SQL INVESTMENT PORTFOLIO PROJECT

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OVERVIEW

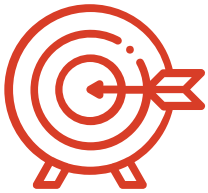
The goal of this project is to design and implement a robust SQL database that facilitates the efficient management of investor interests while driving long-term portfolio growth. A Microsoft SQL server database is designed and implemented on a local laptop host to track important investor details, store stock details and track transactions. A simple yet capable design enables users to enhance investment oversight, optimize risk management, and provide insights into asset allocation.

This document provides a high-level, non-technical overview of the system and its potential applications. It presents a prototype solution, populated with test data, and includes a selection of unique and insightful queries designed to enhance usability.

The fundamental objective of this project is to demonstrate the essential skills needed to conceptualize, design, and implement practical business solutions that deliver real user impact. Beyond these strategic and problem-solving abilities, the project also shows a range of technical competencies, including:

- ERD design.
- SQL database management proficiency.
- The ability to create insightful SQL data queries.
- The ability to create comprehensive project documentation that facilitates stakeholder engagement and collaboration.

KEY SYSTEM FEATURES



Investor Profiles.

Database stores all necessary investor details.

Asset tracking and monitoring.

Database stores all key asset data.

Transaction tracking

All transactions are tracked and categorized.

ERD (ENTITY RELATIONSHIP DIAGRAM)

