Your goal is to assess the usability of your system.

1. [+5] Evaluate your system with at least 10 participants. Write and submit 0.5-1p of notes for each participant.

   Since there isn't a notable baseline to compare to, we decided to use the following matrix to evaluate our system.

   - All users will be given 2 tasks, and each task was timed independently.
     1. On weather.com, the plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation,
     2. Now go to a different website, use the software and remove the undesired cookies.
   - At the end of the task, we have conducted interviews with subjective questions
     - On a scale from 1-10, how usable is the system
     - On a scale from 1-10, how do you like the visualizations of the cookie
     - On a scale from 1-10, how did the system meet your expectations
     - On a scale from 1-10, how helpful are the explanations?

   Result:

Important: For all Evals the user was provided with a system that already had the Gemini Token added. They did not need to manage or add their own Gemini Token.

Participant 1: age 23

The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: the user is able to see all the cookies on a webpage in **5 seconds** which includes clicking on the expanding, scrolling

Total: 8 seconds

See explanations: it took the user about **15 seconds**, where the first **10 seconds** they were unsure of how to find explanations

Total: 15 seconds

Delete cookies: the user simply used the block all button on the UI. **3 seconds**
Then, the user went to analytics and demoved the cookies one by one, **15 seconds**

Total: 19 seconds

Now, go to a website, use the software, and remove the undesired cookies.

The user went to H&M, as soon as the page loads, the user clicked on block all third party cookies and individually blocked the remaining market cookies. The whole process took about **11 seconds**.

At the end of the task, we have conducted interviews with subjective questions

- On a scale from 1-10, how usable is the system: **9**

- On a scale from 1-10, how do you like the visualizations of the cookie?: **9**
- On a scale from 1-10, how did the system meet your expectations?: **8**
- On a scale from 1-10, how helpful are the explanations? **7**

Participant 2: age 24
The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: The user first tried to click on the tabs under quick summary, **13 seconds**; after realizing it did not work, the user scrolled down and clicked on the individual cookies
Total: **48 seconds**
See explanations: The user clicked on the cookie card straight up. **3 seconds**
Delete cookies: the user selected the cookies in the marketing tab and blocked them one by one,
Total: 32 seconds

Now, go to a website, use the software, and remove the undesired cookies.
The user went to ucla.edu, and as soon as the page loaded, the user clicked on block all third-party cookies, but there were no leftover market cookies. The whole process took about
Total: 8 seconds.

At the end of the task, we have conducted interviews with subjective questions
- On a scale from 1-10, how usable is the system: **9**
- On a scale from 1-10, how do you like the visualizations of the cookie?: **9**
- On a scale from 1-10, how did the system meet your expectations?: **8**
- On a scale from 1-10, how helpful are the explanations? **8**

Participant 3: age 18
The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: The user was very confused about the task as they did not know what it means to "visualize cookie". They first moved the cursor to the reload cookie button and did not click on it when they read the hover message, **9 seconds**. Then they tried to click on the bars in the summary block, **4 seconds**. and then the tabs under the bars **6 seconds**. Eventually, they clicked on the tabs and was able to find specific cookies. **13 seconds.**
Total: 33 seconds
See explanations: The user scrolled back up trying to find where they can find detail pages. **3 seconds**, then they went back down and clicked on the square toggle, **3 seconds.** Then they finally clicked on the individual cookie card, **2 seconds.** They took a short pause and clicked on the generate explanation button, **2 seconds.**
Total 13 seconds
Delete cookies: The user selected market cookies one by one and batch deleted them.

