05.02.2025

COMPLIANCE CHECK: CODE CRAFTER

Project work at Ulm University of Applied Sciences in the compulsory module Project

Client: advise GmbH

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Introduction

This project aims to assess whether a website complies with key regulations regarding the cookie banner, cookie preference center (including detailed cookie information), page footer, imprint, and newsletter. The initiative is part of the "Data Science in der Medizin" program, undertaken in the 5th semester, in collaboration with Prof. Dr. Vögel and the Advise GmbH.

The project is of significant relevance for the Advise GmbH, as many companies have already shown interest in such a solution. Therefore, partnering with us is a natural fit, leveraging our strong programming skills, making it an ideal collaboration for both parties. By combining Advise's industry insight with our technical expertise, we are positioned to create a valuable tool that can serve multiple businesses.

The project began with its share of challenges, especially when it came to understanding the complexities of web crawlers. Web crawlers, also known as spiders or bots, are automated programs that systematically browse the web, extracting data from websites. This technology is essential for our project, as it will allow us to automate the process of analysing and checking websites for compliance. While starting out, it was unclear where to begin, but through consistent collaboration and regular meetings with Advise, we've made steady progress. Our goal is to develop a tool that will analyse websites to ensure the proper functioning and legal compliance of these features, which are critical for maintaining user privacy and fostering trust online.

Milestones – A Short Summary

1) Forming the Project Teams

Since we have been studying together for quite some time, it quickly became clear who works best with whom. Although there were some points of criticism, overall, the groups formed efficiently and without major issues.

2) Identifying the Requirements

In the following, a rough summary of the previously submitted detailed document regarding the requirements.

Core Functionalities:

- **Frontend:** Input field for URLs (single/multiple), four text fields for requirement areas, default texts, pop-up confirmation, and user-friendly design.

- **Verification & Storage:** Checks compliance for cookies, imprint, privacy policy, and newsletter; stores results in a database with automatic PDF generation.

- **Cookie & Privacy Compliance:** Ensures cookies start deactivated, users can proceed without accepting them, privacy and imprint links are embedded, and a preference center allows adjustments.

- **Imprint & Footer:** imprint must be accessible, visible while scrolling, and not blocked by the cookie banner; footer links must be usable from every page.

- **Newsletter Compliance:** Checks textual accuracy and embedded links as well as phrasing and Age Limitation.

Optional Enhancements:

- Batch verification for multiple URLs.

- Third-party integrations.

- Workflows for Double Opt-In & email automation.

- CRM and email marketing integration.

3) Defining the Selected Tools/Technologies

In the following, a rough summary of the previously submitted detailed document regarding the selected tools and technologies.

Development Environment:
We use **Visual Studio Code** for its open-source nature, expandability, GitHub integration, and great performance.

Programming Language:
We chose **Python** for its relevance to our studies, extensive libraries, dynamic typing, and use in Machine Learning and Data Science.

GitHub:
We use **GitHub** for version control, easy merging, change tracking, and central access to the code for all team members.

Now, short summary of the most important Python packages that we used:

- **asyncio**: A library for writing concurrent code using asynchronous I/O, which allows handling multiple tasks in a non-blocking manner, making programs more efficient and responsive, especially in I/O-bound operations.
- **Flask**: A lightweight web framework for building web applications. It is simple, flexible, and easy to use, ideal for small to medium-sized projects. It supports the creation of RESTful APIs and rendering dynamic web pages.
- **Playwright**: A browser automation library that allows you to interact with web pages in a programmatic way. It's useful for end-to-end testing and web scraping and supports multiple browsers like Chrome, Firefox, and WebKit.
- **Selenium**: A popular web testing library that automates web browsers. It allows for testing web applications by simulating user interactions like clicks, form submissions, and navigation across multiple browsers.
- **BeautifulSoup**: A library for parsing HTML and XML documents. It's commonly used for web scraping to extract data from web pages and clean up malformed or poorly structured content.
- **xhtml2pdf**: A tool that converts HTML or XHTML documents into PDF format. It is particularly useful for generating reports or documents from web content, while preserving the formatting and layout of the original HTML.

4) Architecture

Architecture Type: Layered Architecture

The system follows a **layered architecture**, divided into:

- **Presentation Layer (Frontend):**
  Contains HTML files that represent the user interface (templates).

- **Logic Layer (Backend):**
  The Python program (app.py) handles the main business logic and operations. Thanks to **asyncio**, the backend is now split into different modules, allowing asynchronous execution of tasks.

- **Data Access Layer:**
  Contains Python files that interact with the database (e.g., create_db.py, compliance.db).

Architectural Components

- **Virtual Environment:**
  Ensures required packages are pre-installed for easy setup.

- **Static:**
  Stores images needed for the frontend.

- **Templates:**
  Contains HTML files for rendering the frontend.

- **Main Program:**
  Python code that manages operations and database setup.

- **Database:**
  A **sqlite3** database stores PDFs and related data.

In the first version of our project, we wrote all the code in a single Python file, which led to long loading times and poor readability. To improve this, we outsourced the code into separate classes and implemented asyncio. This change provided several advantages:

- **Improved Performance:** By using asynchronous execution, we significantly reduced loading times as tasks could run concurrently instead of sequentially.

- **Better Code Organization:** Offloading functions into separate modules made the code cleaner and easier to maintain.

- **Enhanced Scalability:** With asynchronous tasks, the system can efficiently handle a larger number of operations without slowing down.

- **Easier Debugging:** Breaking the code into smaller, manageable parts allowed for easier troubleshooting and testing.

Challenges Along the Way

1. At the beginning of our code development, we had all our functions in app.py and realized that this was not a good practice. The compliance check took too long because every function was in the same file.

   - Solution: To address this issue, we decided to refactor our code by outsourcing functions into separate classes. This made the code more readable, easier to manage, and allowed us to test individual functions for specific websites without having to run the entire compliance check.

2. The compliance check was taking too long to produce results, which was not optimal in terms of efficiency.

   - Solution: To improve performance, we decided to use asyncio for our functions. This allows our code to run asynchronously, meaning multiple tasks can execute without blocking each other.

3. Extracting the cookie banner text was problematic because, when using a more general selector, it also extracted cookie options and buttons like "Accept All" or "Decline All," which was not the intended goal.

   - Solution: The selector list was optimized by placing specific selectors at the top, ensuring a more precise extraction of the cookie banner text. More generic selectors were placed at the end of the list, so if the text could not be extracted with a specific selector, it could still be retrieved using a broader approach.

4. Highlighting words with spelling mistakes in the extracted cookie banner text was not feasible.

   - Solution: Instead of highlighting them, words with spelling mistakes will be listed below the extracted cookie banner text.

5. Another problem is that very few clients have adhered to the guidelines for text formatting in case of the newsletter, making it significantly more challenging to locate the correct text during the comparison process.

   - Solution: The search is based on similarity and prioritized keywords to find the best match, even though the likelihood of a perfect match may still be low.

6. When checking the contents of the imprint, we initially intended to specifically search for and extract the standard contents of an imprint. This proved to be extremely time-consuming and the variability of the imprints made it difficult to develop a suitable general solution. After several failures, we sat down together and came up with a different approach.

