



Dissecting Privacy Perspectives of Websites Around the World: “Aceptar Todo, Alle Akzeptieren, Accept All...”

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USENIX Security Symposium, 2024

Sabancı
Universitesi



FIU



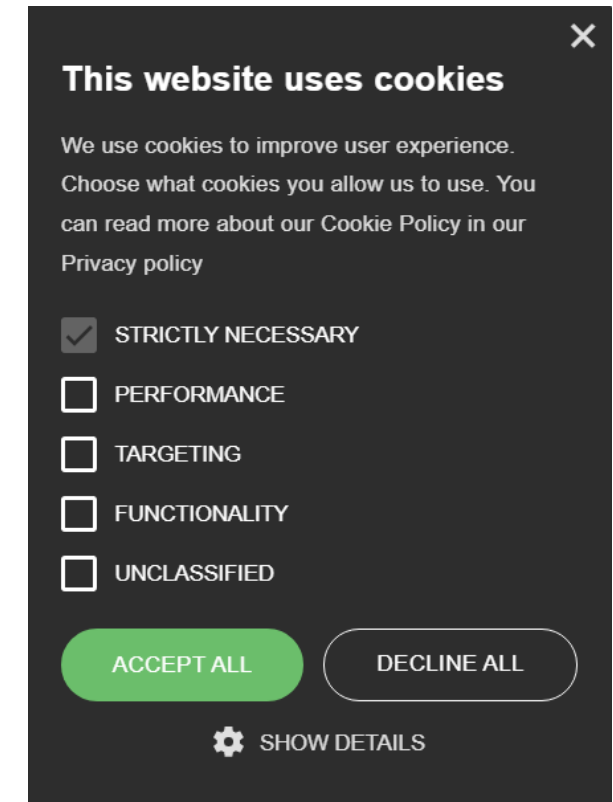
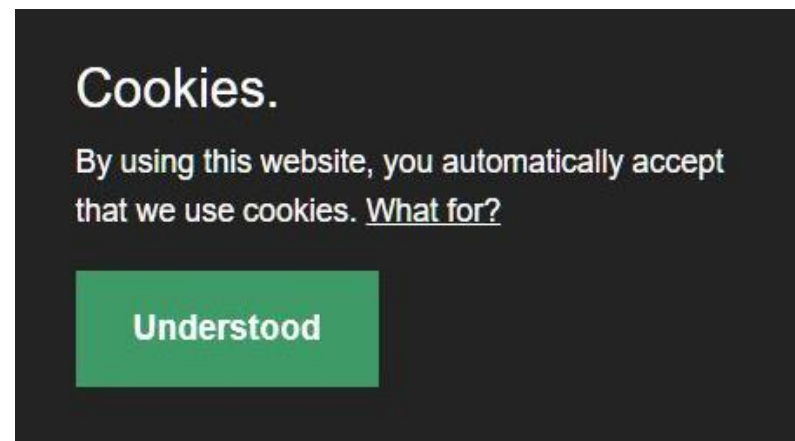
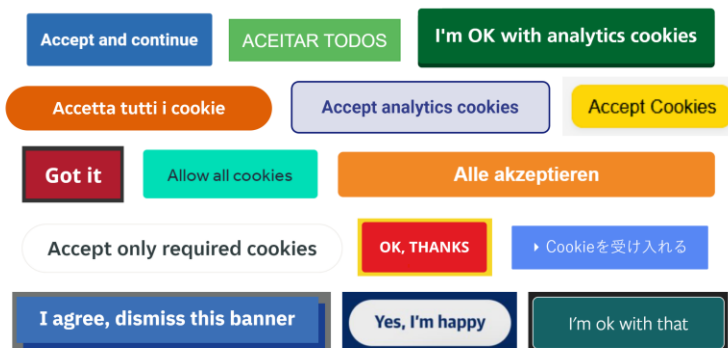
Cookie Consent Notices

Cookie collection for session continuity and functionality.

However, there's more to it than that: **advertising**.

Privacy Legislations: GDPR, LGPD, CPDP, APPI, KVKK...

Does this mean everyone is safe and treated the same?



Subject Countries

- Brazil
- Bulgaria
- Germany
- Italy
- Japan
- Russia
- Turkiye
- United Kingdom
- United States



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Common point: Consent must be obtained from users in a clear and unambiguous way.



КОМИСИЯ ЗА ЗАЩИТА
НА ЛИЧНИТЕ ДАННИ



Data Protection Act 2018

Our Goal...

... is to understand whether countries have the same privacy practices for external and internal users.

Research Objectives



Privacy Consents of Websites in Various Countries
Geographical Impact
Countries Adhering to Same Regulation

Research Objectives



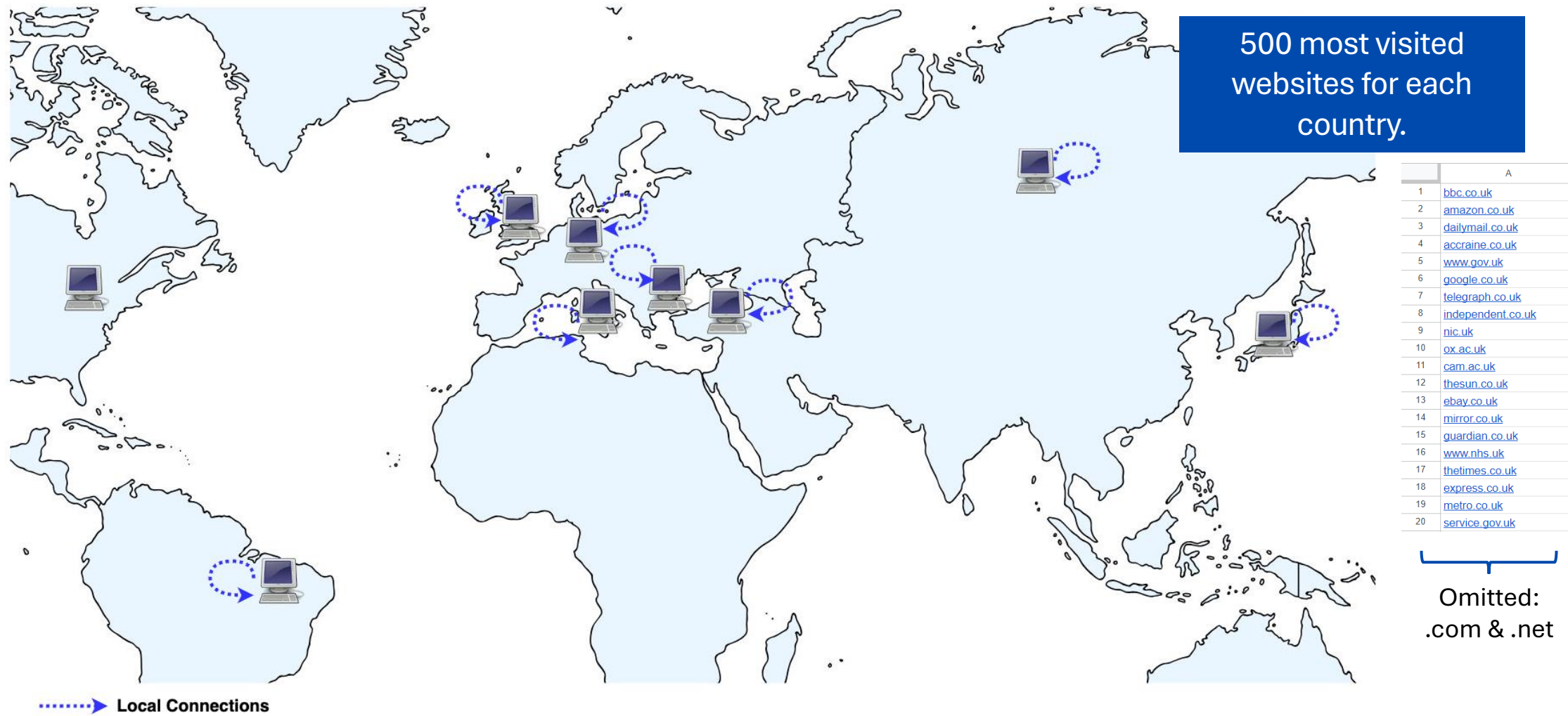
Privacy Consents of Websites in Various Countries
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Research Objectives