Total: 10 seconds

Now, go to a website, use the software, and remove the undesired cookies.
The user went to Wordle. As soon as the page loads, the user clicked on block all third-party cookies and individually blocked the remaining market cookies. The whole process took about **10 seconds.**

At the end of the task, we have conducted interviews with subjective questions
- ○ On a scale from 1-10, how usable is the system: **10**
- ○ On a scale from 1-10, how do you like the visualizations of the cookie?: **9.5**
- ○ On a scale from 1-10, how did the system meet your expectations?: **10**
- ○ On a scale from 1-10, how helpful are the explanations? **5**

Participant 4: age 57
The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: The user was rather slow in turns of everything, mouse moves, reading titles. They tried to read and click everything. They stopped on different bars in the summary block and read everything, **17 seconds**. and then the tabs under the bars **15 seconds**. Eventually, they clicked on the tabs and was able to find specific cookies. **8 seconds.**
Total: 43 seconds
See explanations: The user tried to click on the toggle a couple times **5 seconds**. Then they clicked on the individual cookie card, **4 seconds.** They read the specific info for a moment and and clicked on the generate explanation button, **7 seconds.**
Total 18 seconds
Delete cookies: The user closed the window and read about the 3rd party cookies for **9 seconds** and batch deleted them.
Total: 12 seconds

Now, go to a website, use the software, and remove the undesired cookies.
The user went to Amazon. When the page loads, the user clicked on block all third-party cookies. The whole process took about **8 seconds.**

At the end of the task, we have conducted interviews with subjective questions
- ○ On a scale from 1-10, how usable is the system: **10**
- ○ On a scale from 1-10, how do you like the visualizations of the cookie?: **10**
- ○ On a scale from 1-10, how did the system meet your expectations?: **9.5**
- ○ On a scale from 1-10, how helpful are the explanations? **8**

Participant 5: Nikhil (21/22 yo? also not sure about age, but student in our class)
The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: the user is able to see all the cookies on a webpage in **3 seconds.** The user only went through the summary though and did NOT scroll through every cookie / category of cookies.
Total: 3 seconds
See explanations: it took the user about **5 seconds**
Delete cookies: the user simply used the block all button on the UI. **3 seconds**
Total: 3 seconds

Now, go to a website, use the software, and remove the undesired cookies.
The user went to the Weather Channel site. As soon as the page loaded, the user clicked to block all third party cookies and proceeded to click on the trash can next to the marketing category, removing all marketing cookies, but in the process was distracted with the explanations that were generated. The whole process took about **30 seconds**, of which around **4 seconds** was actually used to remove the undesired cookies.

At the end of the task, we have conducted interviews with subjective questions
- On a scale from 1-10, how usable is the system: **8.5**
  - Generally usable. However, few suggestions from the user - one about the block list not showing the functionality of the cookie which was removed, which would allow the user to better determine whether or not to re-enable the cookie. Additionally, another comment about the block list being ordered with analytics / functional first would be helpful.
- On a scale from 1-10, how do you like the visualizations of the cookie?: **9**
  - The user mentioned that the visualizations were generally good, and the explanations were useful.
- On a scale from 1-10, how did the system meet your expectations?: **9.5**
- On a scale from 1-10, how helpful are the explanations? **8**
  - The user mentioned that it would be nice if the explanation was in a little more certain terms, but that the explanations were generally useful, to the point, and explained what the user was supposed to do.

Participant 6: Sruthi (uhhhh… not sure about age but student in our class)
The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: the user is able to see all the cookies on a webpage in **55 seconds.** The user scrolled through every cookie in the plugin.
Total: 55 seconds

See explanations: User did not find this on their own 🙁
Delete cookies: the user simply used the block all button on the UI. **3 seconds**
Total: 3 seconds

Now, go to a website, use the software, and remove the undesired cookies.
The user went to the Bombay Times site. The user scrolled through the cookies, then started selecting cookies to block one by one. The whole process took about **55 seconds**.

At the end of the task, we have conducted interviews with subjective questions
- ○ On a scale from 1-10, how usable is the system: **8**
  - ■ Generally usable. However, few suggestions from the user - an indication that you can click the cookie to get an explanation. (signifier needed 😛)
- ○ On a scale from 1-10, how do you like the visualizations of the cookie?: **9**
  - ■ The user mentioned that the visualizations were generally good.
- ○ On a scale from 1-10, how did the system meet your expectations?: **9**
- ○ On a scale from 1-10, how helpful are the explanations? **7**
  - ■ The user mentioned that the explanations were too long for their taste. They wanted to have very brief explanations, short and to the point.

