TAWHIDIC EPISTEMOLOGY LEADING THE WAY · UMMATIC EXCELLENCE LEADING THE WORLD
KHALĪFAH · AMĀNAH · IQRA' · RAHMATAN LIL 'ĀLAMĪN
KULLIYYAH OF INFORMATION & COMMUNICATION TECHNOLOGY

TAWHIDIC KNOWLEDGE GRAPH

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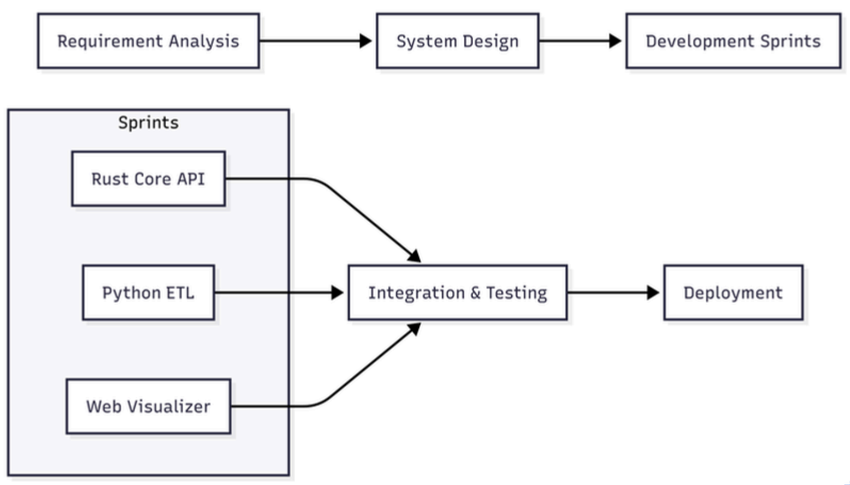
ABSTRACT

Traditional digital Islamic repositories often treat sacred texts as flat, disconnected files, losing the vital 'Relational Context' (Sanad and Tafsir) essential to scholarship. This project proposes a Tawhidic Knowledge Graph framework. By utilizing SurrealDB and Rust, we transition from static 'Bag-of-Words' retrieval to a multi-dimensional graph model. This enables researchers to instantly trace relationships between Quranic verses, Hadith narrations, and legal rulings (Ahkam), creating a computational 'Source of Truth' for the digital age.

PROBLEM STATEMENT

- Epistemological Incongruence: Static SQL architectures force-fit recursive Islamic knowledge into flat tables, stripping critical relational context.
- Semantic Fragmentation: Fragmented databases prevent cross-domain queries (e.g., linking a Hukm directly to its Rijal chain).
- Performance Bottlenecks: Standard RDBMS experience exponential latency in deep-join operations (N-degree relationships) across large corpora like the Sanadset.

METHODOLOGY



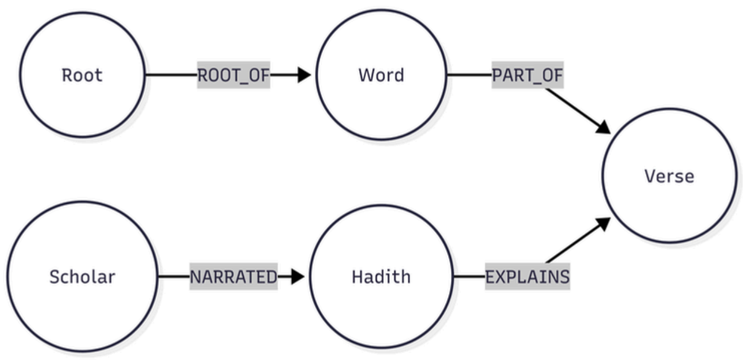
SYSTEM REVIEW

Platform	Database Model	Methodology	Limitation
Quran.com	RDBMS (SQL)	Keyword Indexing	Cannot traverse from Verse -> Hadith without manual links.
Sunnah.com	RDBMS (SQL)	Collection-Chapter Hierarchy	Isnad chains are stored as plain text strings, not queryable graphs.
Al-Mizan (Proposed)	**Graph (SurrealDB)**	**Semantic Connectivity**	Enable O (1) traversal between any connected nodes.