- o Solution: We came up with the idea of developing a universal solution that would identify and check the accuracy of all content regardless of the company's country of origin and the structure of the imprint. This led us to a kind of text comparison, which offers more flexibility and thus covers a wider range.

7. The page length of the imprint was originally only intended to show a result that indicates whether the 3 scroll pages are adhered to or not. However, we realized that due to various screen sizes we would not be able to find a universal solution.

- o Solution: Therefore, we thought that we could output the total pixel length of the imprint page and thus provide a general statement regarding conformity.

8. During the PageFooter check, we initially wanted to write all links in the PDF, but it turned out that if there was a malfunction of a link, it would extend across all subpages and we could therefore save a lot of unnecessary content in the PDF. This realization contributes to a better overview of the document.

9. A huge problem is to implement valid checks for all websites. There are websites on which not a single check has worked, such as Lufthansa or Zalando. In addition, it happens again and again that other pages are extracted by mistake and thus an incorrect report is generated.

10. A major issue is that many websites either do not offer newsletters at all, or they provide them in a hidden manner through unclear and hard-to-find URLs. Additionally, a significant number of websites feature newsrooms and press releases displaying current updates, instead of offering a straightforward newsletter sign-up option.

- o Solution: For the listed clients, links were added that direct from the main URL specifically to the relevant URL for the newsletter checks. Additionally, the system dynamically searches for common newsletter URLs to capture a broader range of possible sign-up pages.

Team collaboration

The teamwork was always respectful and every suggestion and criticism was taken into account. The meetings were adhered to and queries were generally answered quickly. The team members also supported each other when problems arose and stopped their own work to solve the problems of others. The meetings also showed clearly recognizable progress each time, but outside the meetings there was a lack of transparency regarding progress. In some cases, the current status was only communicated upon request and things had to be pointed out several times until they were completed. On the whole, the process in the team went very well and a productive path was taken through the different views and demands, as the team members supported each other with new ideas and incentives.

Frontend Instructions

Step 1

We start by calling app.py and accessing the tool via the browser. There we see our start page where we can enter a URL. It is important here that the main URL is specified and not a subpage. If you want to check the URL for content, click "check". If you simply want to access the database, you can access the database directly via the "Database" button.
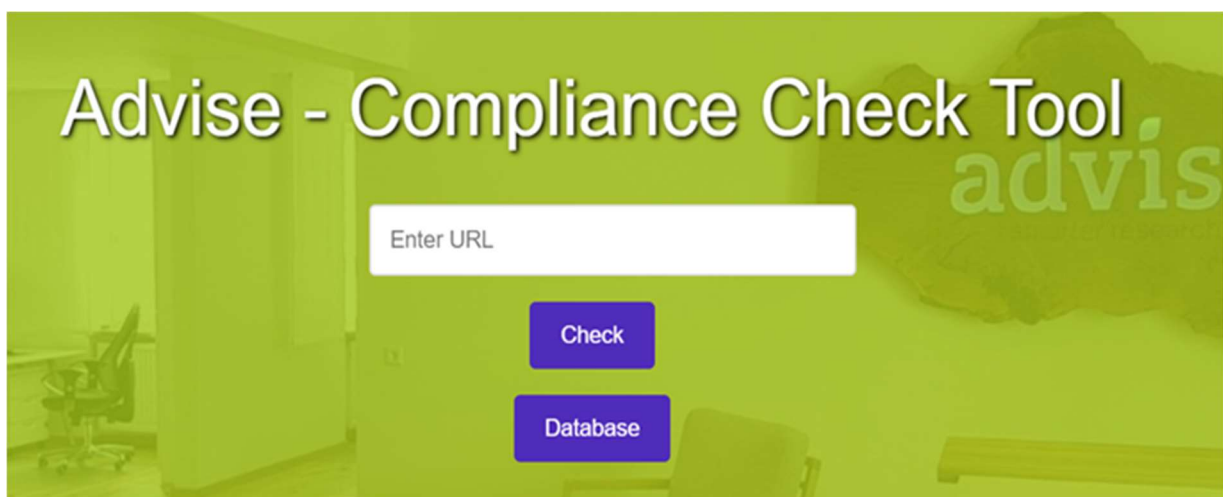
Step 2

If we want to carry out the check, we are now taken to this page. Here we have the option of entering several contents. Among other things, we can check the content of the legal notice for correctness, the content of the cookies and the newsletter.

If we do not have any specific content to check or the legal notice does not play a role in this check, we can use the "Reset to Default" button to access all default texts or remove the fields with "Reset Imprint Fields".

Step 3

If we want to check the content of the imprint, we can add as many content checks as we want using the "Add More Fields" button. It is advisable to separate individual contents for the sake of clarity, as can be seen in the following image.

Impressum Check
Provide the required terms for Impressum validation. You can add multiple fields.

Enter additional term

Enter additional term

Enter additional term

Enter additional term

Enter additional term

Enter additional term

Enter additional term

Enter additional term

[Add More Fields] [Reset Impressum Fields]

Impressum Check
Provide the required terms for Impressum validation. You can add multiple fields.

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Geschäftsführer: Stéphane Grimardias, Georg Held, Jean-Christophe Letellier, Klaudija Tomsic

Sitz der Gesellschaft: Düsseldorf

Handelsregister: Amtsgericht Düsseldorf HRB 99715

Ust-Ident-Nummer: DE 143596111

[Add More Fields] [Reset Impressum Fields]

Impressum

– L'Oréal Paris –

IMPRESSUM L'ORÉAL Deutschland GmbH

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Here you can see an example test. We extract the contents of our sample and enter them individually to check their existence in the imprint. Due to the varying structure and content of the imprint pages, the check is a 1 to 1 comparison. No specific content is searched for, but only the content is compared to see if it is present. In this way, specific content such as the names of the management can be checked as well as a more superficial check as to whether a management exists in the legal notice.

Step 4

Cookie Policy Check Text Field: If changing the default text is necessary, this field enables the user to enter the cookie policy text, which will be compared with the cookie banner text from a website.

The "Reset to Default" button returns a standard cookie banner text in German. If the user wants to check an English website, they must manually enter the standard text into this field. If the user wants to change the standard text, they need to modify the code in the app.py file, specifically in line 52 under "Default Templates."

Cookie Policy Check
Provide the template for the cookie policy text.

Auf unserer Webseite verwenden wir Cookies und ähnliche Technologien, um Informationen auf Ihrem Gerät (z.B. IP-Adresse, Nutzer-ID, Browser-Informationen) zu speichern und/oder abzurufen. Einige von ihnen sind für den Betrieb der Webseite unbedingt erforderlich. Andere verwenden wir nur mit Ihrer Einwilligung, z.B. um unser Angebot zu verbessern, ihre Nutzung zu analysieren, Inhalte auf Ihre Interessen zuzuschneiden oder Ihren Browser/Ihr Gerät zu identifizieren, um ein Profil Ihrer Interessen zu erstellen und Ihnen relevante Werbung auf anderen Onlineangeboten zu zeigen. Sie können nicht erforderliche Cookies akzeptieren ("Alle akzeptieren"), ablehnen ("Ohne

Step 5

In this part of the frontend, the template text of the respective company is inserted, serving as the basis for the text-based comparison of the newsletter consent. The client's template text is stored in the code, but it can also be updated in the frontend.