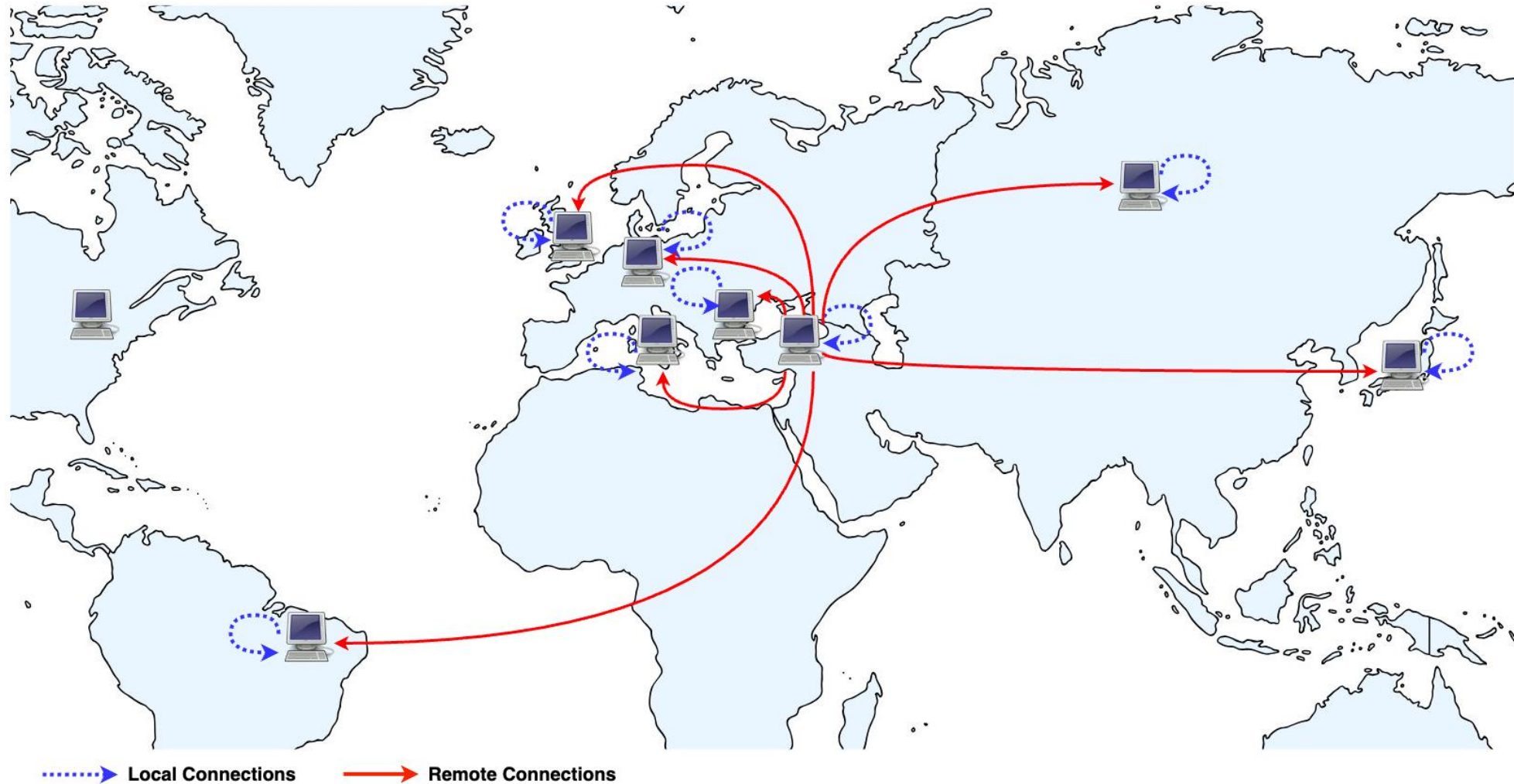


Privacy Consents of Websites in Various Countries
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Establishing Connections