Participant 7: Sophia (outside of class, age 19)

The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: the user is able to see all the cookies on a webpage in **70 seconds.** The user scrolled through every cookie in the plugin. However, this user was using a lower-end computer and a large part of this time was spent waiting for the page to load and respond, along with our cookie extension.
Total: 70 seconds
See explanations: The user was able to click into the explanation tab within **2 seconds**. However, it should be noted that this might have been an accident.
Total: 2 seconds

Delete cookies: the user clicked block on the cookies they wanted, taking about 1 second to select each of the 5 cookies they blocked. **Total: 5 seconds**
Now, go to a website, use the software, and remove the undesired cookies.
The user went to Instagram, then started selecting cookies to block one by one. The entire process took them **28 seconds**, as they were taking some time to decide whether or not to block certain cookies.

At the end of the task, we have conducted interviews with subjective questions

- On a scale from 1-10, how usable is the system: **8**
  - Generally usable. They liked how it looks, but did not see the trash can icon to delete all cookies of a certain type. They thought this was confusing, and would appreciate a select all button for each category in addition to the trash can icon. However, on loading weather.com, the user's computer was freezing, so it seems that sites with a lot of cookies tend to hurt the performance of the extension (and this was not seen on our computers, but our team's computers are not lower-end computers).
- On a scale from 1-10, how do you like the visualizations of the cookie?: **10**
- On a scale from 1-10, how did the system meet your expectations?: **10**
- On a scale from 1-10, how helpful are the explanations? **10**
  - The user mentioned that the explanations were just right in terms of length and scope.

Participant 8: age 22

The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: The user immediately scrolled down to look at the cookie list, bypassing the summary section. They clicked on the accordion tabs to see the different cookie types, spending about 4 seconds on each tab to review the contents. Some sections were quite long so they would scroll back to the top to close the section.

Total: 12 seconds

See explanations: The user clicked a cookie card in the marketing section. It's unsure if they knew the card was clickable or if they did it by accident. They glance at the cookie details for a bit, before clicking "Explain Cookie Details". They spent approximately 7 seconds reading the explanation before moving on to click another cookie card.

Total: 9 seconds

Delete cookies: The user first tried using the individual delete buttons for each cookie, taking 8 seconds to delete three cookies. They then scroll around the page (seemingly to find an easier way to delete), then they hovered over the trash icon on the summary component at the top, and once they discovered the batch delete function for a category, they used it to remove all the cookies in the "Functional" and "Analytics" category. They then clicked the "Block 107 Cookies" button on the third party alert, and blocked those cookies. They then clicked the "Manage Blocked Cookies" button. They didn't unblock any cookies as the task didn't require them too and they went back to the main page.

Total: 18 seconds

Now, go to a website, use the software, and remove the undesired cookies:

The user went to espn.com and immediately used the "block all third party cookies" button as soon as the page loaded. They then methodically went through each remaining marketing cookie and blocked them individually that were not third parties. They then bulk blocked the analytics and functional cookies. The whole process took about 20 seconds.

At the end of the task, we conducted interviews with subjective questions:

1. On a scale from 1-10, how usable is the system: 8
2. On a scale from 1-10, how do you like the visualizations of the cookie?: 9
3. On a scale from 1-10, how did the system meet your expectations?: 8
4. On a scale from 1-10, how helpful are the explanations? 9

Participant 9: age 21

The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: The user quickly scrolled through the interface but initially seemed unsure where to start. After 5 seconds, they clicked on the summary bars expecting them to be interactive, but they realized they were hoverable and then hovered on all the bars getting the breakdown of the number of cookies. They then hovered over the trash icon but they didn't click it just yet, but they did read the description. They then scrolled down to the accordion cookie list (3 seconds), and then spent around 7 seconds exploring the different tabs.

Total: 15 seconds

See explanations: The user confidently clicked on a cookie card in the marketing section (2 seconds) and then paused briefly to look at the cookie information. They then clicked the "Explain Cookie Details" and waited for the LLM response to be generated. (3 seconds). They skimmed through the explanation text quickly, before clicking on a different cookie in a different section. They stated that they liked how the explanation took into context the current website and cookie details. After closing the popup they hovered on the tags on the top right of the card (Third Party, Secure, HTTP Only) and read the descriptions for each.