The "Reset to Default" button returns a standard newsletter text in German. If the user wants to check an English website, they must manually enter the standard text into this field. If the user wants to change the standard text, they need to modify the code in the app.py file, specifically in line 52 under "Default Templates."

Newsletter Check
Enter the expected wording for the newsletter subscription section.

Ja, hiermit willige ich in die Verarbeitung meiner o.g. Kontaktdaten zu Marketingzwecken im Wege der direkten Kontaktaufnahme durch [Marke] sowie die weiteren Marken der L'Oréal Deutschland GmbH ein. Um individuell auf meine Interessen zugeschnittene Informationen zu erhalten, willige ich außerdem ein, dass diese meine Reaktionen im Rahmen der Marketingaktionen sowie meine Interaktionen bei der Nutzung der Webservices der L'Oréal Deutschland GmbH und ihrer Marken erhebt und in einem Interessenprofil speichert, nutzt sowie meine E-Mail-Adresse oder meine Telefonnummer (soweit angegeben) in verschlüsselter Form an unsere Werbepartner übermittelt, sodass mir auch bei der Nutzung

Step 6

In this part of the frontend, similar to the description above, the template text of the respective company is inserted, serving as the basis for the text-based comparison of the extended newsletter information. The client's template text is stored in the code, but it can also be updated in the frontend.

The "Reset to Default" button returns a standard newsletter text in German. If the user wants to check an English website, they must manually enter the standard text into this field. If the user wants to change the standard text, they need to modify the code in the app.py file, specifically in line 52 under "Default Templates."

Newsletter more Details Check
Enter the expected wording for the Newsletter "More Details" Pop-Up text.

Die Einwilligung umfasst, dass Ihre oben angegebene E-Mailadresse sowie ggf. weitere von Ihnen angegebene Kontaktdaten von der L'Oréal Deutschland GmbH, Johannstraße 1, 40476 Düsseldorf (im Folgenden L'Oréal), gespeichert und genutzt werden, um Sie per E-Mail, Telefon, Telefax, SMS, Briefpost persönlich und relevant über interessante Leistungen, Produkte und Aktionen von [Marke] sowie aus dem Angebot von L'Oréal und deren weiteren Marken zu informieren. Um Ihnen individuell auf Ihre Interessen zugeschnittene Informationen zukommen zu lassen, speichert L'Oréal auch die Daten zu Ihren Reaktionen auf die empfangenen Informationen und die weiteren Daten aus Ihrer

Step 7

Once all the desired content has been entered, the content is checked by pressing the "Validate Texts" button. The check varies from URL to URL and can take a few minutes.

The report is now in the database.

Thank you for using the tool. The report has been saved successfully.

| Back to the start page | Download PDF | View Database Records |

Once the check has been completed, you now have the opportunity to view the accuracy of the content by downloading the PDF. If, on the other hand, you want to carry out a further check directly without checking the content in more detail, you can go straight back to the start page by pressing the "Back to the start page" button. The last option after the check has been completed is to access the database using the "View Database Records" button.

Step 8

All checks are now displayed in the database with the corresponding date, time and the URL entered, the conformity and the associated PDF. These can also be downloaded later. For better orientation, there is also a filter function with which you can search for specific URLs to limit the number of reports and have a better overview.

Database Records

| Show all | | Filter |

ID	Date	URL	Conformity	Conformity report
146	2025-02-02 00:12:01	https://www.loreal-paris.de...	X	PDF
145	2025-02-02 00:00:22	https://www.loreal-paris.de...	X	PDF
144	2025-02-01 23:51:33	https://www.loreal-paris.de...	X	PDF
143	2025-02-01 23:46:18	https://www.loreal-paris.de...	X	PDF
142	2025-02-01 23:26:49	https://www.loreal-paris.de...	X	PDF
141	2025-02-01 23:12:41	https://www.loreal-paris.de...	X	PDF
140	2025-02-01 23:03:58	https://www.loreal-paris.de...	X	PDF

1 2 3 ... 15 Next

Back to Start

| Show all | Filter |

Show all
https://www.loreal-paris.de
https://www.santander.de/privatkunden/
https://wiemer-arndt.de
https://www.hochland.de
https://www.verivox.de
https://www.bitburger.de
https://de.nissin-foods.eu/de
https://www.hassia.com
https://www.gourmet-connection.de
https://www.royalcanin.com/de
https://www.hansgrohe.de
https://www.husqvarna.com/de/
https://www.kaercher.com/de/
https://www.de.weber
https://www.1und1.de
https://www.avira.com/de
https://www.urlaubspiraten.de
https://www.aldi-sued.de/de/homepage.html
https://www.aldi-nord.de

Instructions for every programmed function

Please make sure to check the README.txt file, as it contains information on how to install all the necessary packages for our program.

Instructions for the Cookie-Banner Functions

1) Cookie Banner Visibility Check

Automatic Pop-Up: The cookie banner must appear automatically when a user visits the website for the first time.

Solution: cookie_banner_visibility.py checks whether a cookie banner is visible. Possible feedback includes: „Cookie banner detected. "and „No visible cookie banner found. "

- If this check works successfully for a website, it looks like the following:

Cookie Banner Visibility	✔■	Cookie banner detected.

- If this check fails for a website, it looks like the following:

Cookie Banner Visibility	■	No visible cookie banner found.

2) "Without Consent" Link Check

"Continue Without Consent" Link: This option must be clearly visible in the top right corner.

Solution: cookie_banner_without_consent.py checks for the presence of an "Ohne Einwilligung" or "Continue without Consent" link and determines its position.

- If this check works successfully for a website, it looks like the following:

Continue Without Consent Link	✔■	'Continue Without Consent' link found and clickable. Location: top=88, left=803.109375, width=153.890625, height=16.59375.

- If this check fails for a website, it looks like the following:

Continue Without Consent Link	■	No clickable 'Continue Without Consent' link or button found.

- or like this: the website 1&1 did not have a 'Continue without consent' link.

Continue Without Consent Link	■	Timeout while waiting for the 'Continue Without Consent' button. It is likely that the expected 'Continue Without Consent' button are not present on this page.

3) Cookie Selection Check

Cookie Selection: At least four cookie categories (performance, functionality, advertisement, social media) must be available, with no pre-selection of optional cookies.

Solution: **cookie_options.py** checks if all cookie options are available. The acceptable options are:

- For German websites: ["Leistungs-Cookies", "Funktionelle Cookies", "Werbe-Cookies", "Social-Media-Cookies"]
- For English websites: ["Performance Cookies", "Functional Cookies", "Advertising Cookies", "Social Media Cookies"]

These options can be adjusted in the cookie_options.py file. This check also determines whether the cookie options are preselected or not.

