

Human Computer Interaction: Individual Project

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1 INTRODUCTION

TASK: Viewing one's browsing history of product pages in the Amazon app.

The Amazon mobile app does not provide an intuitive or comprehensive way for users to review their product browsing history. Users often explore dozens of products before deciding what to buy, but the Amazon app provides only limited ways to retrace that exploration. While the app includes features such as "Recently Viewed Items" and "Wish lists," these tools offer only partial solutions, they rely on manual user input or display a limited, transient list of items. This gap makes it difficult for users to revisit or compare previously viewed products, disrupting the natural decision-making process in online shopping. The goal of this project is to analyze the current interface, identify usability issues through needfinding and heuristic evaluation, and design an improved browsing history feature that supports efficient product rediscovery and informed purchase decisions.

My personal frustration with Amazon's interface inspired this project. I struggled to find products I had browsed but wasn't ready to purchase immediately. Despite being a frequent Amazon user, I was unaware that a "Browser History" feature even existed. Through a Google search at the project's start, I discovered that this functionality was deeply buried within the Account settings, far from intuitive. I had subconsciously developed my own workaround by adding items to my cart and then moving them to 'Save for Later', simply to track them for later consideration. This realization suggested a significant usability gap, the interface is failing to meet user needs efficiently. There is an opportunity to analyze and improve this experience.

By improving how browsing history is visualized and managed, we can support users' memory, reduce cognitive load, creating a more intuitive product discovery journey and enhance trust and satisfaction in the shopping process.

2 NEEDFINDING PLAN

The needfinding plan for this project comprises of two activities:

- **User Survey:** An online survey that aims to gather data on user habits, frustrations, and preferences when revisiting products they have previously explored in the Amazon mobile app.
- **Heuristic Evaluation:** A heuristic evaluation of Amazon's current interface for browsing history and related interfaces will be performed to identify design inconsistencies and usability issues based on established usability heuristics.

2.1 User Survey

Participants : 25 Amazon App users will complete an online survey. Participants will include classmates and friends who regularly use the App.

Recruitment: Participants will be recruited from current class fellows and friends. Class mates will be reached out through Ed Discussions. Those who complete the survey will receive participation credit and I will offer to fill out their surveys in return. Friends will be contacted via direct outreach.

Procedure: Participants will complete a 5–10 minute online survey exploring how they track or revisit previously viewed products, their awareness of the “Browser History” feature, and desired improvements. Sample Questions:

- How often do you use Amazon's “Recently Viewed Items” feature?
- What best describes your experience with Amazon's “Recently Viewed” or “Browsing History” feature?
- What frustrates you most when trying to find products you have previously viewed?

Full survey questions can be found at *Appendix 14.1: Needfinding Survey Questions*.

Data Collected via survey responses (quantitative and qualitative) will reveal patterns in how users currently manage product revisits, what tools they find helpful, and where their experiences break down.

2.2 Heuristic Evaluation

A heuristic evaluation of the Amazon mobile app's "Browsing History" will be conducted using three of Nielsen's usability heuristics:

- **Visibility of System Status:** How clearly the app indicates where or how browsing history is stored. Does the app clearly show that it is tracking viewed items? Is it obvious where users can find their browsing history? Are feedback cues (e.g., loading, saving) visible when interacting with “Recently Viewed” or “Lists”?

- **Recognition Rather than Recall:** Whether users can recognize previously viewed items without having to remember product names or searches. Do users have to remember where they saw an item, or can they recognize it from visual cues (images, categories, timestamps)? Is history easily discoverable without remembering navigation paths?
- **User control and freedom:** Whether users can manage or delete their browsing history easily. Can users easily remove, clear, or pause browsing history? Do users have control over what's saved automatically versus manually added (e.g., Wishlist items)?

3 NEEDFINDING RESULTS

3.1 Survey Results

The online survey was shared with class fellow and friends on Wednesday 8/10/2025 and received all 25 required responses within two days and provided a solid data set for analysis. Full survey results in *Appendix 14.2: Needfinding Survey Results*.