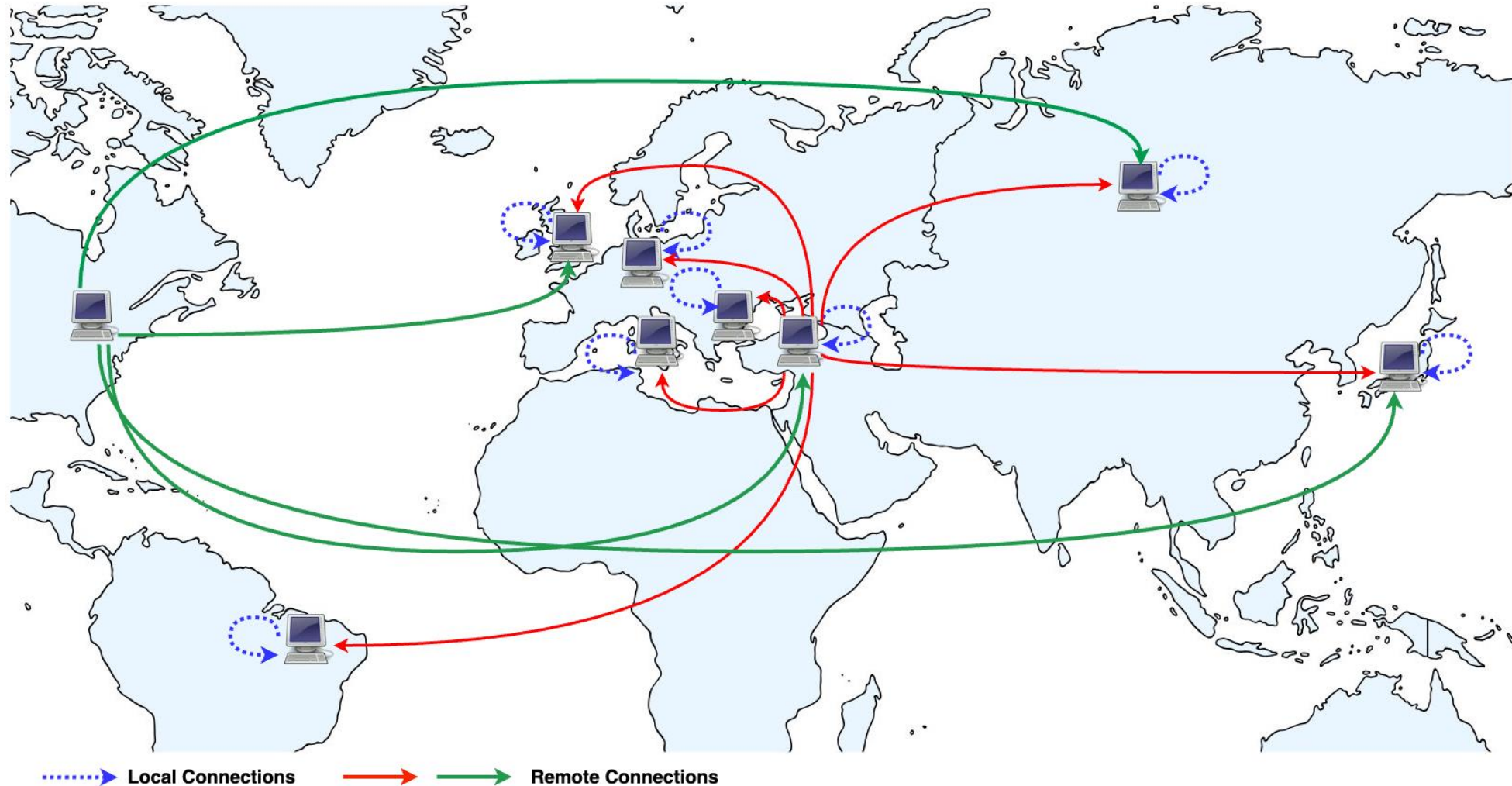


Establishing Connections



Local Connections Remote Connections

Establishing Connections



Local Connections



Remote Connections

Data Collection



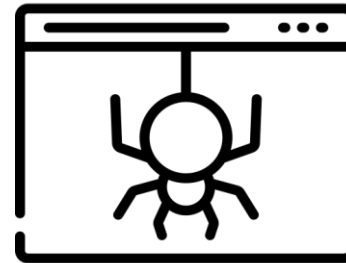
Client

1. Establishing a connection

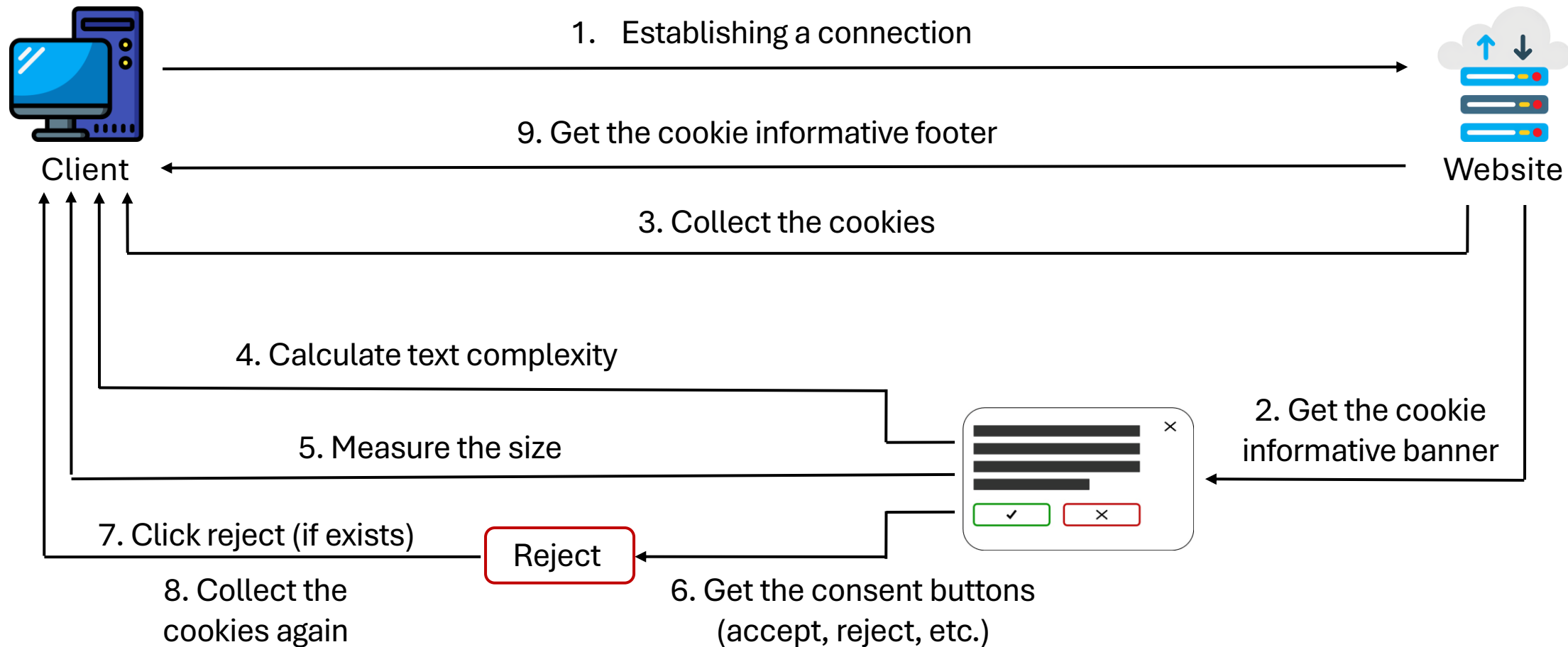


Website

We have automated the web crawling with Python and Selenium.



Data Collection



Getting Cookie Banners

Explore (New!) Saved Home Garden & DIY Electronics Refurbished Fashion Authenticity Guarantee Motors Collectables Sports & Leisure Health & Beauty Small Businesses

Build an elite collection
Choose your next adventure from thousands of finds.