- If this check works successfully for a website, it looks like the following:

Cookie Selection	✔■	**Options Found and Their Checked Status:** - Leistungs-Cookies: Unchecked - Funktionelle Cookies: Unchecked - Werbe-Cookies: Unchecked - Social-Media-Cookies: Unchecked **All required cookie options are present and not preselected.**

- If this check fails for a website, it looks like the following:

Cookie Selection	■	**Options Found and Their Checked Status:** - Performance Cookies: Not Found - Functional Cookies: Not Found - Advertising Cookies: Not Found - Social Media Cookies: Not Found **Not all required cookie options are present or some are preselected.**

- If the check doesn't work on a website, it looks like this

Cookie Selection	■	Failed to detect the language of the cookie banner.

4) Cookie Banner Text Comparison Check

Correct Text & Scrollbar: The banner text must be accurate and, if necessary, scrollable

Solution: cookie_banner_text.py checks whether the cookie banner text on the website matches the template cookie banner text. It calculates the similarity percentage between the two texts and highlights any spelling mistakes found.

- If this check works successfully for a website, it looks like the following:

Cookie Banner Text Comparison	✔■	**Template Text:** Auf unserer Webseite verwenden wir Cookies und ähnliche Technologien, um Informationen auf Ihrem Gerät (z.B. IP-Adresse, Nutzer-ID, Browser-Informationen) zu speichern und/oder abzurufen. Einige von ihnen sind für den Betrieb der Webseite unbedingt erforderlich. Andere verwenden wir nur mit Ihrer Einwilligung, z.B. um unser Angebot zu verbessern, ihre Nutzung zu analysieren, Inhalte auf Ihre Interessen zuzuschneiden oder Ihren Browser/Ihr Gerät zu identifizieren, um ein Profil Ihrer Interessen zu erstellen und Ihnen relevante Werbung auf anderen Onlineangeboten zu zeigen. Sie können nicht erforderliche Cookies akzeptieren ("Alle akzeptieren"), ablehnen ("Ohne Einwilligung fortfahren") oder die Einstellungen individuell anpassen und Ihre Auswahl speichern ("Auswahl speichern"). Zudem können Sie Ihre Einstellungen (unter dem Link "Cookie-Einstellungen") jederzeit aufrufen und nachträglich anpassen. Weitere Informationen enthalten unsere Datenschutzinformationen. **Website Text:** Auf unserer Webseite verwenden wir Cookies und ähnliche Technologien, um Informationen auf Ihrem Gerät (z.B. IP-Adresse, Nutzer-ID, Browser-Informationen) zu speichern und/oder abzurufen. Einige von ihnen sind für den Betrieb der Webseite unbedingt erforderlich. Andere verwenden wir nur mit Ihrer Einwilligung, z.B. um unser Angebot zu verbessern, ihre Nutzung zu analysieren, Inhalte auf Ihre Interessen zuzuschneiden oder Ihren Browser/Ihr Gerät zu identifizieren, um ein Profil Ihrer Interessen zu erstellen und Ihnen relevante Werbung auf anderen Onlineangeboten zu zeigen. Sie können nicht erforderliche Cookies akzeptieren ("Alle akzeptieren"), ablehnen ("Ohne Einwilligung fortfahren") oder die Einstellungen individuell anpassen und Ihre Auswahl speichern ("Auswahl speichern"). Zudem können Sie Ihre Einstellungen (unter dem Link "Cookie-Einstellungen") jederzeit aufrufen und nachträglich anpassen. Weitere Informationen enthalten unsere Datenschutzinformationen. **Similarity:** 100.00% No spelling mistakes found in the website text.

- If this check fails for a website, it looks like the following:

| Cookie Banner Text Comparison | ■ | **Template Text:**
Auf unserer Webseite verwenden wir Cookies und ähnliche Technologien, um Informationen auf Ihrem Gerät (z.B. IP-Adresse, Nutzer-ID, Browser-Informationen) zu speichern und/oder abzurufen. Einige von ihnen sind für den Betrieb der Webseite unbedingt erforderlich. Andere verwenden wir nur mit Ihrer Einwilligung, z.B. um unser Angebot zu verbessern, ihre Nutzung zu analysieren, Inhalte auf Ihre Interessen zuzuschneiden oder Ihren Browser/Ihr Gerät zu identifizieren, um ein Profil Ihrer Interessen zu erstellen und Ihnen relevante Werbung auf anderen Onlineangeboten zu zeigen. Sie können nicht erforderliche Cookies akzeptieren ("Alle akzeptieren"), ablehnen ("Ohne Einwilligung fortfahren") oder die Einstellungen individuell anpassen und Ihre Auswahl speichern ("Auswahl speichern"). Zudem können Sie Ihre Einstellungen (unter dem Link "Cookie-Einstellungen") jederzeit aufrufen und nachträglich anpassen. Weitere Informationen enthalten unsere Datenschutzinformationen.

Website Text:
We are using cookies/tools to deliver and maintain the service, including protection against fraud or abuse and for audience measurement. You can object to the latter in the settings. By clicking additionally "accept all", we use cookies/tools to improve the quality and performance of our services, for functional and personalized performance and design improvements, to measure effectiveness of ads or campaigns, for personalize content and to present you individualized information for marketing purposes, including outside our website via vendors. These enable personalized advertisements and extended analysis and evaluation options regarding the target group and user behaviour. This includes the access and storage of data on your device. You also agree that the data may be transferred to third countries outside the European Economic Area without an adequate level of protection under data protection law (esp. USA). It is possible that authorities may access the data without any legal remedy. If you do not wish the processing described in this paragraph, you can close the banner. You can withdraw your consent at any time with future effect.

Similarity:
1.60%

No spelling mistakes found in the website text. |

- If the check doesn't work on a website, it looks like this:

| Cookie Banner Text Comparison | ■ | Template Text:
Auf unserer Webseite verwenden wir Cookies und ähnliche Technologien, um Informationen auf Ihrem Gerät (z.B. IP-Adresse, Nutzer-ID, Browser-Informationen) zu speichern und/oder abzurufen. Einige von ihnen sind für den Betrieb der Webseite unbedingt erforderlich. Andere verwenden wir nur mit Ihrer Einwilligung, z.B. um unser Angebot zu verbessern, ihre Nutzung zu analysieren, Inhalte auf Ihre Interessen zuzuschneiden oder Ihren Browser/Ihr Gerät zu identifizieren, um ein Profil Ihrer Interessen zu erstellen und Ihnen relevante Werbung auf anderen Onlineangeboten zu zeigen. Sie können nicht erforderliche Cookies akzeptieren ("Alle akzeptieren"), ablehnen ("Ohne Einwilligung fortfahren") oder die Einstellungen individuell anpassen und Ihre Auswahl speichern ("Auswahl speichern"). Zudem können Sie Ihre Einstellungen (unter dem Link "Cookie-Einstellungen") jederzeit aufrufen und nachträglich anpassen. Weitere Informationen enthalten unsere Datenschutzinformationen.

Website Text:
Cookie banner not found using any common selectors.

