# Digital Document Archive with Authenticity Guarantee

## Group 10 – Transition (Milestone 4)

DiSA


universidade de aveiro

deti
departamento de eletrónica, telecomunicações e informática

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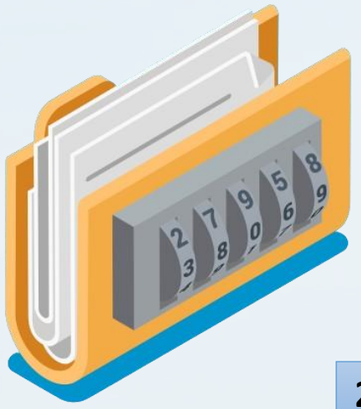

# Our Team

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**DevOps Master**

# Context & Our Product

### Predominance of Digitalization

Growing use of digitalization for document handling.

### Store Space Limitations

Public institutions restrict document upload sizes.

### Our Product aims to (goals):

- Simplify the document's submission
- Guarantee the document's authenticity
- Remove size restrictions
- Ensure integrity over the time

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# State of The Art (SOA)

## Document Archive platforms

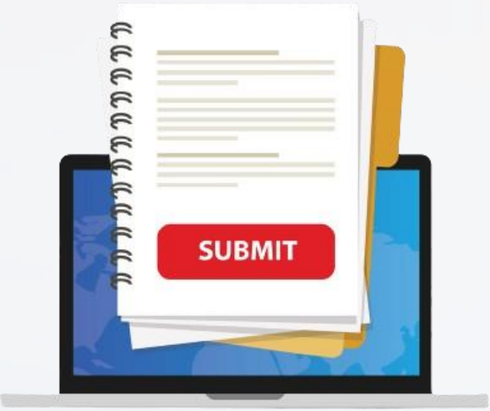
- **DSpace:** open-source repository used by academic institutions to manage and store their documents.
- **Preservica:** paid platform used by institutions to store their documents throughout time.

## Digital Signature platforms

- **Blockcerts:** open standard that relies on blockchain to emit and verify digital certificates.
- **Proof of Existence:** platform that allows submission of a document's hash on the bitcoin blockchain (paid transactions).

# Functional Requirements

- **Document Submission:** Sets of one or more.
- **Authenticity Guarantee:** Digital Signatures to prevent tampering.
- **Proof of Existence: Receipt Generation** to relate the downloadable document with the submitted one, by the link (using a blockchain).
- **Document Sharing:** Unique link to facilitate sharing and authenticity verification.
- **Document Storage:** Integration with a persistence archive.
- **User Interface:** Trustworthy, intuitive, and user-friendly interface.






# Non-Functional Requirements

- **Performance:** Transfer multiple documents while maintaining response times..

