TENJI:

A Textbook Entity Network and Jurisprudence Interface



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Searching in Legal Textbooks, Norms, Cases, and Exploring Citations with TENJI

Built with Human-Centered Design

TENJI

Human-Centered Design for TENJI:

• Frequent Feedback Loops with Stakeholders

Problem

- Legal documents are scattered and difficult to navigate, especially in systems with complex norms, cases, and citations.
- Contextual knowledge from textbooks is often hidden, requiring extensive expertise to uncover connections.
- Existing tools lack intuitive interfaces for efficiently exploring relationships between laws, cases, and textbooks.

Solution

- TENJI consolidates **textbooks**, **legal norms**, and **court cases** into a single platform.
- It enables users to explore hidden connections through citation networks and refined textbook references.
- Designed with Human-Centered Design principles, TENJI offers an intuitive, user-



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Multi-Language Support

- The menu supports several languages to navigate the tool
- Tour introducing main functionality of TENJI
- Documents can be imported in any language
- Currently, there are only

- User Research with the Target Group
- Prototyping and Usability Inspection

Link to the first study with user research results:



| Low-Fidelity Prototyping: | | | |
|---|-----------------|--|---|
| O Prototype | [| (i) § 280 BGB | 9 |
| About 234 results | | | |
| §§ 280 Abs. 1, 241 Abs. 2, 311 Abs. 2 BGB Aufklärungs- und Sorgfaltspflichten ist in den §§ 280 Abs. 1, 241 Abs. 2, 311 Abs. 2 BGB kodifiziert (Palandt/Grüneberg § 311 Rn. 11 ff.)view more | Where to find > | Where to find: Riecke; Schmid Published date: 2018 | |
| § 280 Abs. 1 BGB der Pflichtverletzung in § 280 Abs. 1 BGB ergibt sich so ein Schadensersatzanspruch wegen der Verletzung der Pflicht zur vorvertraglichenview more | Where to find > | Teil 1: Mietrecht Kapitel 1: Allgemeine | |
| § 280 Abs. 1, 241 Abs. 2, 311 Abs. 2 BGB aus c.i.c. werden ab Überlassung der Mietsache durch die Vorschriften über die Mängelhaftung verdrängt (§§ 280 Abs. 1, 241 Abs. 2, 311 Abs. 2 BGB)view more | Where to find > | E. Einzelfragen zum | |
| §§ 280 Abs. 1, 241 Abs. 2, 311 Abs. 2 BGB Eine Haftung aus ci.c. (§§ 280 Abs. 1, 241 Abs. 2, 311 Abs. 2 BGB) kann gegeben sein, wenn der 102 Vermieter beim Mieter den Eindruck "view more | Where to find > | VI. Verschulden bei… Open PDF | |

Fast Custom Legal Document Search

- Special regular expressions (regex) to detect search for an article or a legal case, with a ranking based on citing cases
- Fulltext search on lemmatized content using Elasticsearch, with a ranking based on textual overlap to ensure explainability

Search Search Examples: for case name 'Nassauskiesung', case number 'BVerfGE 58 300', article name 'Erbrecht' and article number 'Art. 14 GG'. Use Filters for Advanced Search

friendly experience.

Implementation

- Built using a **modern tech stack**: React, Neo4j, NestJS, and Elasticsearch.
- Integrates a **labeled property graph** to manage complex legal relationships.
- **Developed iteratively** with continuous feedback loops and usability testing to refine the interface and functionality.

Use Case

Law Students: Study for exams by exploring legal concepts, norms, cases, and citations.

Applications

- Legal Research: Empower professionals to uncover citation links and contextual insights.
- Legal Education: Provide students and educators with tools for efficient study and

German documents in TENJI because of the Use Case

Citation Explorer

Supports traversal of incoming / outgoing citations between articles, cases, and textbooks

Article Number: Art. 14 GG

 \downarrow Cited by Articles (3) \checkmark Cited by Cases (444) \checkmark Book References (16) ↑ Cited Articles (0)

"Search as you type" within each tab with lacksquarematch highlighting

Found 326 Cases 1 2 3 4 5 ··· 33 > 10 / Page V Freiheit

Verfassungsgerichtlicher Prüfungsumfang, spezifisches Verfassungsrecht Citations In the Text

BVerfGE 18 85

Year:1964 Type: Beschluss

Reasoning: ...her bestimmen (BVerfGE 14, 263 [277 f.]). Dieser Aufgabe würde die vom Bundespatentgericht zugrunde gelegte Regelung des § 24 Abs. 3 Satz 2 und 3 PatG dienen; sie wäre als eine Vorschrift zu verstehen, die diese mögliche Eigentumsart gegen die Interessen der durch den Patentschutz in ihrer Handlungs freiheit.

Mitbestimmung der Arbeitnehmer

BVerfGE 50 290

Facts: ...Gleiches gelte für den - nicht in das Vereinsregister eingetragenen - Beschwerdeführer zu II 29), weil nicht

Filters for advanced search

Textbook Explorer

- Enables drill-down into the hierarchical textbook sections and filters references accordingly
- For each reference to a norm or a legal case, the context is shown and can be searched
- "Search as you type" with match highlighting

• URLs to the fulltext of the textbook

Grundrechte-Klausur-und-Examensfälle

Grundrechte-Klausur-und-Examensfälle 🖸 > Fall 5 - Meinungsfreiheit 🖆 > Lösung 🖆 > B. Begründetheit 🖆 > III. Rechtfertigung 🖾



teaching.

Policy Analysis: Support deeper exploration of norms and precedents in legal frameworks.

die Rechtsfähigkeit, sondern die Fähigkeit, Grundrechtsträger zu sein, entscheidend sei. Durch die angegriffe Vorschriften seien sie selbst, gegenwärtig und unmittelbar in ihrer Koalitions freiheit betroffen: Indem das.

Gesetze, den gesetzlichen Bestimmungen zum Schutz.



In the Text

Citations

Ready to share any feedback?

Let us know!