3.1.1 Key Findings Summary

Based on this needs assessment survey, the following insights informed the prototype design:

- **High Feature Demand:** 88% of users want the ability to delete/hide items from browsing history, indicating strong privacy concerns
- **Current Feature Awareness:** 60% use "Recently Viewed" occasionally but find it only somewhat helpful; 16% were unaware the feature existed
- **Primary Pain Points:** Forgetting to add items to cart (64%), incomplete history in "Recently Viewed" (44%), and having to search again (44%)
- **Most Desired Features:** Consolidated view (80%), search/filter capabilities (80%), visual thumbnails (64%), and privacy controls (52%)
- **Moderate Satisfaction:** Mean satisfaction score of 3.40/5.00 indicates room for significant improvement

Survey shows that participants use the Amazon app frequently, often several times a week. They also view multiple products before making a purchase decision. More than one third of the participants have lost track of item they wanted to buy and end up re-searching instead of using the browsing history. Common frustrations include difficulty locating browsing history, the limited duration or visibility of recently viewed items, and forgetting to save products to Wishlists or

the Cart. Users expressed a strong desire for a centralized Browsing History tab that consolidates all viewed products, allows search and filtering, and provides options to remove, clear, or move items directly to Wishlists or the Cart. Full survey insights in *Appendix 14.3: Needfinding Survey Insights*

3.2 Heuristic Evaluation Results

3.2.1 Visibility of System Status

The “Browsing History” feature is inconsistently located across devices and user accounts. It’s buried under Profile → Your Account → Browsing History or it is entirely absent from the app UI and only accessible through the mobile browser. When viewing recently browsed products, the app offers no clear indication that items are being tracked. Users are not informed when history is cleared or turned off, making the state of the system unclear.

Users may not realize that Amazon tracks their viewed products or that they can access this data. The lack of a consistent location and feedback loop violates the visibility heuristic.

The browsing history status is unclear and inconsistently visible hence the interface fails to meet this heuristic and poses a major usability problem.

3.2.2 Recognition Rather Than Recall

The browsing history view (when accessible) relies heavily on text-based product titles and small thumbnails without contextual grouping (e.g., “items viewed last week” or “items viewed while shopping for kitchen supplies”). Users must remember the path to access browsing history or rely on search again, increasing cognitive load. Product recognition is hindered by cluttered visual presentation, similar product listings and missing timestamps make it difficult to distinguish previously viewed items.

Users need to recall product details instead of recognizing them easily in history. This violates one of the most essential heuristics for e-commerce usability, especially for users comparing similar products.

Users must remember paths and products and visual cues are weak, hence the interface fails to meet this heuristic and poses a major usability problem.

3.2.3 User Control and Freedom

The app does not allow users to easily clear or pause browsing history within the mobile interface; these controls exist only on the website. There is no explicit undo option after clearing browsing history and Users cannot control which items are tracked.

This lack of transparency and limited control undermines user trust and freedom. Users who share accounts may want to manage privacy settings dynamically but are restricted by web-only controls.

There is limited ability to view, clear, or manage history within the app hence the interface fails to meet this heuristic and poses a major usability problem.

3.3 Overall Findings

Overall findings indicate clear usability gaps around visibility, recognition, and user control, suggesting that improving browsing history functions could significantly enhance product rediscovery and user satisfaction in the Amazon app. The survey data strongly supports creating a dedicated, easily accessible Browsing History feature with robust search, filtering, and privacy controls.

The Amazon app's browsing history functionality partially exists but fails to meet basic usability heuristics. Users lack visibility into what's tracked, must rely on memory to find past items, and have minimal control over their data. Improving this interface would significantly reduce frustration, enhance user trust, and streamline product rediscovery.

