Going SQL Free with Object Relational Mapping (ORM) Framework

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ABSTRACT

A java-based framework for Object Relational Mapping. ORM Framework is specifically designed for MySQL Database Management System.

Keywords: SQL, Java, J2EE, Object Relational Mapping, ORM

1. Introduction

With this framework, go SQL-free. This framework manages all operations related to insertion, updation, retrieval and deletion. Existing System does not allow some queries which are supported by **JDBC** but this ORM Framework does.Object-relational data models (OR-data models) represent an emerging industry consensus on how objects should be integrated into the database world.

Scope:-

Object-relational data models (OR-data models) represent an emerging industry consensus on how objects should be integrated into the database world.

2. Problem Foundation

Without ORM mapping it is very difficult for coders to retrieve, manipulate or delete any field from the table. Sometimes writing long complex SQL queries becomes hectic. Existing system does not allow inserting multiple objects to the same table using a single query. Developer has to write a separate query to insert each object.

3. Literature Review

Existing System	Advantages	Disadvantages	Reference link
Hibernate	It provides a framework for mapping an object-oriented domain model to a relational database.	It does not allow inserting multiple objects to the same table using a single query	https://hibernate.org/orm/ documentation/5.6/
Apache iBatis	iBatis maps the ResultSet from JDBC API to your POJO Objects.	When splicing complex SQL statements, there is no code flexibility and the spelling is complex	https://blog.mybatis.org/

4. Methodology

- This framework comes with a tool (POJO Generator) that eases all your efforts. Just create a conf.json file.

- Create a class with exception using POJOEquivalentToTable.

- POJO Generator generates POJO's by creating the folder structure that you specified in conf.json against package-name and also creating its equivalent jar file.
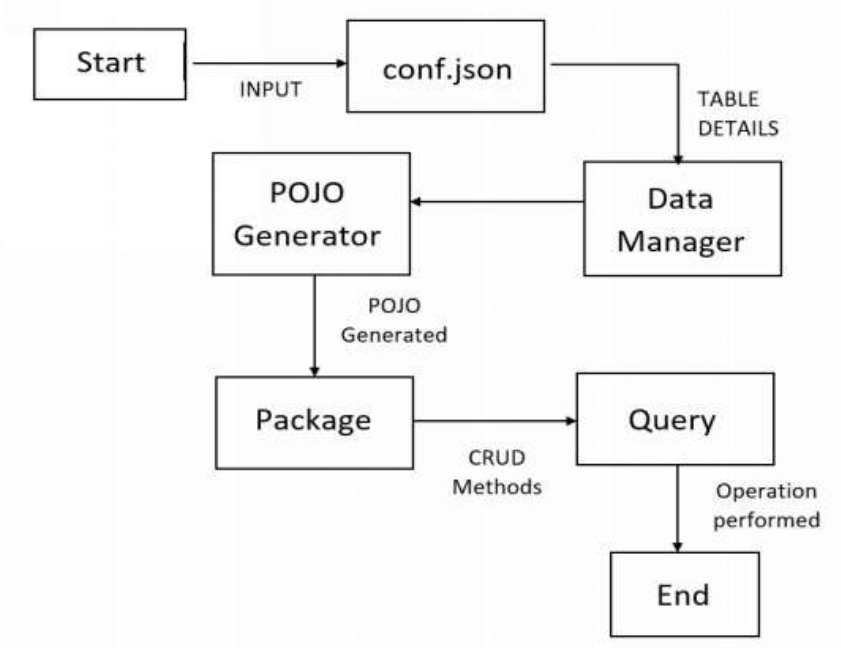
Data Flow Diagram

