

# Abstract

Centralized search engines raise privacy, security, and neutrality concerns due to their data collection and potential to manipulate search results. This Final Year Project (FYP) proposes a decentralized search engine to address these issues and offer a more secure, private, and transparent search experience.

The FYP employs blockchain technology, smart contracts, and a peer-to-peer (P2P) network architecture to develop the decentralized search engine. The custom blockchain is created using the Geth client, while the frontend and backend are designed with modern web technologies and Node.js, respectively. A private blockchain is utilized to maintain user anonymity, with users paying a nominal fee for queries to ensure system sustainability.

The proposed decentralized search engine is compared to popular centralized search engines and other decentralized alternatives to evaluate its performance and effectiveness. The comparison encompasses aspects like privacy, security, transparency, response time, throughput, and scalability. The results demonstrate the potential of the decentralized search engine in addressing centralized search engines' concerns and highlight areas for future research and improvement.