3.4 Three insights

- Visibility of the browsing history is a major pain point. 28% of users report "I can't easily find where my browsing history is located in the app" and 16% of users didn't even know the feature existed. Users cannot see the full scope of their browsing history; no indication of how many items are stored or what the retention limit is hence users cannot trust the system to maintain their history, leading to workaround behaviors.
- Users want higher privacy controls over the information saved in the browsing history. 64% want "ability to remove individual items from history" and 56% want "Privacy controls to pause or disable history tracking". There is also a high

demand for a way to clear all browsing history at once and/or stop or pause history recording

- 80% of the users want a search or a filter option for their browsing history. 56% of the users have to search the whole site again to find an item they have lost. They know they saw it but need help finding it in their history. They also want the history to be filtered based on categories, price, date and so on.

4 INITIAL BRAINSTORMING PLAN

My initial plan is to do individual brainstorming and free think as many ideas I can in 5-10 minutes without judging or evaluating them. I will do this by keeping the core problem visible during the brain storming session so that I can tie in all ideas back to it. The core problem I have identified is: "Amazon users struggle to easily find and manage products they have previously viewed, due to low visibility and control of browsing history features." I will try to answer the questions below as I brainstorm:

- How might we make it effortless to revisit any product a user has seen?
- How might we visualize browsing history in a way that's intuitive and clutter-free?
- How might we give users control over privacy while preserving convenience?

I will also use AI assisted brainstorming to generate ideas like using keywords like timeline, filter and privacy.

Next step will be to cluster the ideas according to themes and mark 2-3 themes for low-fidelity prototyping. I will then evaluate the top ideas to short list 3 for prototyping. To do this, I will perform light weight heuristics such as utility, usability and delight.

5 BRAINSTORMING RESULTS

Keeping the core problem of in mind, I jotted down all the ideas that came to mind and without any need to evaluate them. Using the over all need finding results I asked an AI assistant to share a few ideas to fix the issues discovered in the need finding section. I gave the AI assistant specific issues such as direct quotes from survey participants describing their pain points and asked the AI assistant to give me 2 or 3 one line ideas to resolve or alleviate the participants pain points. Full individual brainstorming list in *Appendix 14.4: Individual Brainstorming*.

5.1 Design Alternatives

Following are the three design alternatives I shortlisted from my brainstorming session.

5.1.1 *Design Alternative 1: "History Hub"*

The "History Hub" design alternative proposes adding a dedicated "History" tab to the Amazon app's main navigation, making browsing history a core and easily accessible feature. The number of items and time range (e.g., "Viewing 47 items from last 30 days") is shared, improving visibility of system status. Users can search, filter by time periods (e.g., All, Today, This Week), and delete individual or multiple items to manage their history efficiently. A persistent History icon with a badge count in the bottom navigation ensures quick access from anywhere in the app. Overall, this design alternative enhances visibility, control, and efficiency, directly addressing user frustrations with discovering, searching, and managing previously viewed items.

My motivation for choosing this design is that it makes browsing history a first-class, easily discoverable feature, enhancing visibility, efficiency, and user control while seamlessly integrating with Amazon's existing navigation patterns.

5.1.2 *Design Alternative 2: "Privacy"*

The "Privacy and Control" design alternative focuses on giving users clear control over their browsing history. A "History Tracking" toggle to pause or resume tracking is included along with visible retention details (e.g., "Retains items for 90 days"), and a "Delete All History" option for full data removal. Each product entry allows quick actions like delete, add to cart, or buy now. The clean layout aligns with Amazon's design patterns, emphasizing transparency, privacy, and user autonomy.

My motivation for choosing this design is because it directly addresses the user need for transparency and data control while maintaining a simple, familiar interface. By combining clear privacy options with visible retention details and efficient product actions, it enhances user trust and autonomy without disrupting Amazon's established browsing experience.

5.1.3 Design Alternative 3: Filter and Search History

The “Filter and Search History” design alternative with an enhanced browsing history interface helps users efficiently locate previously viewed products through intuitive filtering and search options. It introduces filters for time, category, and price, allowing users to narrow down results based on their preferences. This ensures discoverability by using familiar filtering tools drawn from Amazon’s existing shopping experience. By aligning with users’ mental models and emphasizing transparency, this design alternative addresses the key usability gap identified in the needfinding stage: the absence of effective ways to search and filter browsing history.