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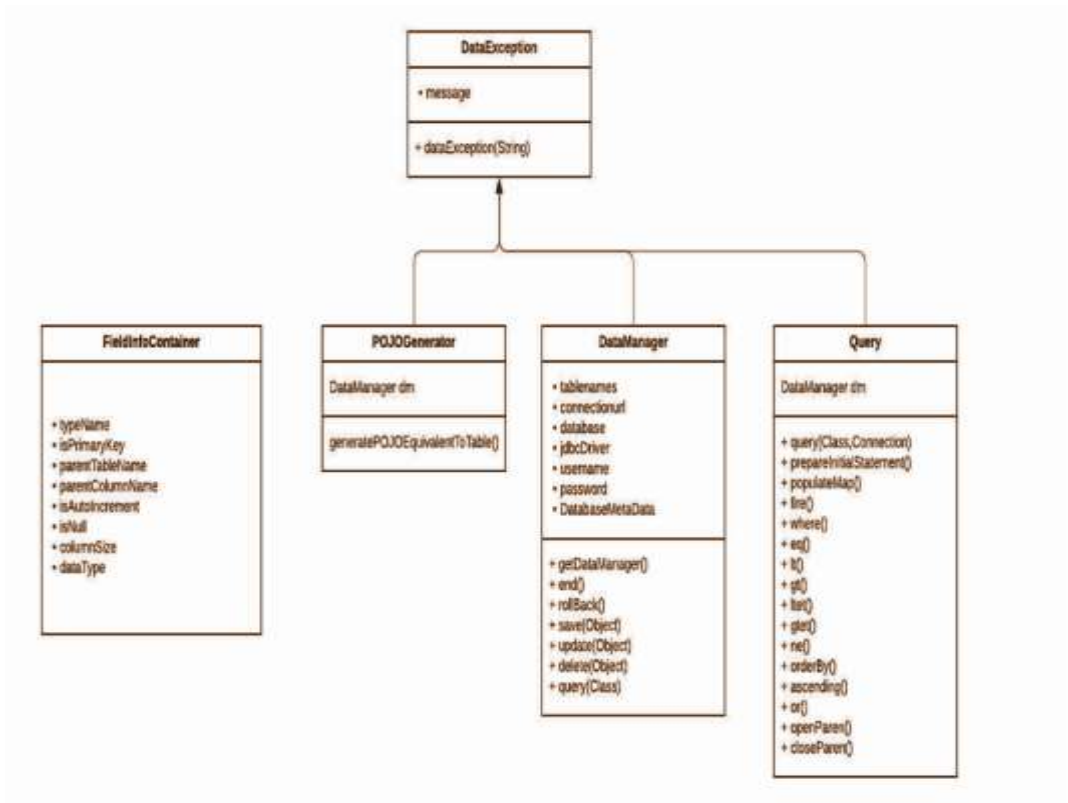*Fig 1. Data Flow Diagram*

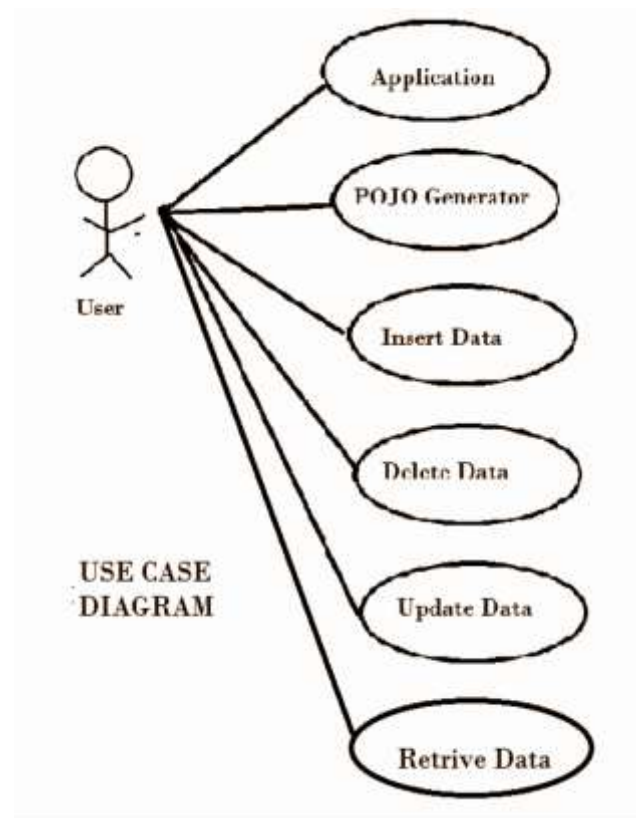*Class Diagram*

Fig 2. Class Diagram

Use Case Diagram

Fig 3. Use Case Diagram

5. Result Discussions

This ORM Framework generates objects which map to tables in the database virtually. Once these objects are up, then coders can easily work to retrieve, manipulate or delete any field from the table without paying much attention to language specifically. It supports writing complex long SQL queries in a simpler way.With the help of this Framework, we can save our time and speed up the development process. You don't need any SQL knowledge to use an ORM .

6. Conclusion

ORM stands for Object-Relational Mapping (ORM) is a programming technique for converting data between relational databases and object oriented programming languages such as Java, C#, etc.

ORM automates the persistence of Java objects to relational tables, simplifies development, optimizes performance and isolates database interactions.

Limitations :-

- This ORM is restricted to only MYSQL.
- Loss in developer productivity whilst they learn to program with ORM.
- Developers lose understanding of what the code is actually doing - the developer is more in control using SQL.
- ORM has a tendency to be slow.
- ORM fails to compete against SQL queries for complex queries.

7. Acknowledgment

We are sincerely grateful to our college "ACROPOLIS INSTITUTE OF TECHNOLOGY AND RESEARCH" for giving us an opportunity to work on the project which enable us to learn new Technologies and enhance our skills which would be helpful to us in our professional career.We owe a debt of

8. References

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