Total: 18 seconds

Delete cookies: The user already on the individual cookie list, started clicking the individual "Block" buttons to block cookies in the "Marketing" section (8 seconds). After blocking several, they scrolled to the top and clicked the trash can icon for the Analytics section (2 seconds). Then they hovered over the favicons for the "Third Party Cookie Alert" before clicking the "Block 115 Cookies" (7 seconds).

Total: 17 seconds

Now, go to a website, use the software, and remove the undesired cookies:

The user went to latimes.com and immediately opened the plugin when the page loaded. Since the site hadn't added all the cookies yet, the user refreshed the cookies a few times. Then, without hesitation, they click the block all third-party cookies button (2 seconds). They then went to the "Manage Block List" page and glanced at the blocked cookies (6 seconds). The whole process took about 8 seconds.

At the end of the task, we conducted interviews with subjective questions:

1. On a scale from 1-10, how usable is the system: 9
2. On a scale from 1-10, how do you like the visualizations of the cookie?: 9
3. On a scale from 1-10, how did the system meet your expectations?: 9
4. On a scale from 1-10, how helpful are the explanations? 10

Participant 10: age 29

The plugin has 3 features: visualize cookies, see explanations, delete cookies. The user will need to figure out how to do each task in a timed observation

Visualize cookies: The user immediately understood the interface and quickly navigated to the cookie list. They spent 5 seconds looking at the summary view, hovering on the individual sections before moving on to the detailed list. They spent about 5 seconds exploring different cookie categories by clicking on the accordion headers.

Total: 10 seconds

See explanations: The user clicked on a cookie card first without any hesitation (2 seconds). The user then clicked on the and then clicked on the "Explain Cookie Details" and waited for the LLM response to be generated (1 second). They read through the explanation. Then they tried hovering with the other elements on the individual cookie popup before closing the popup (3 seconds). Then they quickly opened and closed another cookie (1 second).

Total: 7 seconds

Delete cookies: The user first played around with individual cookie deletion (5 seconds), then they hit the checkbox and noticed the "Block Selected" button became pressable. They then selected a few more cookies, then they hit "Block Selected" (8 seconds). They then scrolled up to the "Third Party Cookie Alert" and they quickly pressed the "Block 107 cookies" button and blocked the cookies (2 seconds)

Total: 15 seconds

Now, go to a website, use the software, and remove the undesired cookies:

The user went to nytimes.com and as soon as the page loaded, they clicked on the plugin. They immediately used the block all third-party cookies button and then quickly scanned through the remaining cookies, blocking all marketing cookies in quickly. The whole process took about 5 seconds.

At the end of the task, we conducted interviews with subjective questions:

1. On a scale from 1-10, how usable is the system: 9
2. On a scale from 1-10, how do you like the visualizations of the cookie?: 9
3. On a scale from 1-10, how did the system meet your expectations?: 10
4. On a scale from 1-10, how helpful are the explanations? 8

After your evaluation [+4]

1. [+4] Analyze your data and write up your key findings. The findings should be about 0.5-1p for each motivating question and any other interesting findings.
   - For any qualitative data where you cannot easily remember the details of the results, a thematic analysis is required. When you conduct a thematic analysis, include your codebook.
   - For any quantitative data, submit a script for analysis + your data. Recommendation: Create a notebook for your analysis. Someone should be able to run your notebook to reproduce your results.

Our original motivation questions:
- How convenient is it for users to understand what data is being collected from them on a particular website?
- Is the extension useful for users to be able to automatically choose cookies to allow/block for a given page?

Please refer to analysis.ipynb for the statistics. Generally, there was a large variation in the amount of time people took to complete tasks (view cookies, view explanations, delete cookies, and visit a site and delete all undesired cookies). Obviously, this is a very small sample size (10), so the data is quite noisy. While for the first three (view cookies, explanations, delete cookies), the times are pretty uniformly distributed, it seems that the task to actually go and delete all of the cookies had the majority of users completing the task in 11 seconds or under, with a few outliers (and this can be seen from the difference between the mean - 18.5 seconds - vs. the median - 10.5 seconds).