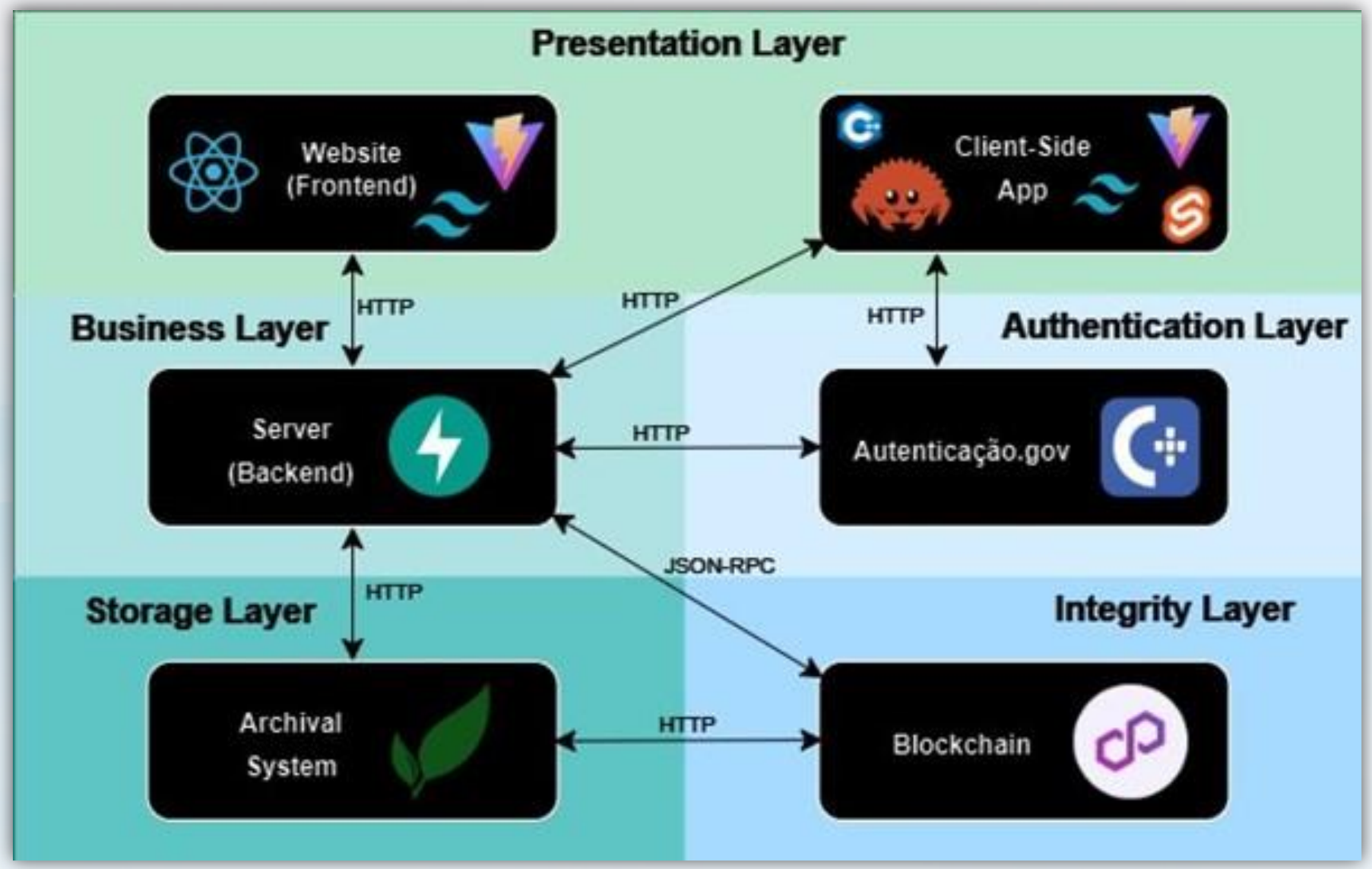
- **Security:** Strong ciphers, authentication, and authorization mechanisms.

- **Usability:** Easy to use