

Step-by-step UML Design Approach

1. Key Classes & Interfaces

- **DataProcessor**
 - Responsibilities:
 - Maintain current mode and database connection.
 - Configure mode and database based on identifiers.
 - Process incoming DataPoint.
 - Methods:
 - `configure(mode: ModelIdentifier, db: DatabaselfIdentifier)`
 - `process(data: DataPoint)`
- **ProcessorMode (interface or abstract class)**
 - Abstracts different processor modes.
 - Methods:
 - `process(data: DataPoint, dbConnector: DatabaseConnector)`
- **Mode Implementations:**
 - `DumpMode` (implements `ProcessorMode`)
 - `PassthroughMode` (implements `ProcessorMode`)
 - `ValidateMode` (implements `ProcessorMode`)
- **DatabaseConnector (interface or abstract class)**
 - Abstracts database operations.
 - Methods:
 - `connect()`
 - `insert(data: DataPoint)`
 - `validate(data: DataPoint)`
- **Database Implementations:**
 - `PostgresConnector` (implements `DatabaseConnector`)
 - `RedisConnector` (implements `DatabaseConnector`)
 - `ElasticConnector` (implements `DatabaseConnector`)

2. Enums (already given):

- `ModelIdentifier`
- `DatabaselfIdentifier`

UML Diagram Summary (Textual)

plaintext

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```
+-----+
|      DataProcessor      |
+-----+
| - currentMode: ProcessorMode |
| - currentConnector: DatabaseConnector |
+-----+
| + configure(modelId: ModelIdentifier, |
|      dbId: Databaseldentifier)|
| + process(data: DataPoint)          |
+-----+

      /\      /\
      |      |
      +-----+
      |      | |      |
+-----+ +-----+ +-----+
| ProcessorMode| | DatabaseConnector| | ModelIdentifier |
| <<interface>>| | <<interface>> | | <<enum>>      |
+-----+ +-----+ +-----+
| + process(data,| | + connect() | | DUMP      |
| dbConnector)| | + insert() | | PASSTHROUGH |
+-----+ | + validate() | | VALIDATE      |
      +-----+ +-----+
```

Implementations:

ProcessorMode:

- DumpMode
- PassthroughMode
- ValidateMode

DatabaseConnector:

- PostgresConnector
- RedisConnector
- ElasticConnector

Databaseldentifier (enum):

- POSTGRES
- REDIS
- ELASTIC

How To Draw It

- Use UML tools such as **Lucidchart**, **Draw.io (diagrams.net)**, **StarUML**, or **PlantUML**.
- Create classes/interfaces and connect them:
 - DataProcessor has references to ProcessorMode and DatabaseConnector.

- ProcessorMode and DatabaseConnector are interfaces.
 - The implementations inherit from their interfaces.
 - Use dependency arrows (dashed) for enums.
- Show method signatures as listed above.