My motivation for choosing this design is that it transforms history browsing into an engaging, modern experience that emphasizes temporal context and visual discovery, making it both functional and enjoyable.

6 INITIAL PROTOTYPING

6.1 Prototype 1: History Hub - Dedicated Tab Approach

This low-fidelity prototype (see Figure 1) introduces a dedicated “History” tab in the Amazon app’s main navigation to make browsing history a prominent and easily accessible feature. For a full scale image of the prototype refer to *Appendix 14.5: Initial Prototype 1*. The interface displays a summary at the top showing the total number of items and time range (e.g., “Viewing 47 items from last 30 days”), reinforcing visibility of system status. Users can search their browsing history, filter by time periods (All, Today, This Week, Last Week), and select individual or multiple items for deletion. A new persistent History icon with a badge count in the bottom navigation ensures easy access across the app. The design focuses on improving *visibility, user control, and efficiency*, addressing user frustrations around discovering, searching, and managing previously viewed products.

The **top bar** header displays a clear system status: “Viewing 47 items from last 30 days”. This informs users of both quantity and timeframe, reinforcing the *visibility of system status*. A prominent **search bar** labeled “Search your browsing history...” enables users to locate specific items quickly, applying the principle of *flexibility and efficiency of use*. A checkbox labeled “Delete Selected” allows users to batch-delete chosen items, giving them *control and freedom* to manage their data.

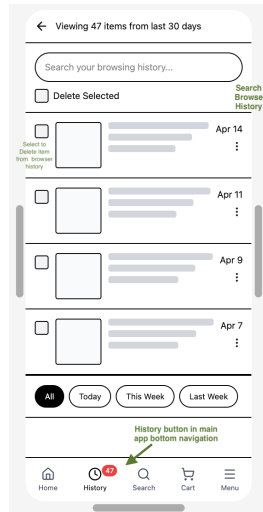


Figure 1—Prototype 1: History Hub

In the **main content area** each previously viewed product is displayed as a card with a **thumbnail image** , **product details** such as title and brief information and **Date viewed** (e.g., 2 hours ago, yesterday or April 14). Each row includes a **checkbox** for multi-item selection, enabling bulk actions (e.g., deleting several items simultaneously).

Filter chips allow users to quickly narrow their view: **All**, **Today**, **This Week**, and **Last Week**. These options simplify browsing history segmentation, following the *recognition over recall* principle.

The **bottom main navigation bar** includes icons for **Home**, **History**, **Search**, **Cart**, and **Menu**. A new persistent **History** icon with a badge count (e.g., “47”) improves discoverability and ease of access.

The design emphasizes several key HCI principles that guide user interaction and interface clarity. It enhances visibility of system status by ensuring users always know what is being tracked and how many items exist in their browsing history. Through user control and freedom, the design provides clear delete and filter options that prevent users from feeling locked into specific actions, empowering them to manage their data easily. The principle of recognition over recall is supported through visual layouts, timestamps, and familiar cues that help users quickly identify items they have previously viewed. Finally, by maintaining consistency and standards, the design aligns with Amazon’s established navigation patterns and interface conventions, allowing for a smooth and intuitive user experience.

6.2 Prototype 2 – “Privacy Controls View”

This low-fidelity prototype (see Figure 2) emphasizes privacy and control within the Amazon app’s browsing history feature. For a full scale image of the prototype refer to *Appendix 14.6: Initial Prototype 2*. It introduces a clear “History tracking” toggle that allows users to pause or resume recording their viewed items, alongside visible retention information (“Retains items for 90 days”) and a prominent “Delete All History” button for complete data removal. Each product entry includes options to delete individual items, add to cart, or buy now, giving users granular and flexible management over their browsing data. The layout maintains a clean, consistent structure aligned with Amazon’s interface patterns, ensuring ease of use while reinforcing transparency. Overall, the prototype prioritizes user autonomy, visibility of system status, and data privacy, directly addressing user feedback about needing more control over their browsing history.