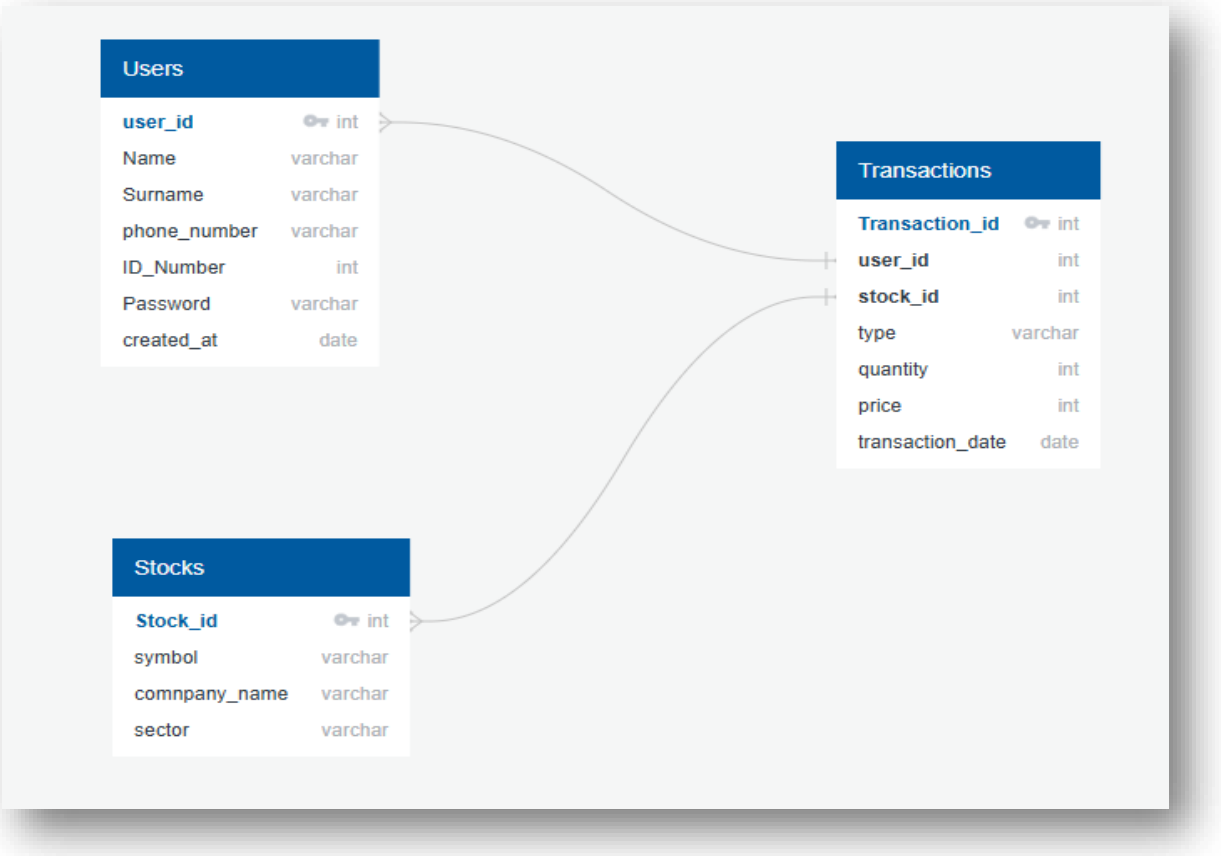


Figure 1: ERD of database.

“Where there is data smoke, there is business fire.”
— Thomas Redman

The database schema represents a structure to manage user information, stock details, and transaction records efficiently. This structure ensures proper organization, scalability, and easy querying. The initial **use case** for the solution is designed for small portfolio managers seeking an efficient way to manage a limited number of clients and their transactions. The system is intentionally streamlined for simplicity and ease of use, requiring minimal technical expertise once deployed.

DEMONSTRATION

To demonstrate the potential use cases for the system I have designed a selection of queries that not only provides an insight into the potential use cases but also the capabilities of the database solution.

To see the actual query code please refer to the .SQL file in the GitHub repository.

Query 1

Results | Messages

	User_id	Portfolio owner	Total portfolio value
1	1	Alice Johnson	$91,492
2	2	Bob Smith	$177,657
3	3	Charlie Davis	$46,456
4	4	Jacob Willemse	$74,902
5	5	John Van wyk	$27,472
6	6	Kyle Adams	$78,686
7	8	Alice Doe	$34,344
8	9	Caitlyn Stinson	$34,582

Figure 2: Calculates the total value of each user's portfolio.

Query 2

	stock_id	company_name	symbol	Trade count
1	101	Apple Inc.	AAPL	6
2	102	Tesla Inc.	TSLA	1
3	103	Alphabet Inc.	GOOGL	3
4	106	Netflix Inc.	NFLX	1
5	107	NVIDIA Corp.	NVDA	2

Figure 3: Gets the top 5 traded stocks.

Query 3

	symbol	Average cost per unit
1	AAPL	$1,223
2	IBM	$1,330
3	ADBE	$1,614
4	PYPL	$1,887
5	GOO...	$1,896
6	NFLX	$139
7	INTC	$2,132
8	DIS	$2,430

Figure 4: Computes the average unit cost of all the stocks in your portfolio offering.

Query 4

	transaction_id	commision
6	1006	$8,581
7	1007	$1,665
8	1008	$4,908
9	1009	$8,148
10	1010	$10,058
11	1011	$4,131
12	1012	$7,563
13	1013	$7,082

Figure 5: Calculates a 10% commission on the value of each transaction.

Query 5

	sector	Total trade value
1	Finance	$107,862
2	Semiconductors	$138,854
3	Technology	$266,655
4	Automotive	$4,500
5	Entertainment	$44,368
6	Transportation	$49,077
7	Software	($47,542)

Figure 6: Looks at the value of all trades per sector.

Query 6

	user_id	name	surname	symbol	company_name	total_quantity
18	8	Alice	Doe	ADBE	Adobe Systems Inc.	32
19	8	Alice	Doe	IBM	IBM Corp.	35
20	9	Caitlyn	Stinson	ADBE	Adobe Systems Inc.	3
21	9	Caitlyn	Stinson	DIS	The Walt Disney Co.	17
22	9	Caitlyn	Stinson	PYPL	PayPal Holdings Inc.	8
23	10	Megan	Doe	AAPL	Apple Inc.	5
24	10	Megan	Doe	ADBE	Adobe Systems Inc.	2
25	10	Megan	Doe	GOOGL	Alphabet Inc.	5

Figure 7: list all the stocks in a individual's portfolio and there quantity's.

CONCLUSION

This database documentation provides a high-level overview of the structure and use cases within the database, ensuring clarity for developers, stakeholders and potential users. Moving forward, this scheme serves as a solid foundation for further enhancements, such as integrating advanced analytics, adding new user features, or scaling to support higher volumes of data. Clear documentation like this is pivotal in ensuring communication across all key stakeholders.