[Start your journey](#)

Card games > Toys > Comic books >

We use cookies and other technologies that are essential to provide you our services and site functionality, as described in our [Cookie Notice](#). If you agree and click 'Accept all', we will also allow 23 [third-party companies](#), who we partner with, to store cookies on your device and use similar technologies to collect and use your personal data (e.g., IP address) for advertising personalisation, measurement and analytics, on and off our sites. You may decline consent by clicking 'Decline all' or make granular choices by clicking 'Customise my choices'. You may withdraw your consent at any time by visiting <https://www.ebay.co.uk/gdpr>

Data processing purposes: Store and/or access information on a device. Personalised advertising, advertising measurement, audience research and services development.

Customise my choices

Decline all

Accept all

1

```
banner_detection()  
paths = ["//*[contains(@class 'cookie')]", ...]  
driver.find_elements(By.XPATH, paths)
```

2

```
translate(banner_text)  
text_complexity(translated_text)
```

3

```
banner.find_elements(By.TAG_NAME, "button")  
accept_texts = ["accept", "allow", ...]  
reject_texts = ["decline", "reject", ...]  
depth_texts = ["settings", "customize", ...]
```

Banner Text Complexity

How complex are the texts on the banner? Are they easily comprehensible?

Gunning Fog Index (Gunning, 1952):

$$F = 0.4(W/S + (100 * CW/W))$$

W: total number of words,

CW: total number of complex words (with more than three syllables),

S: total number of words

You control your data

We and our partners use technologies, including cookies, to collect information about you for various purposes, including:

1. Functionality
2. Statistics
3. Marketing

By clicking 'Accept All' you consent to all these purposes. You can also choose to indicate what purposes you will consent to using the [Check boxes], then press 'Save Settings'. You can always withdraw your consent by [pressing the small icon in the lower left corner of the page].

You can read more about our use of cookies and other technologies, as well as our collection and processing of personal data by clicking on the link.

[About Cookies](#)

DECLINE ALL

ACCEPT ALL

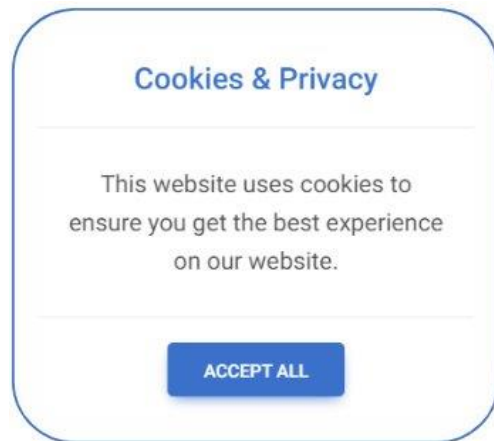
[SHOW DETAILS](#)

Strictly necessary	Functional	Statistical	Marketing
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

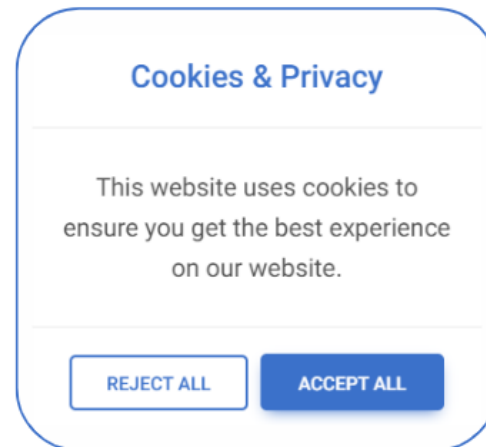
Depth of Rejection

Depth: In how many clicks does the user reach the reject option?

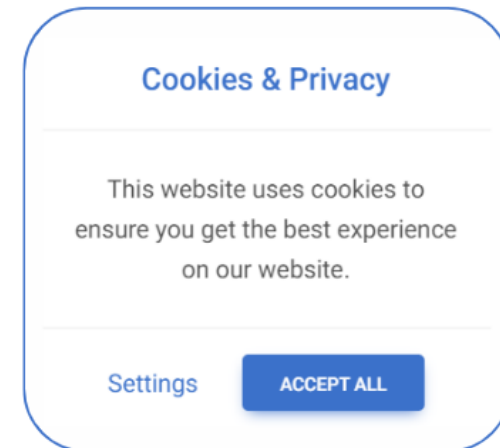
3 classification:



Banner with no depth
(0)



Banner with a reject option
(1)



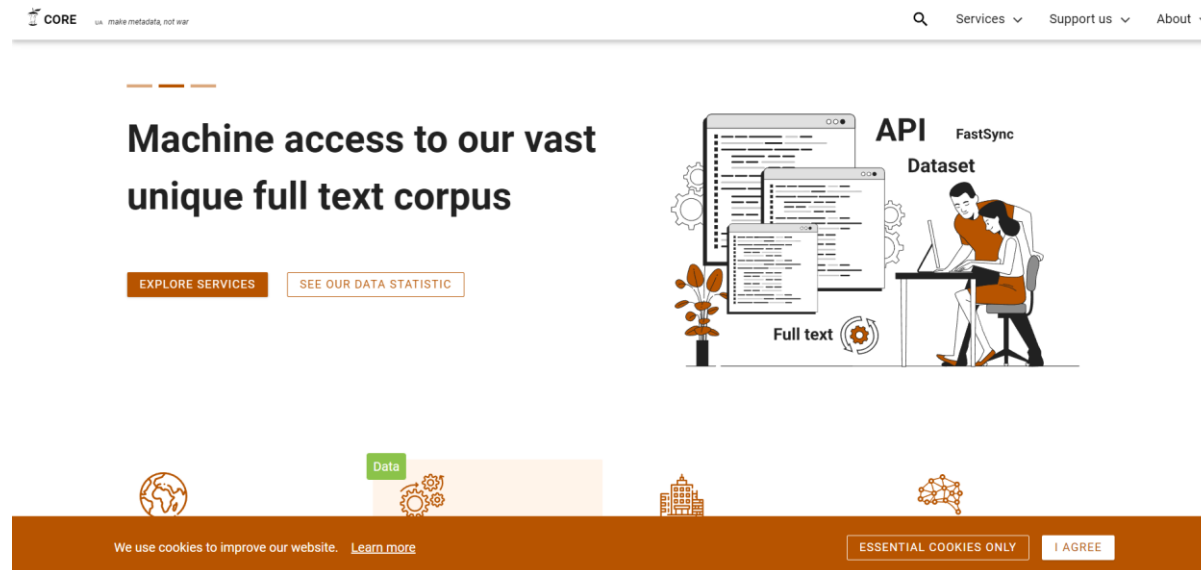
Banner with further options
(2+)

Banner Layout

Classification based on the ratio of the banner to the browser window.