interface with clear feedback.

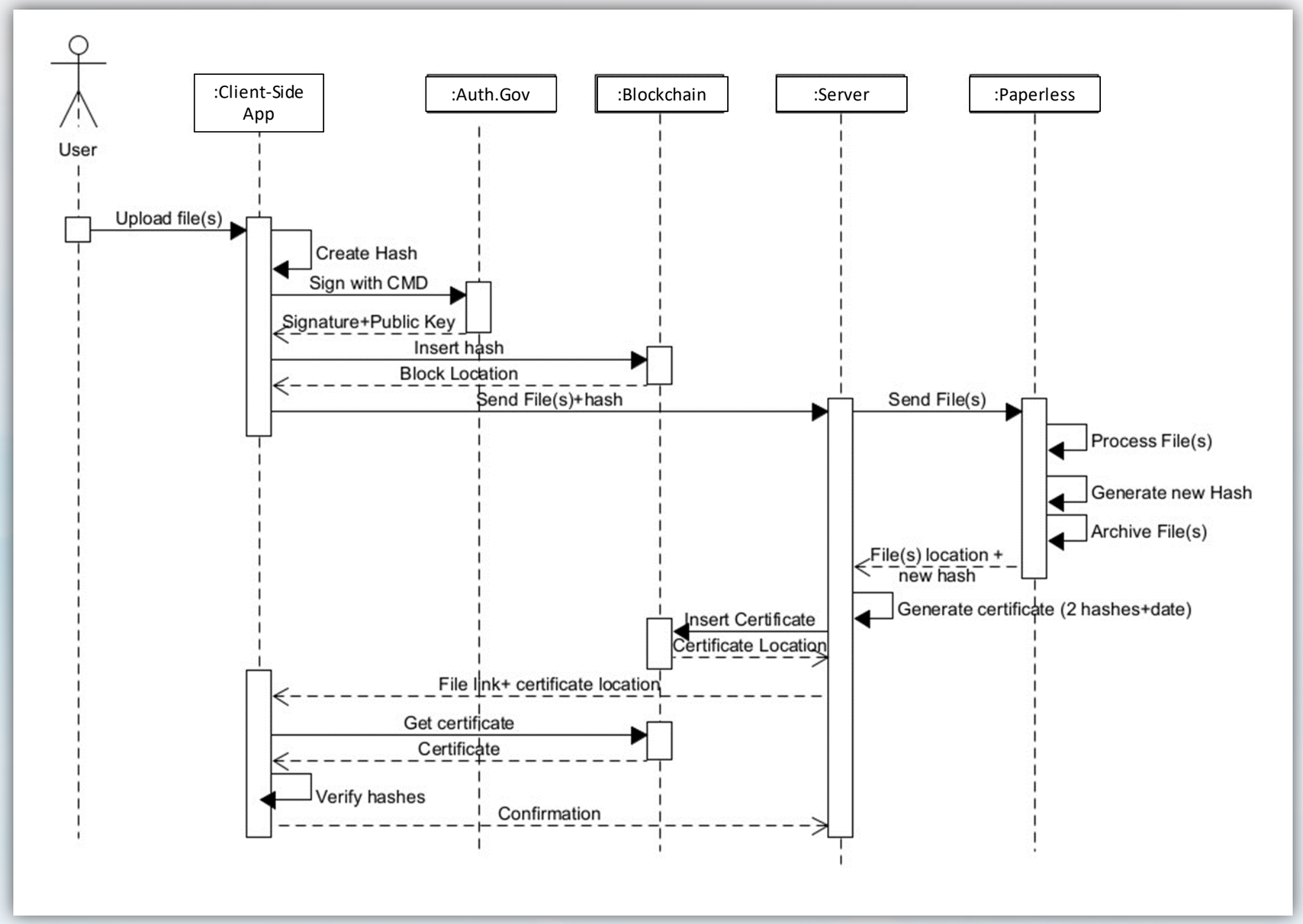
- **Compatibility:** Compatible with most browsers and operative systems.