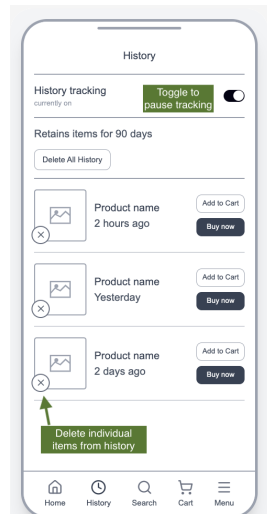


Figure 2—Prototype 2: Privacy Controls View

Tracking Controls are enabled by a labeled toggle, “History tracking – currently on,” allows users to pause or resume browsing history recording. The annotation “Toggle to pause tracking” reinforces clarity and immediate comprehension. The text “Retains items for 90 days” communicates the retention period directly, promoting transparency. A prominent “Delete All History” button provides users with the ability to remove all stored data in one action, aligning with *visibility of system status* and *error prevention*.

The **main content area**: displays a list of previously viewed products with details such as thumbnail image, product name, timestamp (e.g., “2 hours ago,” “Yesterday,” “2 days ago”), “Add to Cart” and “Buy Now” buttons.

Each product entry includes a small circular “X” icon over the thumbnail, annotated as “Delete individual items from history.” This provides fine-grained control for item deletion, supporting *flexibility*.

The persistent **bottom navigation bar** includes the icons: **Home**, **History**, **Search**, **Cart**, and **Menu**. The dedicated **History** icon reinforces quick access and visibility, making privacy management a central app feature.

This design emphasizes user empowerment, transparency, and ease of interaction. It supports User Control and Freedom by allowing users to pause tracking, delete specific or all items, and understand data retention durations. Visibility of System Status is achieved through clear indicators that display current tracking activity and retention settings. To enhance Error Prevention, critical actions such as “Delete All History” are distinctly separated and require confirmation to avoid accidental deletion. Finally, the interface promotes Recognition Over Recall by using clear icons, consistent layouts, and familiar visual cues, enabling users to easily locate and understand privacy-related controls without relying on memory.

6.3 Prototype 3: Filter and Search History

This low-fidelity prototype (see Figure 3) focuses on helping users efficiently locate previously viewed products through structured filtering options. For a full scale image of the prototype refer to *Appendix 14.7: Initial Prototype 3*

At the top, users can see the History Tracking toggle, allowing them to turn tracking on or off—balancing privacy and functionality. Below that, a collapsible Filters section organizes search options by date range, category, and price. The date range dropdown (e.g., “Last 4 days”) helps narrow searches temporally, while category checkboxes (like Electronics, Home & Kitchen, Clothing, and Books) let users refine results by product type. A price range slider enables flexible filtering across budget levels, from 0 to 2000+. The Apply Filters button at the bottom summarizes the number of matching items (e.g., “12 items”) for instant feedback. The consistent bottom navigation bar mirrors Amazon’s familiar structure—Home, History, Search, Cart, and Menu—ensuring users can easily switch contexts.

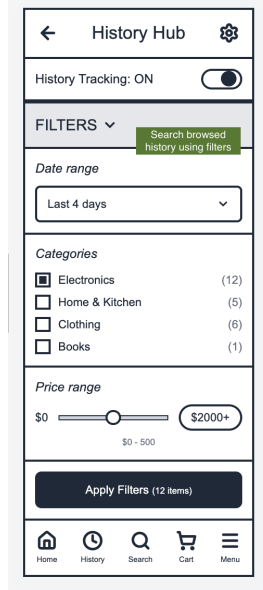


Figure 3—Prototype 3: Filter and Search History

Overall, this prototype emphasizes efficiency, user control, and familiarity, directly addressing user needs for more precise and intuitive browsing history exploration.

7 EVALUATION PLANNING

The goal of this evaluation is to compare three design alternatives for improving Amazon’s browsing history experience—*History Tab (Design 1)*, *Privacy & Control (Design 2)*, and *Filter & Search History (Design 3)*—to identify which interface best supports visibility, control, and ease of revisiting previously viewed products.