S: Size of the cookie banner

$S < \frac{1}{4}$ of the view → Small

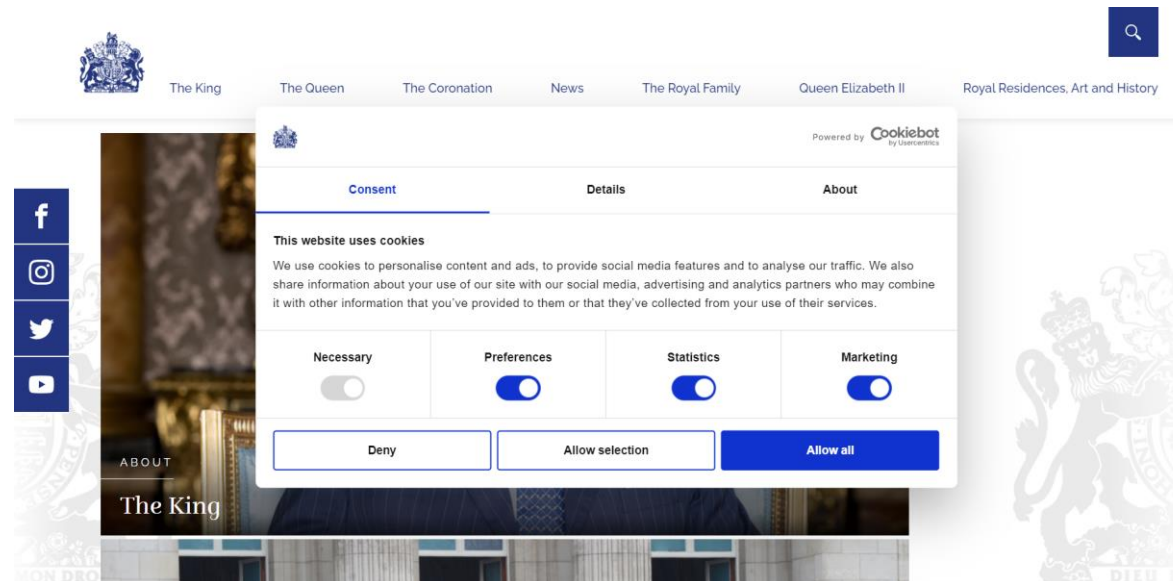


Banner Layout

Classification based on the ratio of the banner to the browser window.

S: Size of the cookie banner

$\frac{1}{4}$ of the view $< \mathbf{S} < \frac{1}{2}$ of the view → Medium

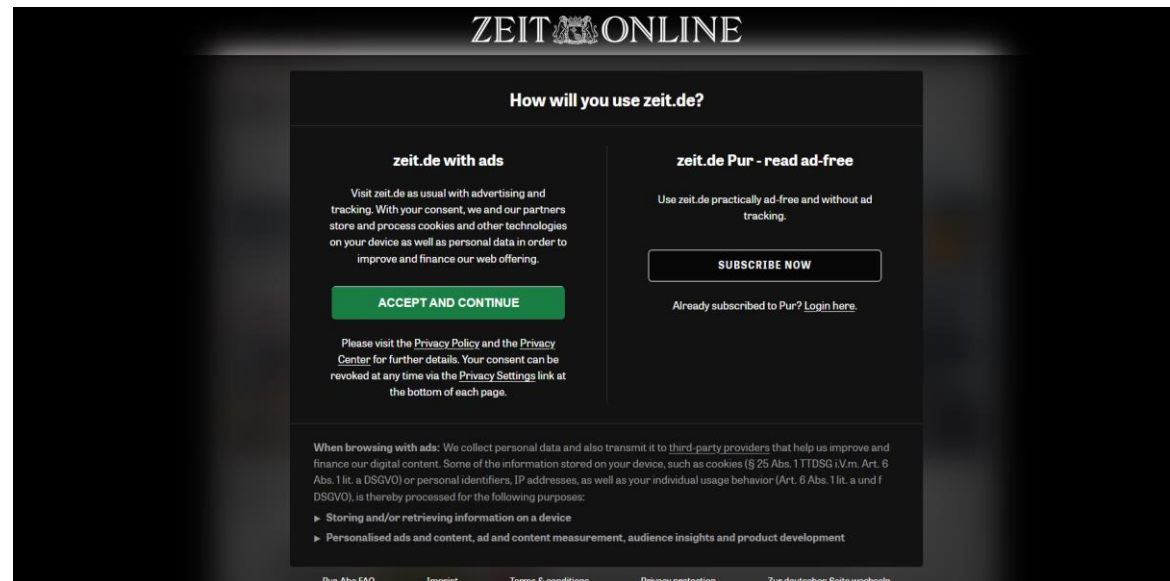


Banner Layout

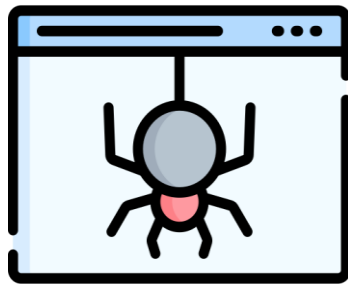
Classification based on the ratio of the banner to the browser window.

