

# DiSA – Digitally Stored Archive

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## Abstract

With the increasing adoption of digitalization for document handling, DiSA is a secure solution for storing documents that require high authenticity and integrity guarantees. It employs client-side signatures using citizen cards or mobile digital keys to verify author identity and records document hashes on a blockchain for proof of existence. Besides, users can manage and share documents through a dedicated website with whitelisting. DiSA's system is ideal for legal, governmental and intellectual property. documents.

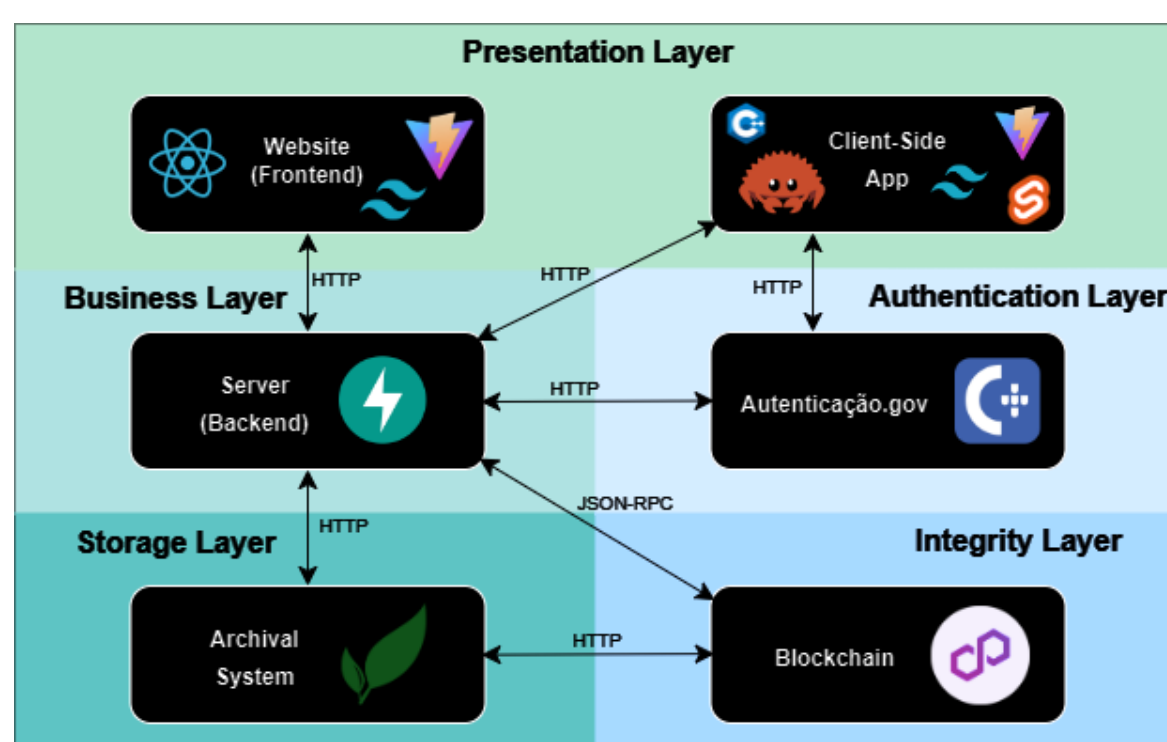


Fig. 1 - DiSA's Architecture

## Methods

DiSA ensures document authenticity and integrity through client-side signatures where signed documents are compiled into a .tar file, and a manifest containing the document hashes is generated. The manifest's hash is then recorded on the Polygon PoS blockchain, providing an immutable proof of existence. Users can manage and share documents via a dedicated website that employs a whitelisting system. DiSA integrates with the Paperless archiving system for secure storage and retrieval.

## Features

1) Document Submission and Verification – Users securely submit and verify document authenticity through client-side signatures. This, along with blockchain technology, ensures integrity and provides indisputable proof of existence.

2) Document Management and Sharing – DiSA offers a user-friendly interface for managing and securely sharing documents, access is controlled through whitelisting.

3) Immutable Archiving – Leveraging Paperless' open-source project, DiSA ensures long-term storage and retrieval, guaranteeing document accessibility and integrity.

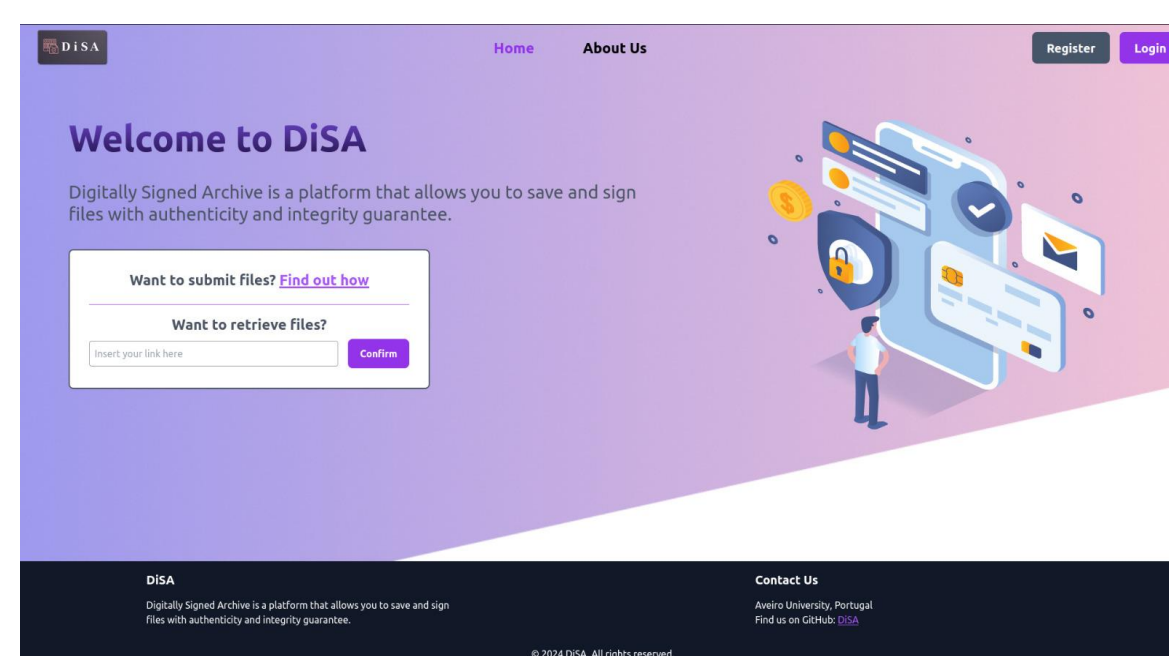


Fig. 2 - DiSA's Website

## Conclusion

The development of DiSA required the application of knowledge acquired during the bachelor's degree, emphasizing iterative and incremental development methodologies as well as adherence to good software engineering practices. As a result, we anticipate that DiSA will serve as a valuable asset, enhancing document management processes across various domains, including legal, governmental, and intellectual property sectors. Its implementation is expected to contribute significantly to the efficiency and reliability of document handling procedures, thereby augmenting the overall effectiveness of organizational workflows.

## References

Paperless: <https://docs.paperless-ngx.com/>  
 Autenticação Gov: <https://www.autenticacao.gov.pt/>  
 Polygono PoS: <https://polygon.technology/polygon-pos>