Participants and Recruitment: The evaluation will involve 25 participants drawn from classmates and friends who are active Amazon app users. Recruitment will be conducted via Ed Discussion and direct outreach to friends. Each participant will preview annotated low-fidelity prototypes and complete an online survey hosted.

Participants will be shown static images of each prototype representing different design approaches to browsing history management. They will be asked to review and answer survey questions measuring usability, perceived control, and ease of navigation. Open-ended feedback about preferences and improvement suggestions will also be collected.

Quantitative data will include Likert-scale responses (1–5) assessing ease of finding previously viewed items, clarity and usefulness of controls, perceived privacy and data control, overall satisfaction and design preference.

Descriptive statistics (mean, median, and standard deviation) will be calculated for each metric. A comparison of mean ratings across prototypes will identify which concept users find most intuitive and effective.

Open-ended questions will gather insights into why users preferred certain layouts or features, perceived frustrations, and suggested improvements. Responses will be coded thematically into categories such as *ease of access*, *privacy assurance*, and *filter usefulness* to highlight recurring design patterns and emotional responses.

See *Appendix 14.8: Evaluation Survey* for full survey questions.

8 EVALUATION RESULTS

Participants and Recruitment: A total of 25 participants completed the evaluation survey. Participants were recruited from Ed discussion community and friends who are active Amazon app users. All participants successfully viewed the prototypes, which were presented as annotated low-fidelity mockups made in Figma. Each participant compared three prototypes—*Prototype 1 (History Hub)*, *Prototype 2 (Privacy & Control)*, and *Prototype 3 (Filter & Search History)*—and rated them on ease of access, layout usability, and privacy management confidence.

Quantitative Analysis: Table 1 summarizes the mean user ratings for each prototype.

Measure	Prototype 1	Prototype 2	Prototype 3
Ease of finding/accessing history	4.7	4.5	4.2
Layout made it easy to locate products	4.3	4.2	4.0
Confidence in managing privacy	3.5	4.2	3.3

Table 1—Average user ratings (1–5 Likert scale) across prototypes.

All prototypes scored relatively high on accessibility and layout ease, but *Prototype 1 (History Tab)* achieved the highest overall usability rating (mean = 4.7). *Prototype 2 (Privacy & Control)* received the highest confidence score for privacy management

(mean = 4.2), while *Prototype 3 (Filter & Search)* performed slightly lower but still positive overall (mean \approx 4.0).

Prototype Preference: Out of 25 participants:

- Prototype 1 (History Tab): 4 votes (16%)
- Prototype 2 (Privacy & Control): 14 votes (56%)
- Prototype 3 (Filter & Search): 7 votes (28%)

Prototype 2 emerged as the overall favorite, preferred by more than half of respondents.

Qualitative Analysis: Participants provided open-ended feedback for each design. Their comments were coded into themes reflecting ease of access, privacy control, and search utility.

Prototype 1 (History Tab) was praised for its simplicity and discoverability:

“The history button was easy to find and the history of items was clearly shown.” “I liked the inclusion of the badge notification—it provides a strong visual cue.”

However, some found the badge count distracting and requested improved filtering options.

Prototype 2 (Privacy & Control) received positive feedback for transparency and user autonomy:

“I like the functionality of turning off tracking history.” “The immediate, clear privacy controls make me feel more in control.” “Great for browsing gifts privately—can pause tracking anytime.”

A few suggested adding advanced filters or a more visible multi-select delete option.

Prototype 3 (Filter & Search) was appreciated for its filtering and search options:

“The enhanced search functionality directly addresses the main problem.” “Filter by price, date, and category makes it easy to find things I saw earlier.”

However, users recommended integrating privacy toggles from Prototype 2 for completeness.

Summary of Findings:

- Prototype 2 (Privacy & Control) achieved the highest user preference and trust, balancing usability and privacy.
- Prototype 1 (History Tab) excelled in visibility and simplicity but lacked advanced controls.
- Prototype 3 (Filter & Search) provided robust search capabilities but would benefit from combining privacy features.