S: Size of the cookie banner

S > 1/2 of the view → Large



Results



10,000 automated
crawling process



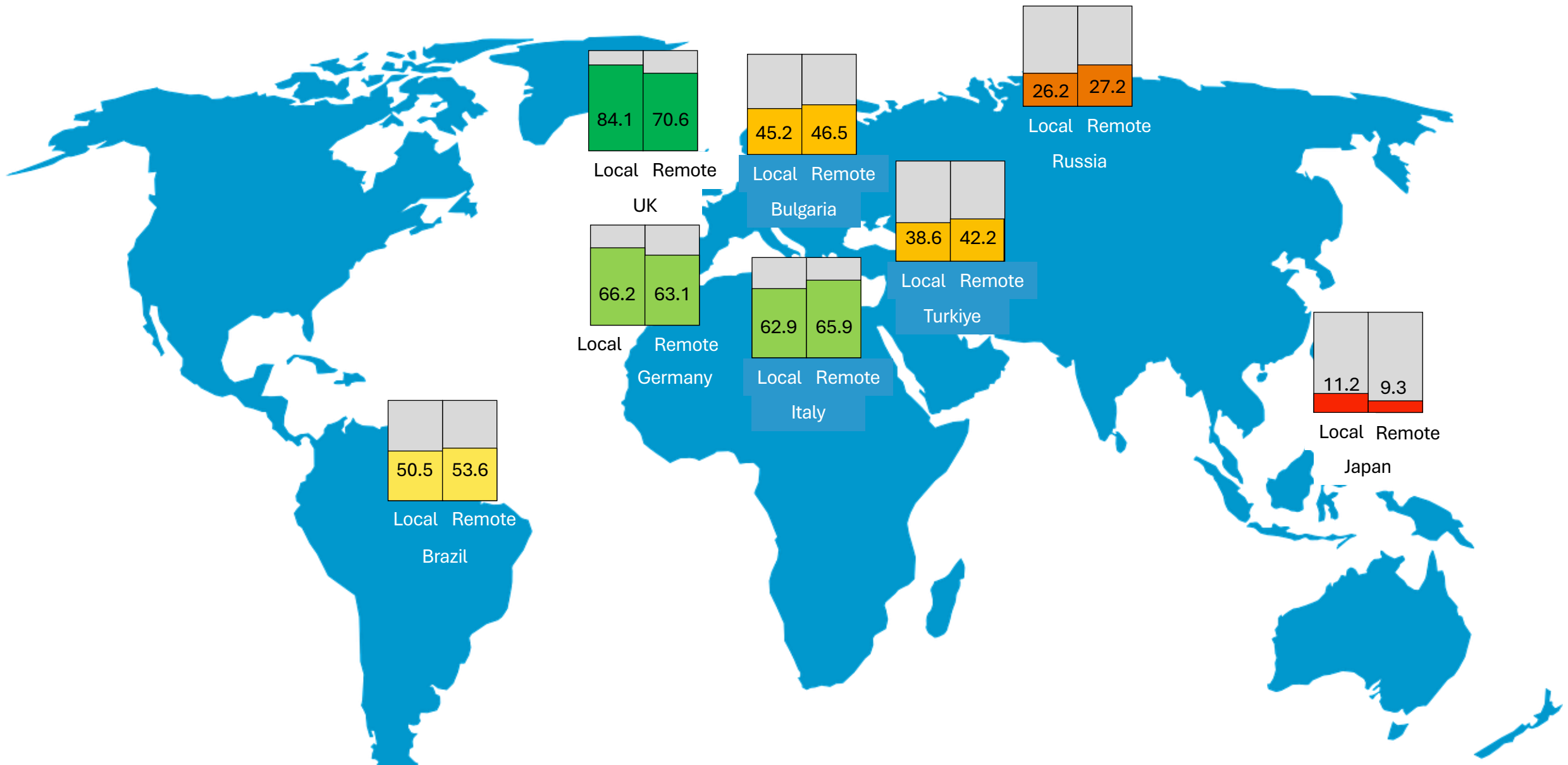
37% of websites have
cookie consent banners



95.5% success rate
2.1% false negative
2.4% false positive

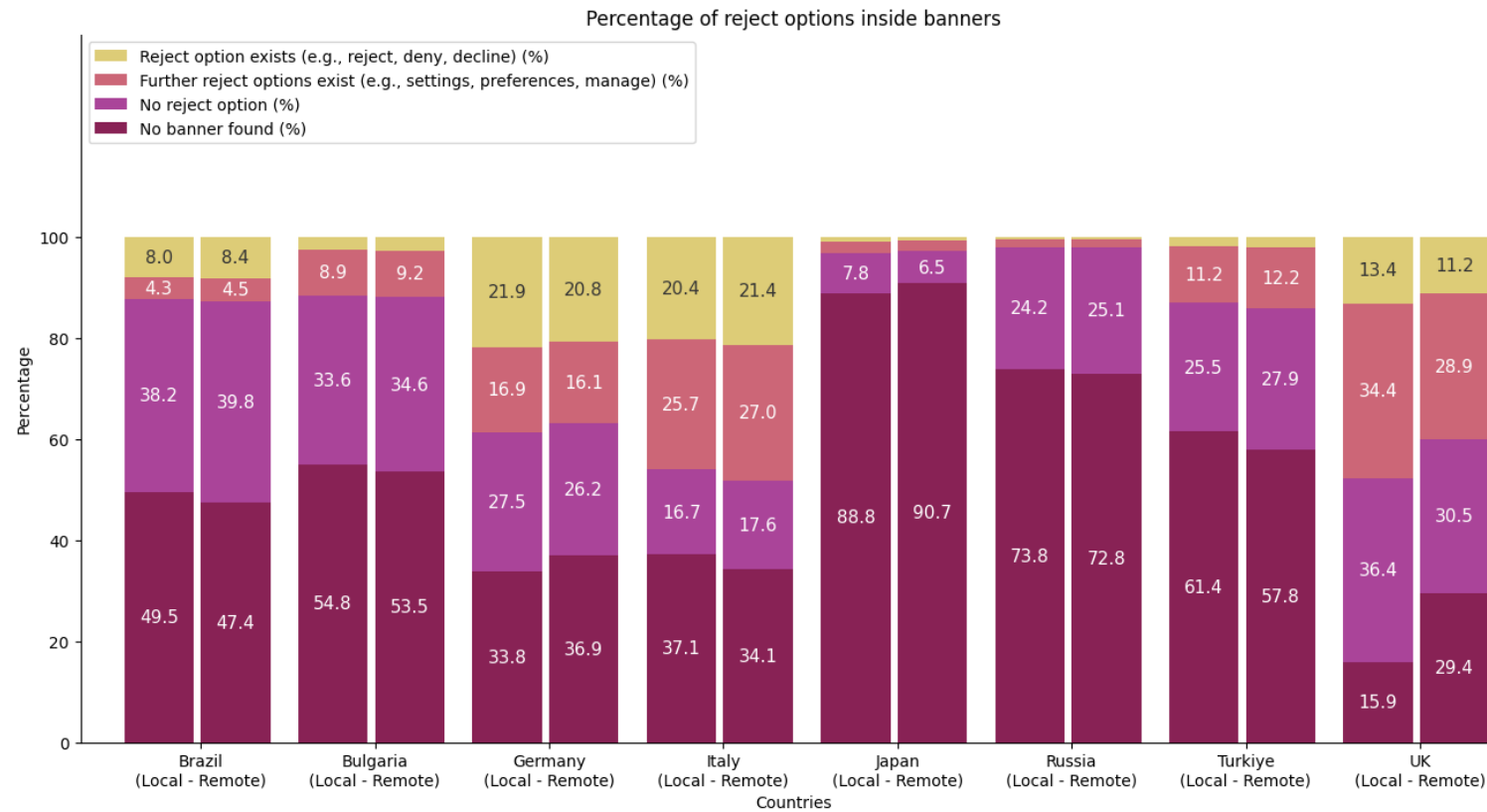
False results were manually inspected and verified.

