Basic CRUD Operations
Insert Single Record
Adds one record to the table.
Insert Multiple Records
Adds multiple records to the table.
Insert and Get ID

**Select All Records** 

Retrieves all records from a table.

Adds a record and retrieves its ID.

## **Select Specific Columns**

Retrieves specified columns from a table.

#### **Select with Conditions**

Retrieves records that match certain conditions.

## **Select with Pagination**

Retrieves records with pagination.

#### **Select with Relationships**

Retrieves	records	with	related	data	from	another	table.

#### **Update Single Record**

Modifies one record in the table.

#### **Update Multiple Records**

Modifies multiple records that match certain conditions.

#### **Update Specific Columns**

Updates only specified columns in the record.

#### **Delete Single Record**

Removes one record from the table.

#### **Delete Multiple Records**

Removes multiple records that match certain conditions.

#### **Soft Delete**

Marks a record as deleted without removing it from the database.

#### **Advanced Queries**

Join Tables

Subqueries

Combines records from two or more tables.

Uses a query inside another query.
Aggregates
Performs calculations on data, like COUNT, SUM, AVG.
Group By
Groups records based on a column.
Having
Filters groups created by the GROUP BY clause.
Ordering
Sorts records by specified columns.
Distinct
Retrieves unique records.
Authentication and User Management

User Registration
Inserts new user data.
User Login
Verifies user credentials.
Password Reset
Updates user password.
Email Verification
Marks email as verified.
Transactions
Begin Transaction
Starts a new database transaction.
Commit Transaction
Saves the transaction.
Rollback Transaction

Reverts the transaction.

## Compley Data Petrieval

Complex Data Retrieval
Eager Loading
Loads related models to avoid N+1 problem.
Lazy Loading
Loads related models on demand.

## **Nested Relationships**

Retrieves deeply nested related data.

#### **Polymorphic Relationships**

Manages polymorphic relations in queries.

#### **Optimization and Indexing**

## **Using Indexes**

Optimizes queries by utilizing indexes.

## **Analyzing Query Performance**

Reviews query execution plans.

#### **Miscellaneous**

#### **Raw Queries**

Stored Procedures
Calls stored procedures.
View Queries
Retrieves data from database views.
Optimized CRUD Operations
Insert Single Record
Adds one record to the table.
Insert Multiple Records
Adds multiple records to the table in one query.
Select Specific Columns
Retrieves specified columns to reduce data load.
Select with Conditions
Retrieves records that match certain conditions using indexed columns.
Output with David within
Select with Pagination

Executes raw SQL queries.

Retrieves records with pagination.

**Select with Relationships** 

Retrieves records with related data using eager loading.
Update Specific Columns
Updates only specified columns in the record.
Conditional Updates
Updates multiple records that match certain conditions.
Soft Delete
Marks a record as deleted without removing it from the database.
Batch Delete
Deletes multiple records in one query.
Optimized Advanced Queries
Join Tables
Combines records from two or more tables using indexed columns.
Aggregates

Performs calculations on data using indexed columns.

Groups records based on indexed columns.

**Group By** 

Ordering
Sorts records by specified columns using indexes.
Authentication and User Management (Optimized)
User Login
Verifies user credentials using optimized queries.
Transactions (Optimized)
Use Transactions Wisely
Wrap critical sections in transactions only when necessary.
Optimization Techniques
Eager Loading
Loads related data in fewer queries.
Using Indexes
Creates indexes on frequently searched columns.

## **Analyzing Query Performance**

Uses tools like Laravel Debugbar to analyze queries.

## Caching

Caches frequently accessed data to reduce database load.