8.1 Aggregated Quantitative Results

Table 2—Prototype 1 Ratings Summary (N=25)

Metric	Mean	Median	Mode	Min	Max	SD
Easy to find	4.56	5	5	4	5	0.58
Easy to locate product	4.40	4	4	2	5	0.71
Privacy confidence	3.56	4	4	2	5	0.96

Table 3—Prototype 2 Ratings Summary (N=25)

Metric	Mean	Median	Mode	Min	Max	SD
Easy to find	4.52	5	5	2	5	0.71
Easy to locate product	4.20	4	4	2	5	0.96
Privacy confidence	4.20	4	5	2	5	1.00

Table 4—Prototype 3 Ratings Summary (N=25)

Metric	Mean	Median	Mode	Min	Max	SD
Easy to find	4.32	4	4	1	5	0.85
Easy to locate product	4.00	4	4	2	5	0.93
Privacy confidence	3.48	3	3	2	5	0.87

Table 5—Overall Prototype Preference (N=25)

Prototype	Count	Percentage
Prototype 1	5	20%
Prototype 2	13	52%
Prototype 3	7	28%
Total	25	100%

Overall, results suggest that the next design iteration should integrate Prototype 2's privacy toggle with Prototype 3's advanced filtering while maintaining the accessibility of Prototype 1's dedicated tab.

Full survey results can be seen in *Appendix 14.9: Raw Survey Results Prototype Evaluation*

9 SECOND ITERATION PLANNING

The first iteration of this design cycle revealed valuable insights into how Amazon users interact with browsing history features and what improvements would make the experience more intuitive, private, and efficient. The evaluation results indicated that while all three prototypes addressed major usability pain points identified in the needfinding phase—visibility, control, and filtering—no single design fully met all user needs. Prototype 2 (*Privacy & Control*) emerged as the preferred option, demonstrating strong user trust and satisfaction due to its clear tracking toggle and data transparency. However, users also expressed a desire for the advanced search and filtering functionality introduced in Prototype 3 (*Filter & Search History*), suggesting an opportunity to merge strengths from both concepts.

For the second iteration, the design process will focus on **integrating Prototype 2's privacy and control mechanisms with Prototype 3's enhanced filtering and search tools**, while retaining Prototype 1's clear visibility through a dedicated navigation tab. The combined prototype will aim to achieve an optimal balance of discoverability, user autonomy, and efficiency.

This next phase will also address several new insights that emerged from evaluation feedback:

- **Notification overload:** Some participants found the badge indicator distracting; future designs will explore subtler ways to communicate system status.

- **Multi-select deletion and undo actions:** Users requested more flexible batch actions and confirmation options for managing history items.
- **Customization of tracking preferences:** Several participants suggested allowing users to set retention periods or exclude certain categories from tracking.

To refine the merged prototype, a **targeted usability test** will be conducted with a smaller group of participants (20 users). They will interact with a medium-fidelity interactive prototype built in Figma, performing specific tasks such as searching for a previously viewed item, pausing tracking, or filtering by date. Both quantitative metrics (task completion rates, time, satisfaction ratings) and qualitative feedback (ease, confidence, perceived control) will guide the final design iteration.

Ultimately, this re-introduction marks a shift from *divergent exploration* to *convergent refinement*—transforming three promising design directions into one cohesive and user-centered final prototype that effectively supports browsing history management in the Amazon app.