Generally, the scores we received from users were quite good. For usability, visualizations, and meeting the system expectations, the mean was around 9 (out of 10 possible). For explanations, the mean was 7.7, with a large standard deviation. This is likely due to varying user preferences: some users found the explanations just right, others thought they were too long.

Qualitative data:

Generally, users found the cookie extension to be easy to use, and found the UI to be appealing and simple. The visualizations helped users understand what cookies are present on a site, and users found it easy to manage the cookies that were present. A few users had trouble finding the cookie explanations: this is likely due to the lack of a signifier (mouse click symbol? link? etc.) that the individual cookies were clickable. There were differing opinions about the explanations: some thought they were too long, and others thought they were just right. There was also a suggestion that we should include a small blurb about the cookie's function in the block list, so that users can be informed about choosing cookies to unblock from a site. But overall, this answers our first motivating question: users mostly found it easy and convenient to visualize the cookies on a given site, and the display badge with the number of cookies also served as a signifier to show the user when there were a lot of cookies present.

Most users found it easy to remove the undesired cookies, and this is shown with the median time it took people to do this. Users generally appreciated the trash can (with one exception) and generally appreciated the blinking red popup about third-party tracking cookies, and appreciated that the cookies they chose to block were saved locally, so that when they re-visited the site, the cookies they chose to block earlier continued to be blocked. However, there was one wish from one user that they would like to see a short summary of the cookie's purpose in the "Manage Block List" page: this would make it easier for them to make an informed decision on which cookies to unblock on a certain page. Understanding what feature a cookie is related to and how it might impact their browsing experience would be useful for users. Additionally, there was a suggestion to move Analytics and Functional cookies to the top of the block list, and put marketing at the bottom: most users would not choose to unblock marketing cookies (as those cookies just collect your data), so having those at the bottom instead of at the top would make sense. Functional and analytics cookies are more likely to be re-enabled, so putting at the top makes it so that the user doesn't have to scroll through the entire list of marketing cookies which are automatically blocked. This answers our second motivating question: users generally found the extension useful to manage which cookies are being blocked on given sites.

Group Reflection [+1]

1. What is one thing that went well in your evaluation?
   The user really likes the simplicity and the directness the software is able to offer. Most of the users were able to navigate the systems with some minor issues. They all agreed that the software is really easy to use and did not have issues navigating the system.
2. What is one thing that you wish you could have done differently?
   We wish we could had more time and rounds to improve the software. We received some feedback and gathered some thoughts as we conducted the evaluation.
3. How, if at all, did your participants represent the personas you intended to design for?
   Yes, the participants came from a wide range of technical backgrounds, from retired mom and techy freshmen.
4. How do you think this impacted your results?
   The evaluation generally meets our goal once the participants is able to familiarize themselves with the software rather quickly(in one go). And when they

were assigned a new task, they were able to perform them in relative shorter time.

5. Based on the above, what does this say about the potential applicability of your system?

   We believe that the system is pretty applicable to the use case we identified through our user research. Users were able to get a visualization of the cookies present on a page and tracking their data. Users were also able to easily block cookies they didn't want to see.

6. What new questions do you have based on your evaluation?

   How can we apply signifiers and some design philosophy to aid users to understand the system faster?

   We mostly had users test on our own computers. How confusing would it be for a user to actually enter in their Gemini API key, for someone with little tech background? Can we figure out a way to store this key securely so that a user does not have to enter in their own API key?

Did you use a generative AI tool for this assignment? If so, which tool(s) and how?
How much time did you spend on this assignment as a group? Individually?
No AI is used
Beide: 2 hours in conducting the evaluation and 2 hours on the write-up
Joseph: 1 hour on evaluation, 2 hours on write-up + data analysis
Kalyan: 1 hour on evaluation, 1 hour on write-up