Similarity:
6.63%

No spelling mistakes found in the website text. |

5) Cookie Banner Links to Imprint and Privacy Policy Check

Clickable Links: There must be clearly readable and accessible links to the **Imprint** and **Privacy Policy.**

Solution: cookie_banner_link_checker.py checks whether the cookie banner includes links to the imprint and privacy policy. It verifies if the links are structured as url/privacy-policy and url/imprint and ensures that these links are clickable.

- If this check works successfully for a website, it looks like the following:

| Cookie Banner Links to Imprint and Privacy Policy | ✔■ | Imprint and Privacy Policy links have been found in the cookie banner.
Datenschutzinformationen URL:
https://www.loreal-paris.de/datenschutzbestimmungen **clickable:** ✓
Impressum URL: https://www.loreal-paris.de/impressum **clickable:** ✓ |

Here, you can see that the URL is in the wrong format: url+„Datenschutzbestimmungen".

However, in the URL bar, it is displayed correctly.

- If this check fails for a website, it looks like the following:

Cookie Banner Links to Imprint and Privacy Policy	■	**Validation failed:** **Privacy Policy link not found in the cookie banner.** **Imprint link not found in the cookie banner.**

- If the check doesn't work on a website, it looks like this: (Here the website 1&1 and Lufthansa)

Cookie Banner Links to Imprint and Privacy Policy	■	An error occurred: No features in text.

Cookie Banner Links to Imprint and Privacy Policy	■	No visible cookie banner found.

6) Cookie Banner Scrollbar Check

Correct Text & Scrollbar: The banner text must be accurate and, if necessary, scrollable

Solution: cookie_banner_scrollbar.py checks whether the cookie banner has a visible and functional scrollbar when content overflows, ensuring that all content remains accessible. If the content overflows and the cookie banner lacks a visible and functional scrollbar, the check will result in nonconformity.

- If this check works successfully for a website, it looks like the following:
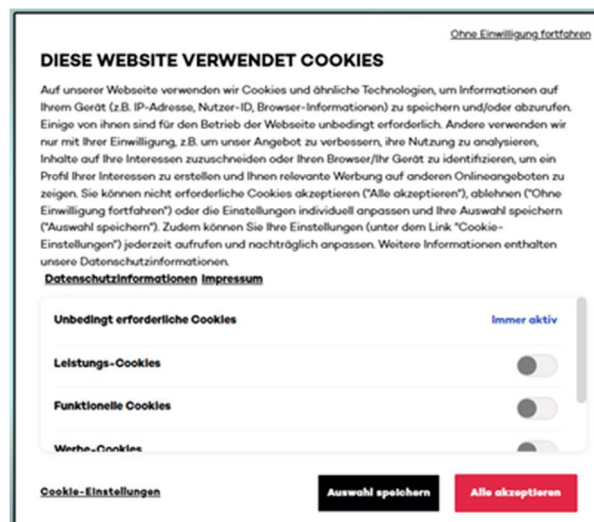
Cookie Banner Scrollbar	✔️	Conform: Overflow detected and scrollbar is present.

When there is no overflow:

Cookie Banner Scrollbar	✔️	Conform: No overflow, no scrollbar needed.

- If this check fails for a website, it looks like the following: (radbag)

Cookie Banner Scrollbar	■	Not Conform: Overflow detected but no scrollbar available. Scrollable: False, OverflowY: auto, scrollHeight: 330, clientHeight: 330, offsetHeight: 330, Scrollbar Hidden: False

Here we can see that the implementation of a scrollbar was forgotten.
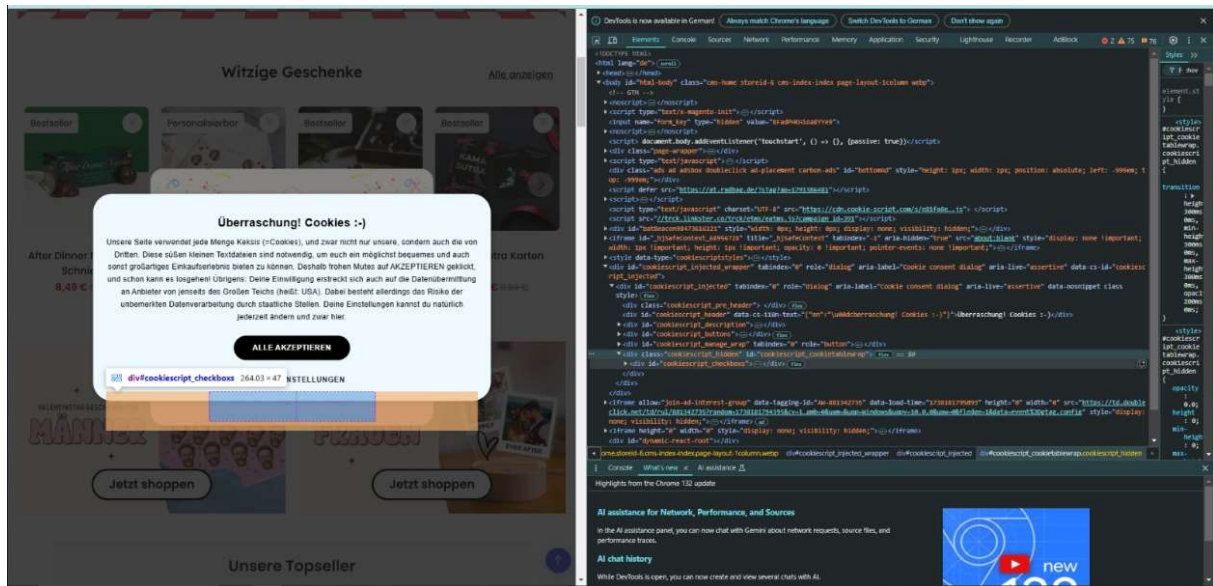
- If the check doesn't work on a website, it looks like this

Cookie Banner Scrollbar	■	Page load timeout.

7) Conform Design Check

Conform Design: The layout and button placement must follow usability best practices and be functional on all device types (desktop, laptop, mobile).

Solution: cookie_banner_conform_design.py ensures that the cookie banner design meets the following criteria:

- 'Cookie Settings' is positioned at the bottom left.

- Cookie options are displayed vertically.

- Buttons are aligned and of the same size.

- Font sizes are readable. (Font size larger than 11)

- The design is responsive across devices.

  - If this check works successfully for a website, it looks like the following:

Conform Design	✔■	**Conform Design for https://www.loreal-paris.de/:** **Checking URL:** https://www.loreal-paris.de/ - 'Cookie Settings' is correctly positioned at the bottom-left. - Found 5 valid cookie options across all selectors. **Option 1 - Y: 401.109375, Height: 37.796875** **Option 2 - Y: 438.90625, Height: 47.59375** **Option 3 - Y: 486.5, Height: 47.59375** **Option 4 - Y: 534.09375, Height: 47.59375** **Option 5 - Y: 581.6875, Height: 37.84375** - Cookie options are stacked vertically. - Buttons 'Accept all' and 'Save preferences' are the same size and aligned. - All elements have a readable font size. - Cookie banner is functional on iPhone 12. - Cookie banner is functional on iPad Mini. - Cookie banner is functional on Galaxy S21.