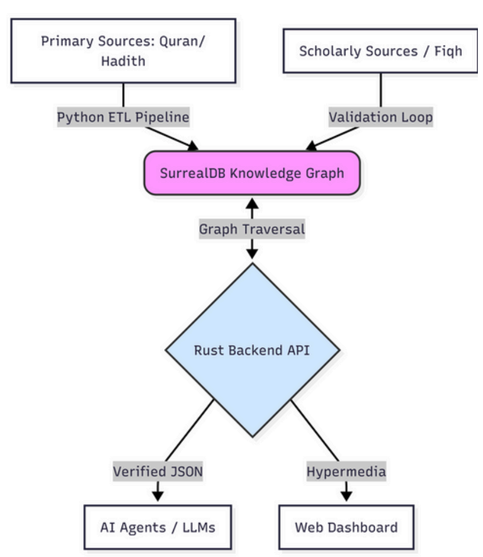
OBJECTIVE

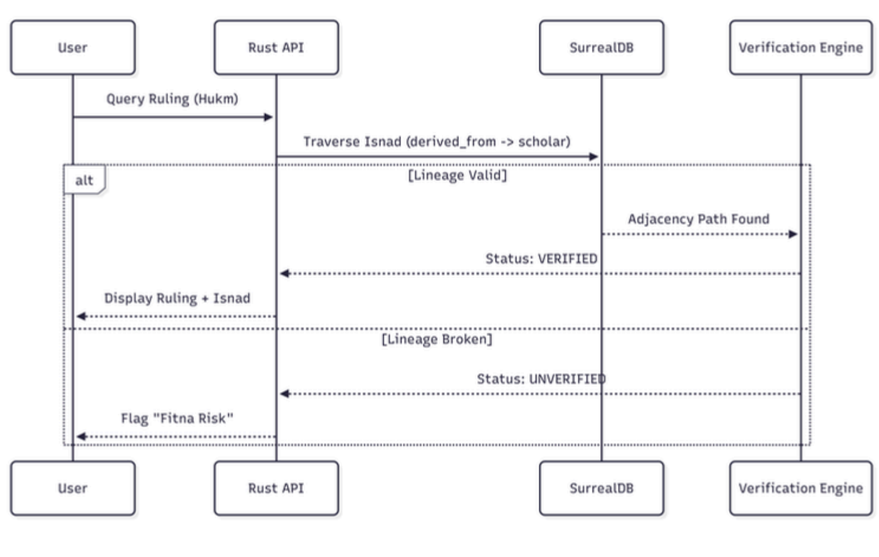
- To engineer a high-performance Graph API using Rust and SurrealDB
- To implement an automated ETL pipeline to ingest primary sources (Quran and Hadith) into a graph structure
- To visualize a web-based verification dashboard that allows researchers to traverse the graph nodes (Verses, Hadiths, Roots) visually

DATA MODEL



SYSTEM ARCHITECTURE





FUTURE WORK

- AI Integration: Implementing LLMs for automated relationship extraction from unmapped classical texts.
- Mobile Ecosystem: Providing a lightweight mobile client for students of knowledge to access the graph.
- Conflict Detection: Algorithmic flagging of weak Sanad links to identify historical "Fitna" nodes.

EXPECTED RESULT

- High-Speed Traversal: Achieving sub-100ms response times for 3rd-degree relationship queries (e.g., Verse -> Word -> Root).
- Verification Dashboard: A functional UI where clicking an Ayah reveals all connected Hadith, Narrators, and their reliability scores.
- Unified Schema: A standardized graph ontology for Islamic primary sources that bridges the gap between different Madhabs.

TOOLS

PROTOTYPE

16 PEACE, JUSTICE AND STRONG INSTITUTIONS
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