Fantastic 4 Architecture Document

Fantastic 4 – Spring 2024

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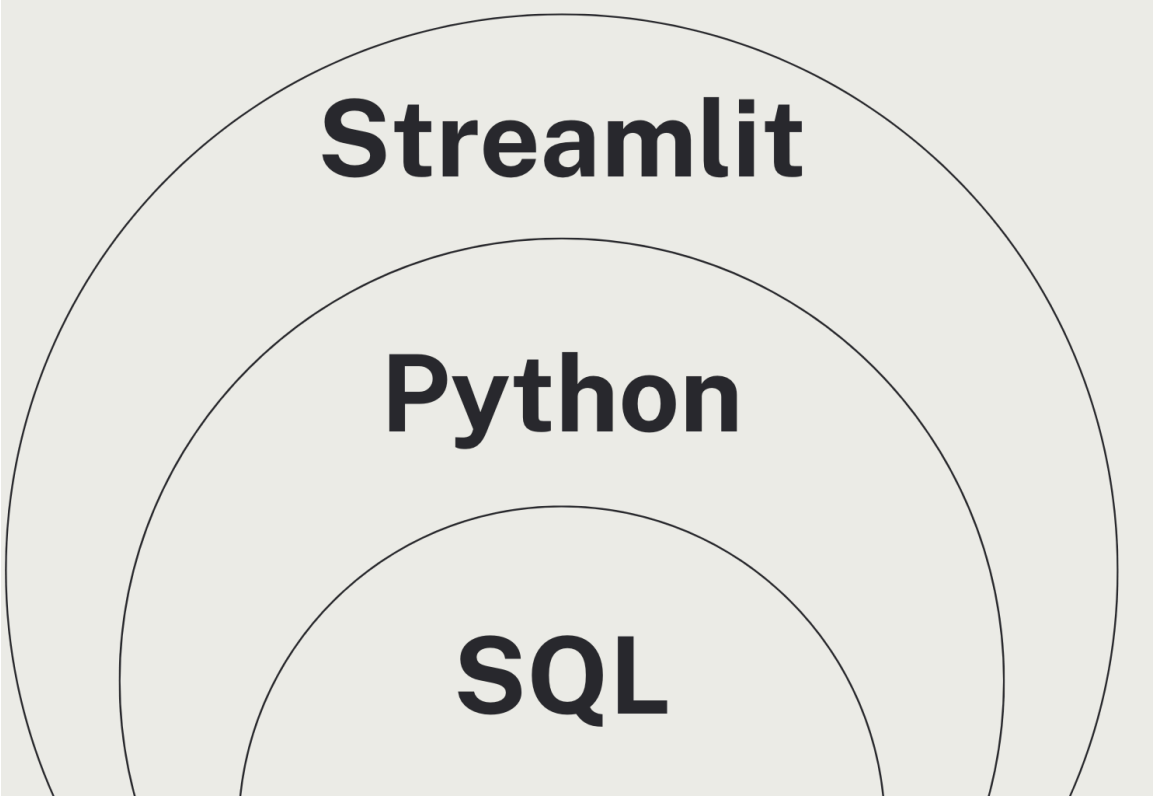
1.0 Introduction

The Fantastic 4 Architecture Document is designed to illustrate and identify the high level architecture systems used to design and implement the Commerce Bank website. The document contains an overall view of the system hierarchy, logical views of the system components, and a process view of the system's communication.

2.0 High Level Hierarchy

2.1 Hierarchy Diagram



2.2 Hierarchy Description

The architecture system for the Commerce Bank website is a 3 tier architecture. This architecture system is designed to allow for easy user interface connection. These layers all combine to create a database of user.

3.0 Connections

3.1 StreamLit Connection:

- StreamLit is a Python library used for creating interactive web applications.
- In the context of the Commerce Bank website's architecture, StreamLit can be connected to the user interface layer of the 3-tier architecture.
- StreamLit can be used to develop visually appealing and user-friendly interfaces for accessing and interacting with the Commerce Bank's services and data.
- Through StreamLit, users can navigate through different functionalities provided by the website, such as user settings, transactions, and a loan calculator.

3.2 Python Connection:

- Python is a versatile programming language commonly used for web development, data analysis, and automation tasks.
- In the Commerce Bank website's architecture, Python serves as the backend programming language, handling the business logic and processing user requests.
- Python connects the user interface layer (handled by StreamLit) with the application logic layer, where various operations related to banking services are implemented.
- Python can interact with databases (such as the SQL database mentioned) to retrieve and manipulate user data, account information, and transaction records.

3.3 SQL Database Connection:

- SQL (Structured Query Language) is a standard language for managing relational databases.
- In the 3-tier architecture of the Commerce Bank website, the SQL database serves as the backend data storage layer.
- The SQL database stores essential data such as user profiles, transaction details, and the loan calculator.
- Python, through the python MySQL library connects to the SQL database to retrieve and modify data as needed.
- User interactions through the user interface layer (StreamLit) trigger SQL queries or updates to the database, reflecting changes in user accounts, transactions, or preferences.