Cookie Banner Existence (%)



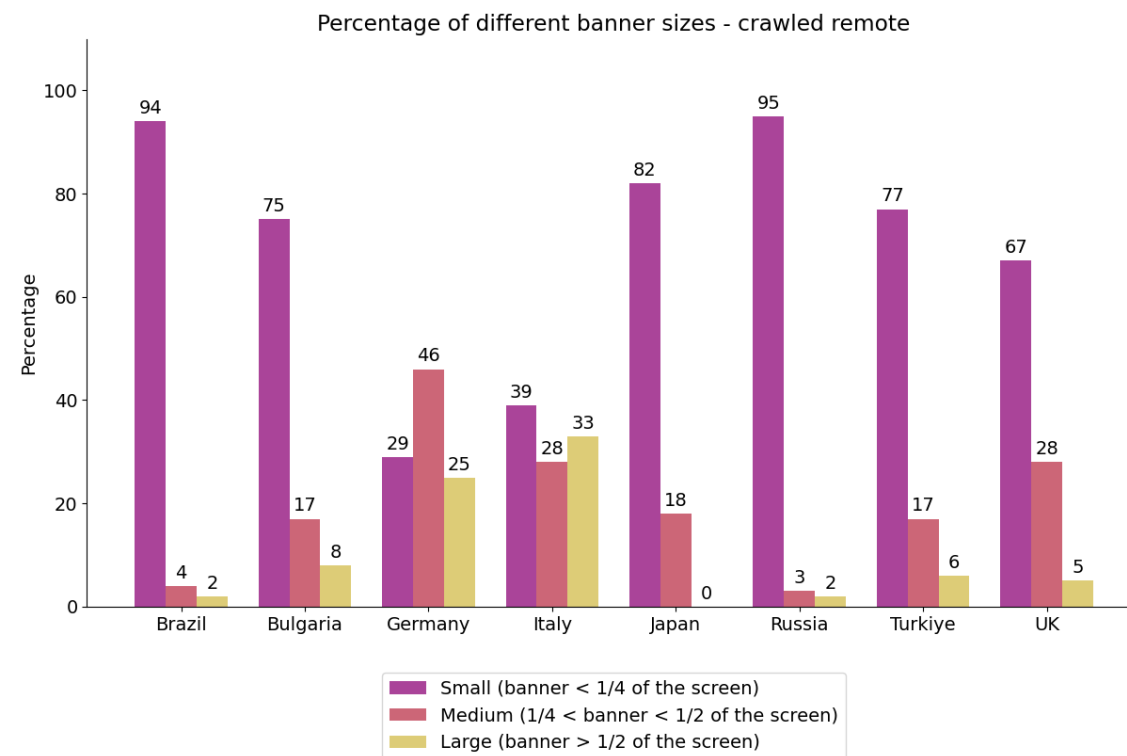
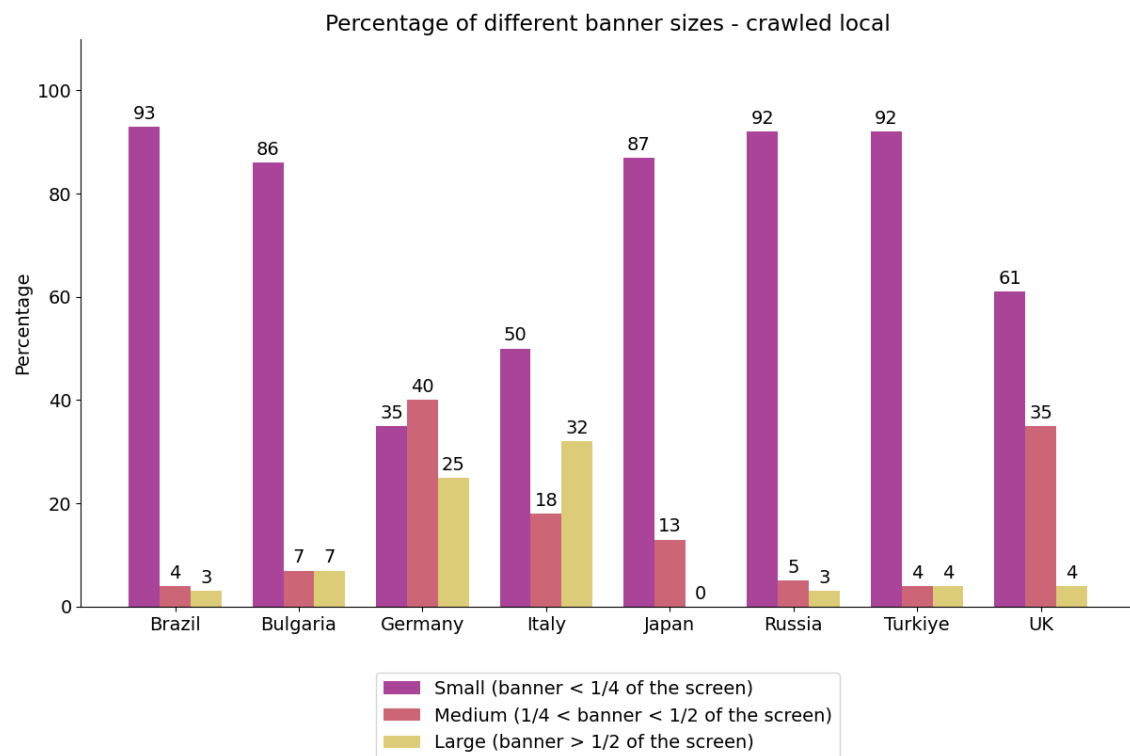
Depth Distribution

The ability to reject with **one** click is the lowest among all options.



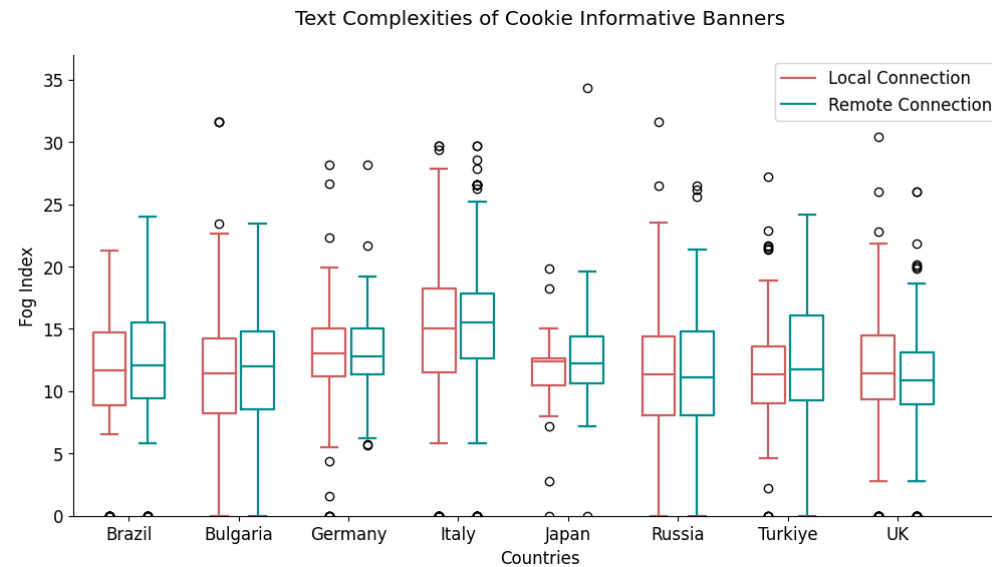
Different Banner Sizes

The most commonly used banner size is small, which covers less than $\frac{1}{4}$ of the screen.