- **Maintainability:** Extensive documentation for future upgrades/maintenance.

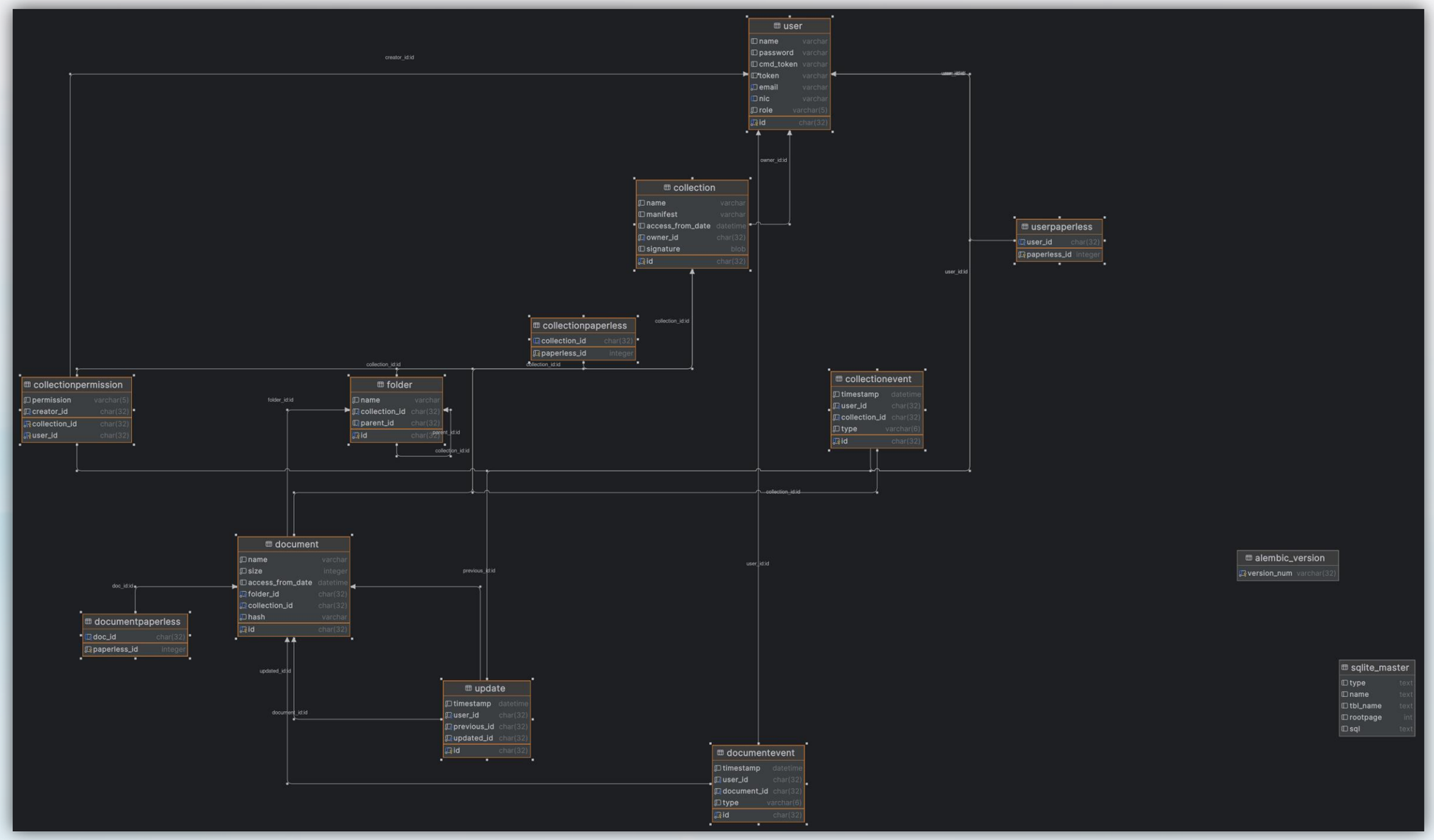
# DiSA's Architecture



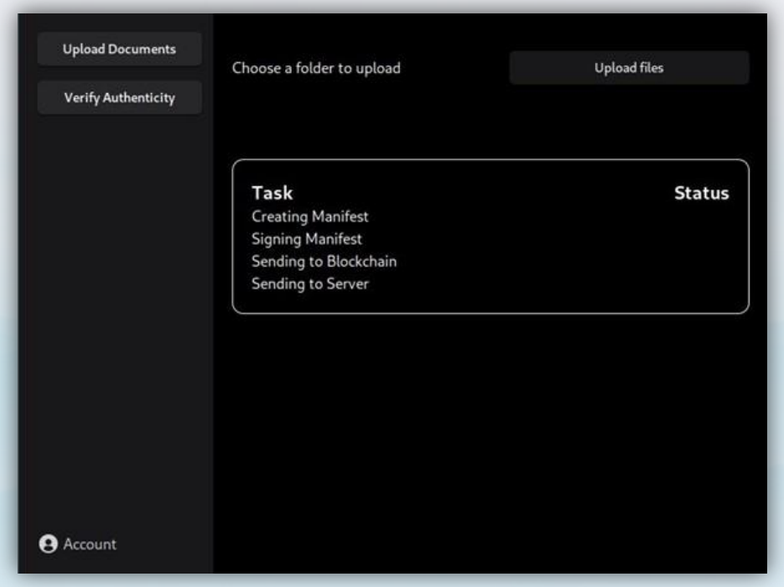
# DiSA's Sequence Diagram

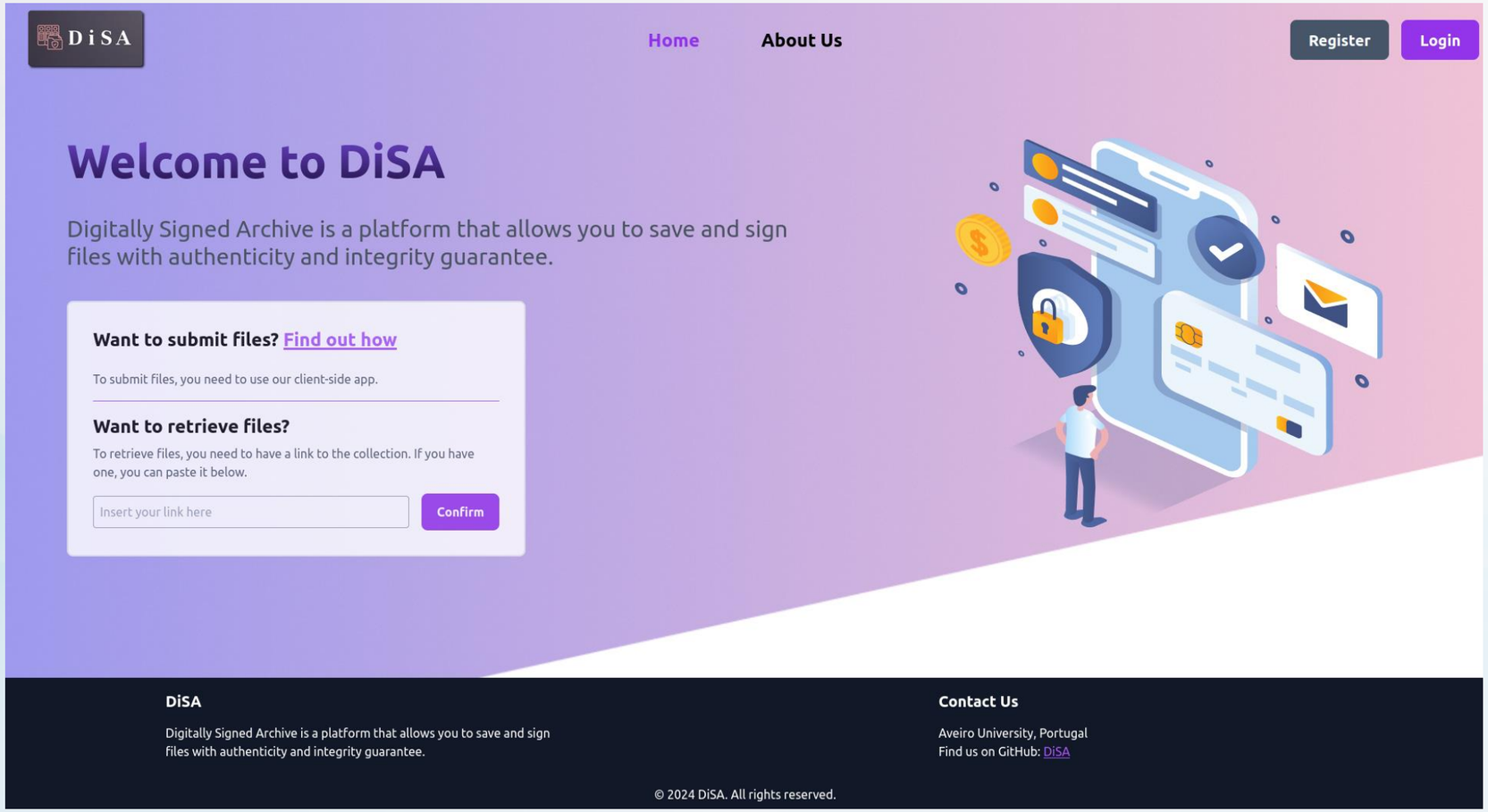


# DiSA’s Database Design



# Demo


Upload Documents
Verify Authenticity
Choose a folder to upload
Upload files
Task
Status
Creating Manifest
Signing Manifest
Sending to Blockchain
Sending to Server
Account


DiSA
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Digitally Signed Archive is a platform that allows you to save and sign files with authenticity and integrity guarantee.
Want to submit files? Find out how
To submit files, you need to use our client-side app.
Want to retrieve files?
To retrieve files, you need to have a link to the collection. If you have one, you can paste it below.
Insert your link here
Confirm
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Aveiro University, Portugal
Find us on GitHub: DiSA
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# Main Results

- **Comprehensive Solution:**
  - DiSA offers a secure, authentic and long-term document management solution.
  - Integration of Digital Signatures and Blockchain technology ensures document integrity.

- **User-Centered Design:**
  - Focus on usability, accessibility, and efficiency.
  - Intuitive features streamline document submission, retrieval, sharing, and management.

- **Technological Innovation:**
  - Leveraging advanced technology such as blockchain and digital signatures.
  - Sets new standards for document authenticity and security.

# Limitations

- **Scalability Challenges:**
  - Integration with existing systems like Paperless can limit scalability.
  - National authentication services, such as Autenticacao.gov, pose challenges beyond Portugal.

- **Integration Complexity:**
  - Complex configurations of existing systems can make integration difficult.
  - Reliance on country-specific dependencies can introduce additional complexity.

- **User Adoption:**
  - Challenges in adopting DiSA in organizations used to legacy systems or paper-based processes.
  - National services may pose barriers to adoption outside Portugal.

# Conclusions

**In our opinion:**

- **Successfully** developed a versatile platform for digital document management and authentication.
- Combination of Digital Signatures and Blockchain for **secure** and **user-friendly** document management.
- Significant potential benefits in **efficiency**, **transparency**, and **trust** in document management.

DiSA

- Insights and experiences gained resonate with the principles of Informatics Engineering.
- Applied knowledge from database management, software engineering, system architecture, cybersecurity, … in designing and developing DiSA.

# Future Work

- Enhance Scalability
- Advanced Analytics
- Integration with DOI links
- Integration with Emerging Standards
- Integration with more Archive Systems

# Questions

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**Check our website to know more!**

**Note: poster & video updated this week**