  - If this check fails for a website, it looks like the following:

Conform Design	■	**Conform Design for** **http://tesa.com/de-ch/buero-und-zuhause/befestigen-aufhaengen/klebenagel?ga** **Checking URL:** http://tesa.com/de-ch/buero-und-zuhause/befestigen-aufhaengel?gad_so **Warning:** 'Cookie Settings' is not at the bottom-left. - Found 0 valid cookie options across all selectors. - Cookie options are stacked vertically. **Warning:** 'Accept all' or 'Save preferences' is missing. **Warning:** Element with font size 10.6667px is too small. - Cookie banner is functional on iPhone 12. - Cookie banner is functional on iPad Mini. - Cookie banner is functional on Galaxy S21.

Instructions for the Cookie Preference Center Functions

1) Cookie Preference Center More Info Check

More Information: Users should be able to expand details about cookie categories for better understanding.

Solution: cookie_more_information.py checks whether the consumer can click on the '+' button in the cookie preferences for more information on each cookie category and verifies that additional details become visible.

- If this check works successfully for a website, it looks like the following:

Cookie Banner More Info	✔■	**Checking for 'More Information' buttons on https://www.loreal-paris.de/:** - Successfully clicked 'Cookie Einstellungen'. - **Found 5 'More Information' buttons.**

- If this check fails for a website, it looks like the following:

Cookie Prefence Center More Info	■	**Checking for 'More Information' buttons on https://www.beiersdorf.de/:** - Successfully clicked 'Cookie Einstellungen'. **Warning:** No 'More Information' buttons found.

- If the check doesn't work on a website, it looks like this:

Cookie Prefence Center More Info	■	**Checking for 'More Information' buttons on https://www.tesa.com/de-ch/buero-und-zuhause/befestigen-aufhaenger/klebena Warning:** 'Cookie Einstellungen' button not found.

2) Cookie Preference Center Accessibility

Accessibility: Users must be able to access the preference center from the cookie banner or website footer.

Solution: cookie_preference_center_vis.py verifies whether the cookie preference center is accessible from the cookie banner. The function first detects the cookie banner, then clicks on the corresponding button (ideally labelled Cookie-Einstellungen) that leads to the cookie preference center and finally checks its visibility.

- If this check works successfully for a website, it looks like the following:

Cookie Preference Accessibility	✔■	Cookie Preference is accessible from the cookie banner.

- If the check doesn't work on a website, it looks like this:

Cookie Preference Accessibility	■	Error during check: ElementHandle.click: Timeout 30000ms exceeded. Call log: - attempting click action - 2 × waiting for element to be visible, enabled and stable - - element is visible, enabled and stable - - scrolling into view if needed - - done scrolling - - from ... subtree intercepts pointer events - - retrying click action - - waiting 20ms - 2 × waiting for element to be visible, enabled and stable - - element is visible, enabled and stable - - scrolling into view if needed - - done scrolling - - from ... subtree intercepts pointer events - - retrying click action - - waiting 100ms - 51 × waiting for element to be visible, enabled and stable - - element is visible, enabled and stable - - scrolling into view if needed - - done scrolling - - from ... subtree intercepts pointer events - - retrying click action - - waiting 500ms

3) Cookie Preference Center: Links to Imprint and Privacy Policy

Clickable Links: The Imprint and Privacy Policy links must be functional and properly labelled.

Solution: cookie_preference_clickable_links.py checks whether the cookie preference center contains links to the imprint and privacy policy. To achieve this, it first detects the cookie banner and clicks the button to open the cookie preference center (ideally labelled "Cookie-Einstellungen"). Then, it detects the cookie preference center and verifies whether there are links to the imprint and privacy policy.

- The acceptable names for these links are:
- **English:** "Imprint" and "Privacy Policy"
- **German:** "Datenschutzinformationen" and "Impressum"
  The acceptable names for these links can be extended in the **self.imprint_texts** and **self.privacy_policy_texts** lists.
- If this check works successfully for a website, it looks like the following:

Cookie Preference Center Links to Imprint and Privacy Policy	✔■	Validation passed: **Cookie Preference Center detected using selector:** [role="dialog"] **Datenschutzinformationen URL:** https://www.loreal-paris.de/datenschutzbestimmungen **clickable:** ✓ **Impressum URL:** https://www.loreal-paris.de/impressum **clickable:** ✓

- If this check fails for a website, it looks like the following:

Cookie Preference Center Links to Imprint and Privacy Policy	■	Datenschutzinformationen link not found. **Impressum URL:** https://www.beiersdorf.de/meta-pages/impressum **clickable:** ✓
Cookie Preference Center Links to Imprint and Privacy Policy	■	**Datenschutzinformationen link not found.** **Privacy Policy link not found.** **Impressum link not found.** **Imprint link not found.**

- If the check doesn't work on a website, it looks like this:

Cookie Preference Center Links to Imprint and Privacy Policy	■	An error occurred: No features in text.

Instructions for the Imprint Functions

Separate Page: The imprint must have a dedicated URL and be labelled "Imprint."

Solution: impressum_checker.py

Visibility: The imprint should be fully readable without horizontal scrolling and visible within three screen pages when scrolling vertically.

Solution: impressum_visibility_checker.py

Here we have the tasks for the imprint and the associated check. The check is performed automatically without the need to enter specific content. All you need to do is enter the main URL on the start page.

The URL for the legal notice is now displayed in the PDF. If there is no horizontal scrollbar, the PDF returns the result "No horizontal scrollbar detected" and therefore meets the requirements. The next task is a workaround, as the page lengths vary and the requirements may change, we have determined the total length based on its pixels. This makes it possible to make a generally valid statement about the length and, in the case of standardized page lengths, it is also easy to determine whether the requirement of 3 screen pages is met.

Impressum Visibility	✔■	**Impressum Visibility Check for** **https://www.loreal-paris.de/impressum** - Navigated to the 'Impressum' page. - No horizontal scrollbar detected. - **Info:** The total side height is 1925 Pixel. - **Info:** The height of the viewport is 720 Pixel.

- In the event that no imprint can be found, the following message will be displayed and therefore no detailed check will be carried out.

Impressum Visibility	■	**Impressum Visibility Check for https://www.dinmedia.de/de** - **Error:** No 'Impressum' link found on the main page.

- If contents of the imprint have been checked, the PDF will show whether these contents exist in the imprint or not.

Impressum Term: L'ORÉAL Deutschland GmbH	✔■	Term 'L'ORÉAL Deutschland GmbH' was found.
Impressum Term: Geschäftsbereich L'Oréal Paris	✔■	Term 'Geschäftsbereich L'Oréal Paris' was found.
Impressum Term: Johannstraße 1 40476 Düsseldorf	✔■	Term 'Johannstraße 1 40476 Düsseldorf' was found.
Impressum Term: Tel: 0211 / 544 133 77	✔■	Term 'Tel: 0211 / 544 133 77' was found.
Impressum Term: E-Mail: info@loreal-paris.de	✔■	Term 'E-Mail: info@loreal-paris.de' was found.
Impressum Term: Geschäftsführer: Stéphane Grimardias, Georg Held, Jean-Christophe Letellier, Klaudija Tomsic	✔■	Term 'Geschäftsführer: Stéphane Grimardias, Georg Held, Jean-Christophe Letellier, Klaudija Tomsic' was found.
Impressum Term: Sitz der Gesellschaft: Düsseldorf	✔■	Term 'Sitz der Gesellschaft: Düsseldorf' was found.
Impressum Term: Handelsregister: Amtsgericht Düsseldorf HRB 99715	✔■	Term 'Handelsregister: Amtsgericht Düsseldorf HRB 99715' was found.
Impressum Term: Ust-Ident-Nummer: DE 143596111	✔■	Term 'Ust-Ident-Nummer: DE 143596111' was found.

