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### Description:

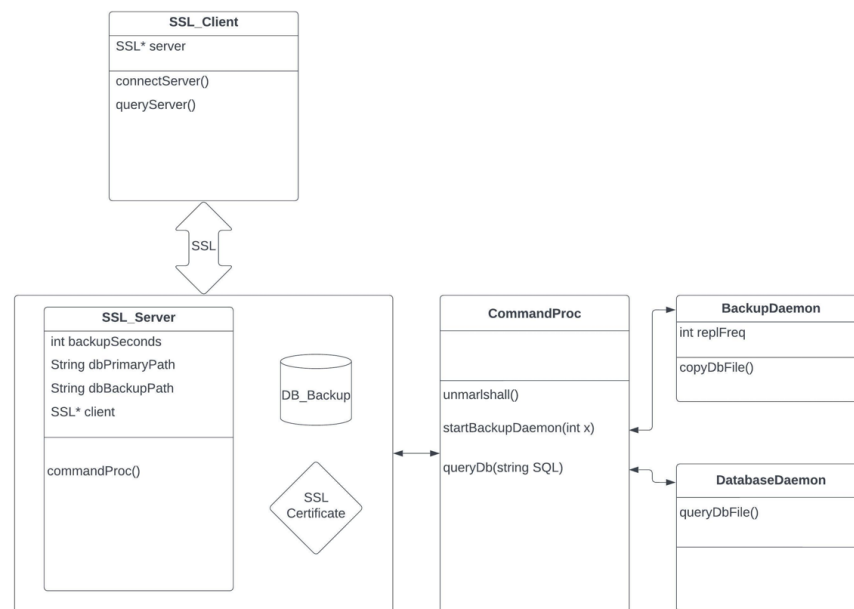
The system will be a two-tiered client-server architecture composing of the presentation layer (client) and the data layer (server). The server will handle database queries from the client and return the requested information. All communications between client and server must be authenticated using cryptographical methods. The database will back up to a secondary location in the event of data corruption or the file is missing. The interval of backup will be set via an administrative command.

### Server Attributes:

- Distribution transparency

Transparency is achieved through a secondary backup file location and concurrent threads processing database commands. If the primary file is found missing, the secondary backup file will be retrieved and copied over. As each connection is made to the server, a new thread will be created so that the server can continue to listen for more requests as it processes the last one.

- Distributed architecture.



- Security, to include authentication and data confidentiality.

Security will be implemented through a SSL session over the TCP connection to create a secure connection for data transfer.

- Replication of either processes or data.

Data will be replicated.

- Consistency (if replicating data)

Consistency is ensured through periodic backups at set intervals.

- Fault Tolerance.

Fault tolerance is achieved through replication of the data to a secondary location and recovery in case of file missing. Error codes will be returned from the server if other failures occur such as file handling or syntax.