Crumbl:An awareness enhancing tool for cookie collection

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Motivation

Available privacy plugins can be overwhelming and potentially misunderstood by beginners who are unaware of the logic and the limits of such plugins, leading to a false sense of protection.

We developed Crumbl, to offer a beginner-friendly browser extension to surface real-time cookie collection, to help raise privacy awareness in users.

Pilot study

We conducted primary pilots understanding how users with various privacy and security knowledge perceive Crumbl. Participants with fewer privacy knowledge appreciated the extension and reported increased awareness of cookie collection.

System infrastructure
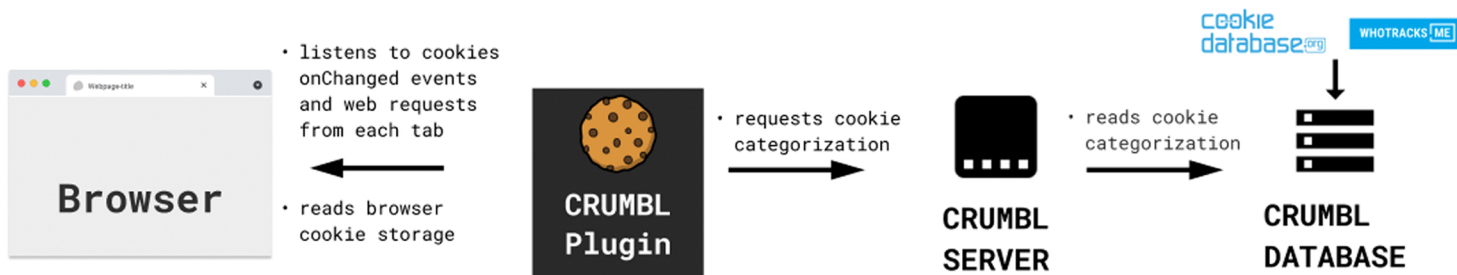
Crumbl reads web requests and browser cookie storage to learn about cookies on every tab. The extention queries the cookie categorization server when analyzing "flavors" of cookies for displaying the categorizations when it shows the popup.

System Interfaces
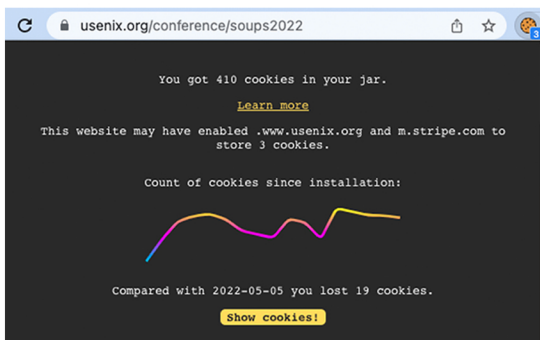
Overview page provides a sense of how full a browser cookie store is and what kind of cookies are being used in the current tab.

The plugin page shows (from top to bottom):
(1) total number of cookies on browser,
(2) link to view analytics of stored cookies,
(3) growth chart of cookies since installation,
(4) a breakdown of the types of cookies.
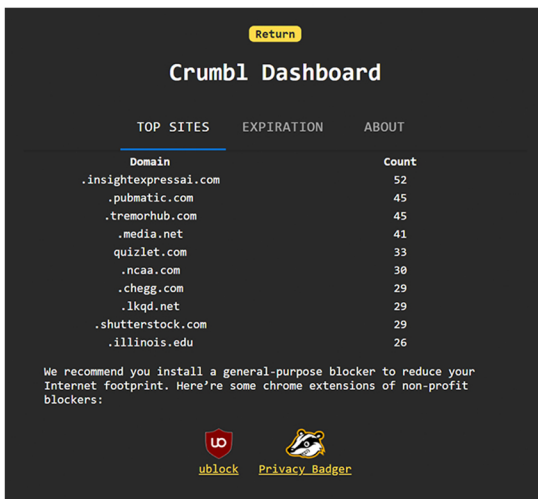
Top sites page shows the top domains that stores the most amount of cookies in a browser and summary of the categories of the 50 most recent cookies.
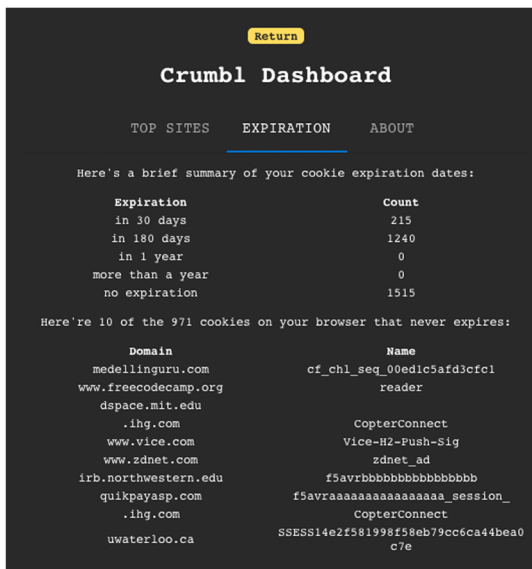
Expiration page shows the expiration status of current cookies categorized by expiration window to show "stickiness" of cookies.
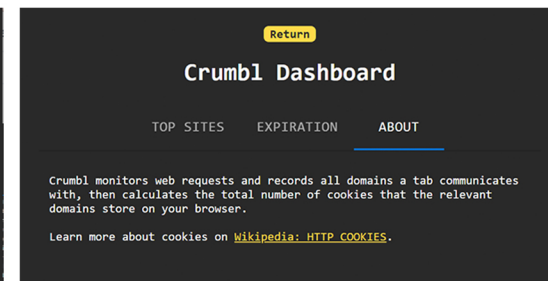
About page explains how Crumbl counts the number of cookies used per tab and provides a link to learn more about HTTP cookies.