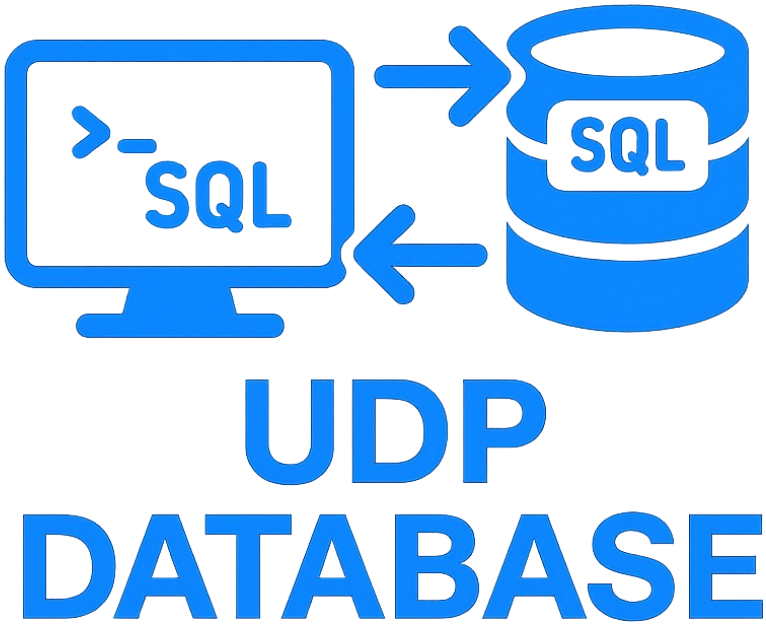

UDP_Database Project Documentation

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Project statement
This project simulates a client-server architecture using the UDP protocol. The client sends SQL queries to the server. The server executes these queries on a PostgreSQL database and sends back the results.

The objective is to demonstrate UDP-based communication with actual database interaction.

1. Project Description

The project is implemented in Java using the DatagramSocket and DatagramPacket classes for UDP communication. The client application allows the user to input SQL queries which are then sent as UDP packets to the server. Upon receiving the packet, the server decodes the query string and executes it using JDBC (Java Database Connectivity) with PostgreSQL. The response, such as query results or status messages, is then sent back to the client.

Data structures used:
- Strings: for message construction and SQL queries.
- Byte arrays: for UDP packet data handling.
- JDBC ResultSet: for managing query results.

2. Language Structures Used

Java Structure	Description
DatagramSocket	Provides methods for sending and receiving UDP datagrams
GetBytes() / String	Used to convert between Strings and byte arrays for packet transmission
PreparedStatement / ResultSet	JDBC classes for executing SQL queries and handling results

3. Screenshots

Screenshots demonstrating the server receiving queries and the client sending and receiving query results: