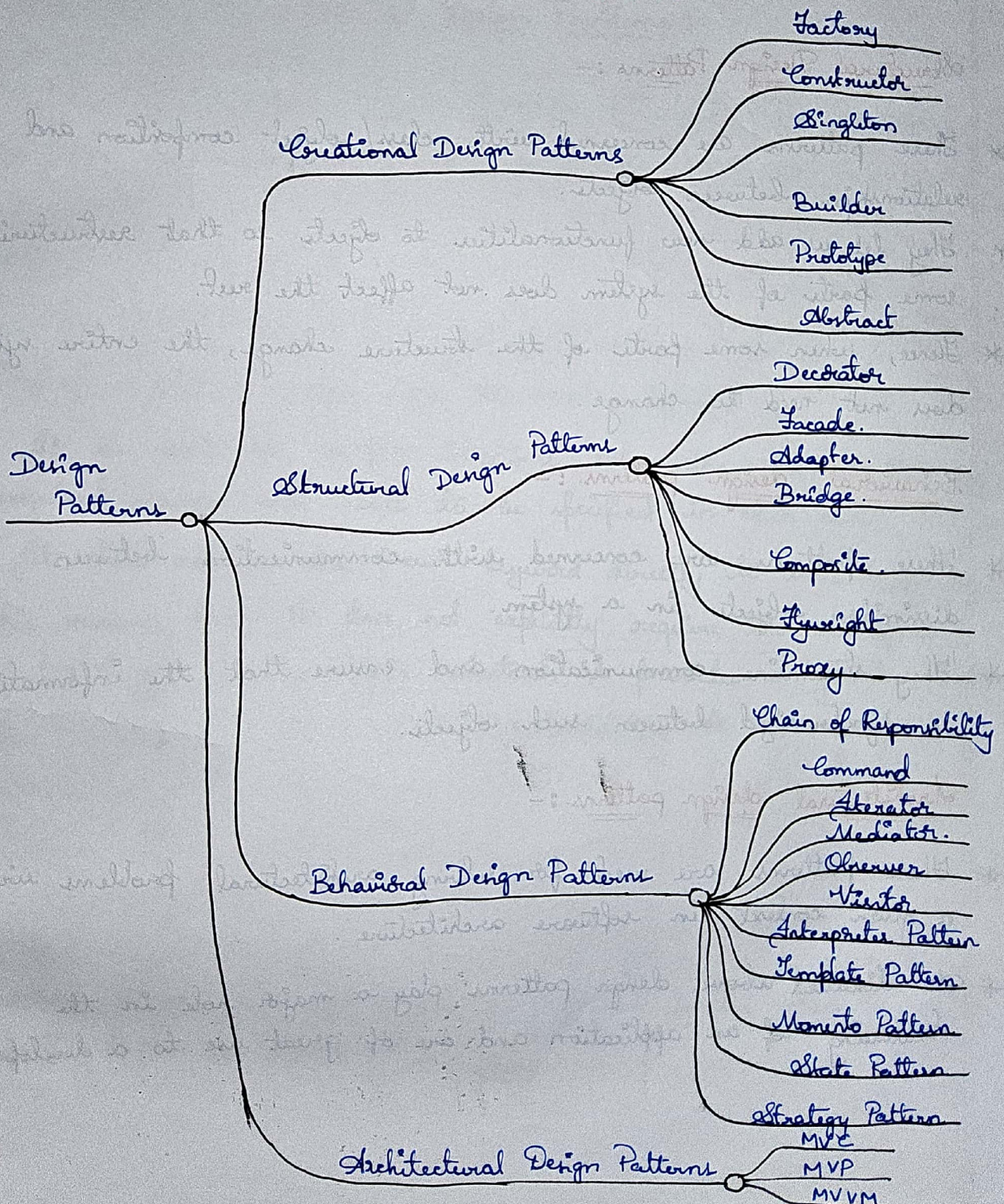


## 2. CLASSIFICATION OF DESIGN PATTERNS

1. Creational design patterns
2. Structural design patterns
3. Behavioral design patterns
4. Architectural design patterns

### \* CREATIONAL DESIGN PATTERNS \*





## Creational Design Patterns :-

- \* These patterns are used to provide a mechanism for creating objects in a specific situation without revealing the creation method.
- \* The normal approach for creating an object might lead to complexities in the design of a project.
- \* These patterns allow flexibility in deciding which objects need to be created for a specific use case by providing control over the creation process.

## Structural Design Patterns :-

- \* These patterns are concerned with class/object composition and relationships between objects.
- \* They let us add new functionalities to objects so that restructuring some parts of the system does not affect the rest.
- \* Hence, when some parts of the structure change, the entire system does not need to change.

## Behavioral design patterns :-

- \* These patterns are concerned with communication between dissimilar objects in a system.
- \* They streamline communication and ensure that the information is synchronized between such objects.

## Architectural design patterns :-

- \* These patterns are used for solving architectural problems within a given context in software architecture.
- \* As discussed above, design patterns play a major role in the structuring of an application and are of great use to a developer.



## DESIGN PROBLEMS :-

### ① Parking lot :-

- Singleton design pattern
- Abstract Factory design pattern
- Factory design pattern.

### ② Elevator System :-

- Strategy design pattern
- State design pattern
- Delegation design pattern

### ③ Library Management System :-

- Factory design pattern
- Delegation design pattern
- Observer design pattern.

### ④ Amazon Locker Service :-

- Strategy design pattern
- Repository design pattern

### ⑤ Vending Machine :-

- State design pattern
- Singleton design pattern

### ⑥ Online Blackjack game :-

- Iterator design pattern
- State design pattern.

### ⑦ Meeting Scheduler :-

- Singleton design pattern

### ⑧ Movie Ticket Booking System :-

- Strategy design pattern.

### ⑨ Design of Car Rental System :-

- Decorator design pattern

### ⑩ ATM :-

- Singleton design pattern
- State design pattern.

### ⑪ Chess Game :-

- Singleton design pattern
- Command design pattern.

### ⑫ Hotel Management System :-

- Strategy design pattern
- Singleton design pattern
- Factory design pattern.

### ⑬ Amazon Online Shopping System

- Factory design pattern
- Strategy design pattern

### ⑭ Stack Overflow :-

- Observer design pattern

### ⑮ Restaurant Management System :-

- Singleton design pattern
- Factory design pattern

### ⑯ Facebook

- Observer design pattern

### ⑰ Stock Brokerage System

- Singleton design pattern
- Observer design pattern.

### ⑱ Jigsaw Puzzle

- Singleton design pattern



19) Airline Management System

- Singleton design pattern
- Observer design pattern

20) Carcinfo

- Factory design pattern

21) Linked In

- Observer design pattern