- If the content cannot be found in the imprint, the following output is generated

Impressum Term: Ust-Ident-Nummer: DE 143577656	■	Term 'Ust-Ident-Nummer: DE 143577656' was not found.

- If no content has been entered for the imprint check, this information will appear in the PDF

Impressum URL	✔■	Impressum found at https://ding.eu/sonstiges/impressum. Note: No terms were defined for the imprint check. The check could therefore not take place.

Instructions for the Page Footer Functions

Accessible on All Pages: The links must always be visible and accessible, either directly or via a menu.

Solution: pagefooter.py

Imprint Link: Must be present on every page and in the correct language.

Privacy Policy Link: Must link to the relevant privacy policy and not to a third-party document.

Cookie Settings Link: Must be visible and open the cookie preference center.

Solution: pagefooter_essentials.py

The check of the footer links is automated and checks whether there are non-functioning links in the page footer on the main URL or subpages. If all links work properly, the following message is displayed

Footer Links	✔■	All footer links work properly.

Unfortunately the page was fixed and so we could not generate the result in English. Nevertheless, it looks like this when it comes to a broken link in the page footer.

Footer Links	■	Folgende Footer-Links funktionieren nicht: , https://www.loreal-paris.de/datenschutzrichtlinie,

www.loreal-paris.de/datenschutzrichtlinie

L'ORÉAL
PARIS
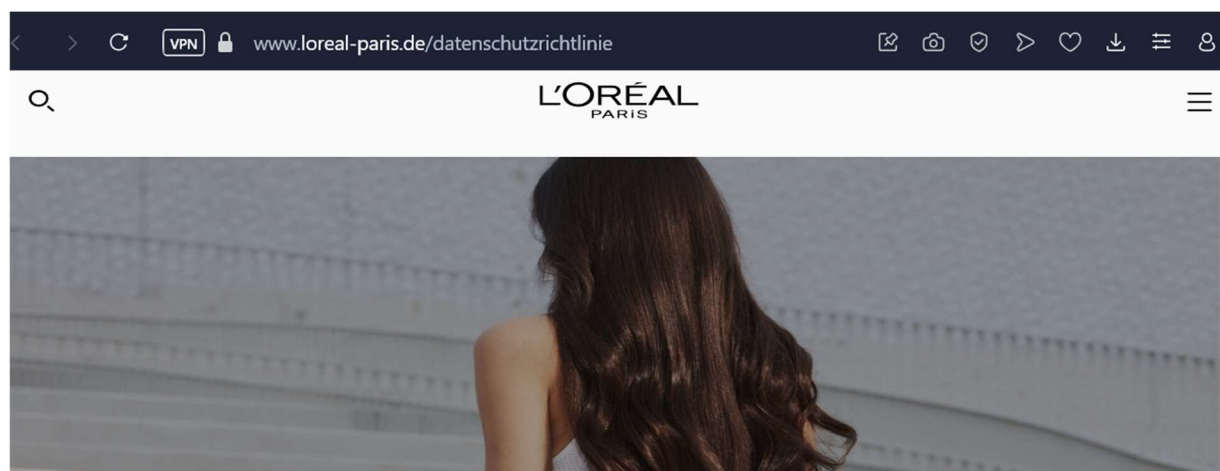
Zurück zur Startseite
404 Seite nicht gefunden

Wir konnten die gesuchte Seite nicht finden. Möglicherweise ist der Link, den du angeklickt hast, fehlerhaft oder die Seite wurde entfernt.

The check of the imprint link, the privacy policy and the cookie settings in the page footer is also automated and requires no further action.

- If everything is present, the result is as follows.

Footer Imprint	✔■	Imprint-Link found.
Footer privacy policy	✔■	privacy policy link found.
Footer cookie settings	✔■	Cookie settings link found.

- If one of these contents cannot be found, the following message appears.

Footer cookie settings	■	Cookie settings link missing!

Instructions for the Newsletter Functions

1) Clear CTA Check

Clear CTA (Call-to-Action): The subscription button must be easily recognizable and clearly worded.

Solution: check_clear_cta.py verifies whether there is a clear and visible Call-to-Action (CTA) phrase on the newsletter page.

Possible feedback includes: „Found CTA: *CTA-Phrase*" and „ No clear CTA found."

- If the newsletter page and the CTA is found:

Clear CTA	✔■	Found CTA: 'Anmelden'

- If there is no newsletter or no CTA found:

Clear CTA	■	No clear CTA found or no newsletter found

2) Age Limitation Check

Age Limitation: The minimum subscription age must be 18

Solution: check_age_limitation.py verifies whether a visible age limitation is present on the newsletter website. This includes elements such as a text box or a radio button with phrases like "Birthday" or "Age verification."

Possible feedback includes: „Age Limitation found" and „No Age Limitation found".

- If an Age Limitation phrase is found:

Age Limitation	✔■	Age Limitation found: 'Geburtstag'

- If there isn't an Age Limitation or no newsletter page found:

| Age Limitation	■	Error: No Age Limitation or Newsletter found.

3) Newsletter Wording Check

Correct Text: The wording of the entire subscription section must be accurate

Solution: check_newsletter_wording.py primarily verifies two key aspects:

1. The presence of a checkbox to confirm user consent.

2. The comparison between the extracted text from the website and the predefined model text to ensure alignment.

The feedback displays the model text, the extracted text for comparison, and the similarity percentage.

- If a newsletter page is found, the following will appear in the pdf:

Newsletter Wording	✔■	**Template Text:** Ja, hiermit willige ich in die Verarbeitung meiner o.g. Kontaktdaten zu Marketingzwecken im Wege der direkten Kontaktaufnahme durch [Marke] sowie die weiteren Marken der L'Oréal Deutschland GmbH ein. Um individuell auf meine Interessen zugeschnittene Informationen zu erhalten, willige ich außerdem ein, dass diese meine Reaktionen im Rahmen der Marketingaktionen sowie meine Interaktionen bei der Nutzung der Webservices der L'Oréal Deutschland GmbH und ihrer Marken erhebt und in einem Interessenprofil speichert, nutzt sowie meine E-Mail-Adresse oder meine Telefonnummer (soweit angegeben) in verschlüsselter Form an unsere Werbepartner übermittelt, sodass mir auch bei der Nutzung der Webservices unserer Werbepartner entsprechende Informationen angezeigt werden. **Extracted Text:** Ja, hiermit willige ich in die Verarbeitung meiner o.g. Kontaktdaten zu Marketingzwecken im Wege der direkten Kontaktaufnahme durch L'Oréal Professionnel Paris sowie die weiteren Marken der L'Oréal Deutschland GmbH ein. Um individuell auf meine Interessen zugeschnittene Informationen zu erhalten, willige ich außerdem ein, dass diese meine Reaktionen im Rahmen der Marketingaktionen sowie meine Interaktionen bei der Nutzung der Webservices der L'Oréal Deutschland GmbH und ihrer Marken erhebt und in einem Interessenprofil speichert, nutzt sowie meine E-Mail-Adresse oder meine Telefonnummer (soweit angegeben) in verschlüsselter Form an unsere Werbepartner übermittelt, sodass mir auch bei der Nutzung der Webservices unserer Werbepartner entsprechende Informationen angezeigt werden. **Similarity:** 93.63%