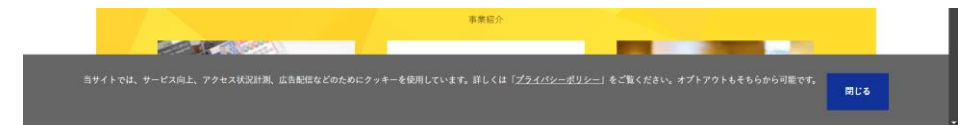
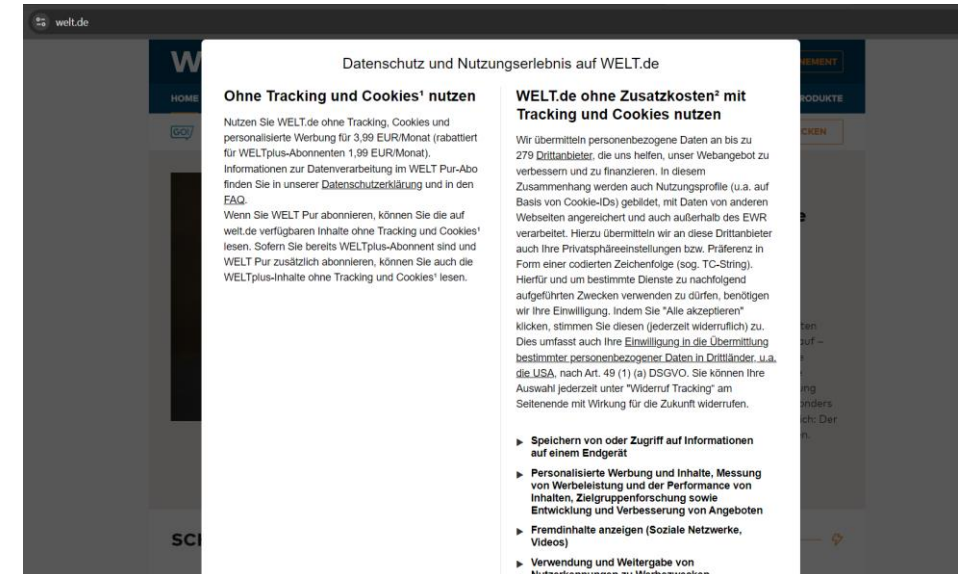
Text Structure of Banners

- Text complexity of Japan's cookie banners is more homogeneous than other countries'.
- Italy's cookie banners contains the most complex sentences.
- Content in Turkish websites' banners differs the most in terms of local vs. remote connection.



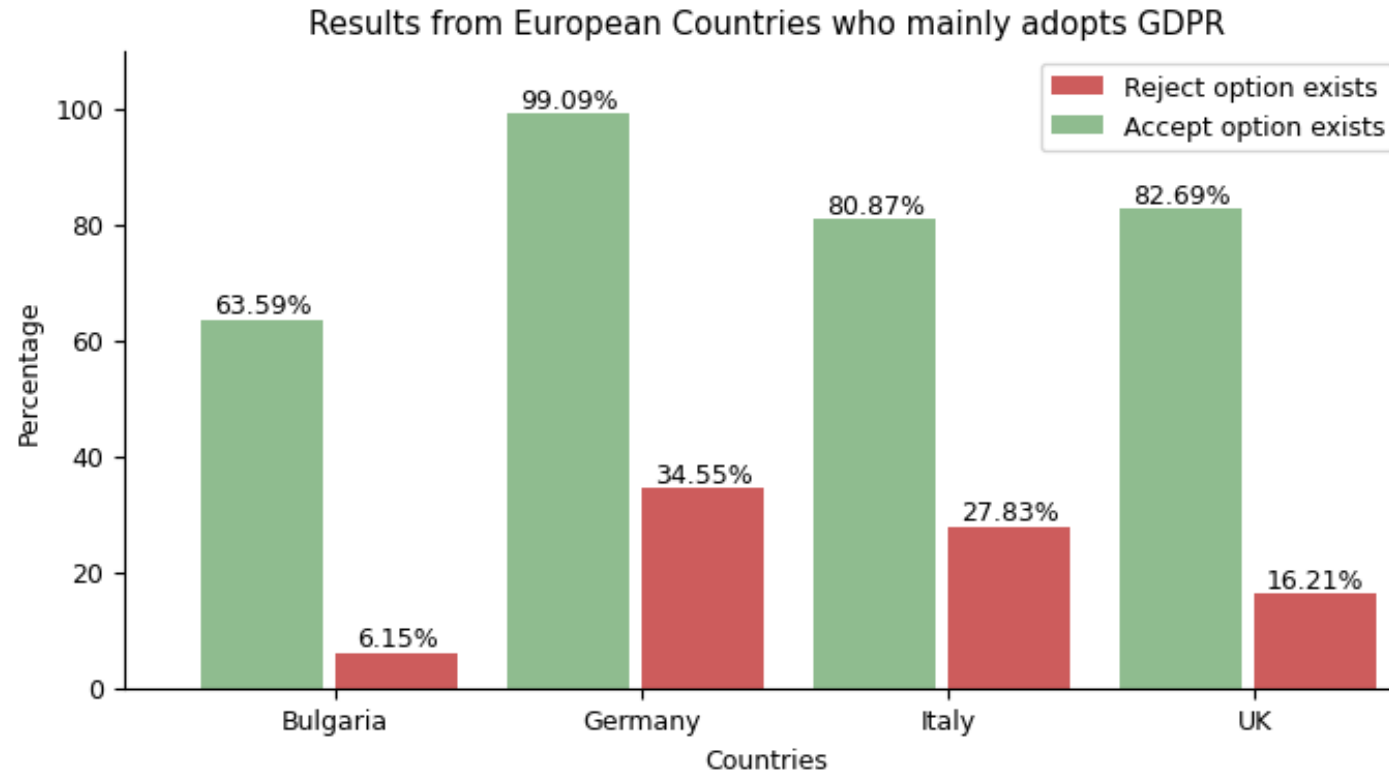
Geographical Impact

- Japan and Russia provide considerably less information about their cookie collection process.
- On the European side, an increase in these informative banners is marked, with 10-20% variation intervals.
- Neighbor countries which are in close touch with immigrations and trades, have no certain correlation when it comes to online privacy.



Countries Adhering to Same Regulations

There are differences in practice despite the same regulations (GDPR).



Takeaways

- Many countries are insufficient to display effective privacy notices with their cookie consents.
- Only 37% of crawled websites have a cookie consent banner.
- Furthermore, only 21.9% of these websites have one-click reject option provided to users.
- Small size banners are generally preferred.
- Presence of privacy policies in the footer → 60% (avg)



Thank You!

Any Questions?

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