- If no newsletter page is found, following Error will occur:

Newsletter Wording	■	**Template Text:** Ja, hiermit willige ich in die Verarbeitung meiner o.g. Kontaktdaten zu Marketingzwecken im Wege der direkten Kontaktaufnahme durch [Marke] sowie die weiteren Marken der L'Oréal Deutschland GmbH ein. Um individuell auf meine Interessen zugeschnittene Informationen zu erhalten, willige ich außerdem ein, dass diese meine Reaktionen im Rahmen der Marketingaktionen sowie meine Interaktionen bei der Nutzung der Webservices der L'Oréal Deutschland GmbH und ihrer Marken erhebt und in einem Interessenprofil speichert, nutzt sowie meine E-Mail-Adresse oder meine Telefonnummer (soweit angegeben) in verschlüsselter Form an unsere Werbepartner übermittelt, sodass mir auch bei der Nutzung der Webservices unserer Werbepartner entsprechende Informationen angezeigt werden. **Extracted Text:** Error: No newsletter page found. **Similarity:** 0.00%

4) Newsletter Functionality Check

Link Functionality: All links must lead to the correct sections, including:

1. Right of revocation in the privacy policy.

2. Imprint.

3. Data privacy policy.

4. Advertising partners.

Solution: **check_newsletter_functionality.py** primarily verifies two key aspects:

1. Whether the newsletter page contains all four required links: Right of Withdrawal, Imprint, Data Protection Information, and Advertising Partners.
2. If these links are present, the function checks whether they lead to the correct pages or if they are invalid.

The feedback displays the type of link, the text under which it was found, the URL of the link, and its status (valid/invalid).

If no matching links are found, the feedback states: "No matching links found."

- The Link is found:

Newsletter Functionality ■

Imprint

Term: Impressum
Link Text: IMPRESSUM
URL: https://www.lorealprofessionnel.de/impressum
Status: Valid

- No Link is found:

Newsletter Functionality Check

Right of Withdrawal

No matching links found.

- A Link is found but the URL is invalid:

Data Protection Information

Term: Datenschutzinformationen

Link Text: Datenschutzinformationen

URL: https://www.lorealprofessionnel.de/datenschutzhinweise

Status: Invalid (HTTP 404)

- And how the entire section appears:

Newsletter Functionality	■	**Newsletter Functionality Check** **Right of Withdrawal** No matching links found. --- **Imprint** **Term:** Impressum **Link Text:** IMPRESSUM **URL:** https://www.lorealprofessionnel.de/impressum **Status:** Valid --- **Data Protection Information** **Term:** Datenschutzinformationen **Link Text:** Datenschutzinformationen **URL:** https://www.lorealprofessionnel.de/datenschutzhinweise **Status:** Invalid (HTTP 404) --- **Advertising Partners** No matching links found. ---

5) Newsletter More Details Check

Additional Privacy Information: Clicking on "More Details" should open a popup with further privacy information, including a working link to the list of advertising partners.

Solution: check_newsletter_more_details.py primarily performs two tasks:

1. Searches for a button or a similar element (e.g., "More Details") that expands the text and checks if it is present.
2. Compares the extracted text with a predefined model text and provides feedback.

The feedback displays the template text, the extracted text, and the similarity percentage.

If no "More Details" button is found, the feedback returns the statement: "No More Details Button found."

- If there is a "More Details" button and the text comparison has been completed:

Newsletter More Details	✔■	**Erwarteter Text:** Die Einwilligung umfasst, dass Deine oben angegebene E-Mailadresse sowie ggf. weitere von Dir angegebene Kontaktdaten und sonstige Informationen von der L'Oréal Deutschland GmbH, Johannstraße 1, 40476 Düsseldorf (im Folgenden "L'Oréal"), gespeichert und genutzt werden, um Dich per E-Mail, Telefon, Telefax, SMS, Briefpost persönlich und relevant über interessante Leistungen, Produkte und Aktionen von L'Oréal Professionnel Paris sowie aus dem Angebot von L'Oréal und deren weiteren Marken zu informieren. Um Dir individuell auf Deine Interessen zugeschnittene Informationen zukommen zu lassen, speichert L'Oréal auch die Daten zu Deinen Reaktionen auf die empfangenen Informationen und die weiteren Daten aus Deiner Nutzung der Webservices von L'Oréal Professionnel Paris und L'Oréal (insbesondere Daten zu Einkäufen und Gesamtumsatz, angesehenen und gekauften Warengruppen/Produkten, Produkten im Warenkorb und eingelöste Gutscheine sowie zu Deinen sonstigen Interaktionen im Rahmen der Webservices und Deinen Reaktionen auf unsere Kontaktaufnahmen und Angebote, inklusive besonderer Vorteils-Aktionen) und führt diese Daten mit Deinen Kontaktdaten innerhalb eines Interessenprofils zusammen. Diese Daten werden ausschließlich genutzt, um Dir Deinen Interessen entsprechende Angebote machen zu können. Um Dir auf den Plattformen unserer Werbepartner interessengerechte Informationen / Werbung anzeigen zu können, nutzen wir bestimmte Tools unserer Werbepartner (z.B. Facebook Custom Audience und Google Customer Match) und übermitteln die von Dir bei der Anmeldung angegebene E-Mail-Adresse oder Telefonnummer in verschlüsselter (pseudonymisierter) Form an diese. Hierdurch wird es möglich, Dich beim Besuch der Plattformen unserer Werbepartner als Nutzer der Webservices von L'Oréal zu erkennen, um Dir maßgeschneiderte Informationen / Werbung anzuzeigen. **Gefundener Text:** Die Einwilligung umfasst, dass Deine oben angegebene E-Mailadresse sowie ggf. weitere von Dir angegebene Kontaktdaten und sonstige Informationen von der L'Oréal Deutschland GmbH, Johannstraße 1, 40476 Düsseldorf (im Folgenden "L'Oréal"), gespeichert und genutzt werden, um Dich per E-Mail, Telefon, Telefax, SMS, Briefpost persönlich und relevant über interessante Leistungen, Produkte und Aktionen von L'Oréal Professionnel Paris sowie aus dem Angebot von L'Oréal und deren weiteren Marken zu inform... **Similarity:** 100.00%

- If no "More Details" button is found or no newsletter page is located:

Newsletter More Details	■	No More Details Button or No Newsletter found.