10 FINAL PROTOTYPE

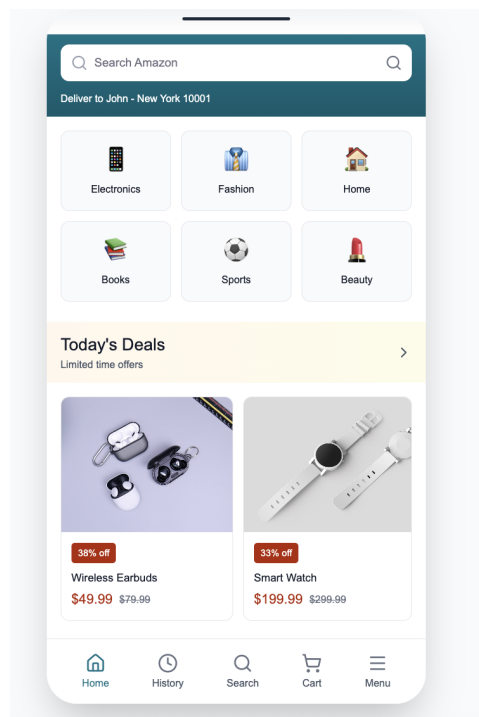
The medium-fidelity prototype, developed in Figma and accessible at <https://hacks-canon-09335460.figma.site/>, represents an integrated design that combines the strengths of the previous low-fidelity prototypes. Specifically, it merges Prototype 2’s robust privacy controls with Prototype 3’s advanced search and filtering capabilities, while maintaining Prototype 1’s high visibility through a dedicated “History” tab in the bottom navigation. This integration directly reflects user feedback from the evaluation phase, where participants expressed a preference for both privacy control and efficient item retrieval within a single, easily accessible interface.

The resulting design features a persistent **History tab** with a recognizable clock icon in the primary navigation bar. The History page opens with a clear header displaying the total number of items and retention period (e.g., “Viewing 47 items from last 30 days”), maintaining transparency and system visibility. A **search bar** and horizontal **time based filter chips** (e.g., All, Today, Last week) enable quick narrowing of results, while a **toggle** allows users to pause or resume tracking, reinforcing a sense of control over their data. Each product tile displays a thumbnail, name, price, and date viewed, consistent with Amazon’s established visual hierarchy and grid system.

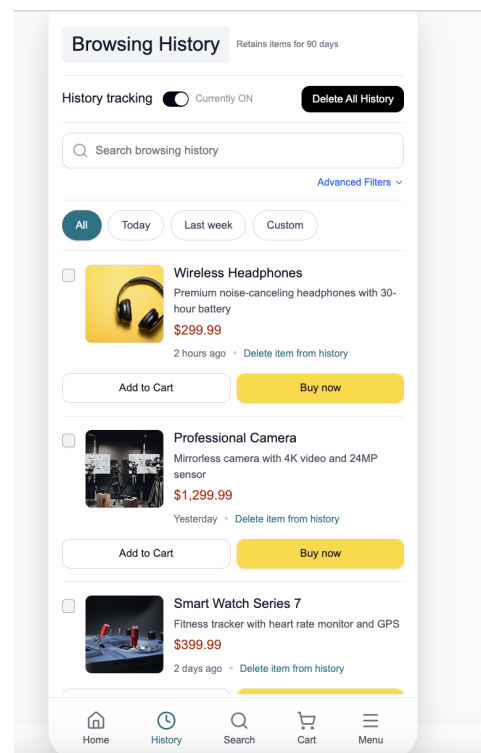
Several design decisions were informed by key HCI principles:

- **Visibility of System Status:** The header summary and toggle clearly communicate system state and tracking activity.
- **User Control and Freedom:** Users can delete single items or entire history lists and affirm confirmations before any deletions.
- **Recognition Rather than Recall:** Visual cues such as product images, brand names, and filter tags help users recognize previously viewed items.
- **Consistency and Standards:** The interface preserves Amazon's visual identity, reducing learning effort and supporting transfer of learning.

This prototype reflects a transition from conceptual sketches to a functional, testable artifact. The next step will involve usability testing with 20 participants, focusing on key user tasks such as locating a product via filters, toggling tracking on/off, and deleting multiple items.



(a) Amazon's Homepage with a clear History icon included in the bottom navigation and accessible throughout the app



(b) Browsing History Hub main page can be easily accessed using the bottom navigation from anywhere in the App

Figure 4—Medium-fidelity prototype overview showing the new Browsing History Hub with privacy controls, search and filtering options.

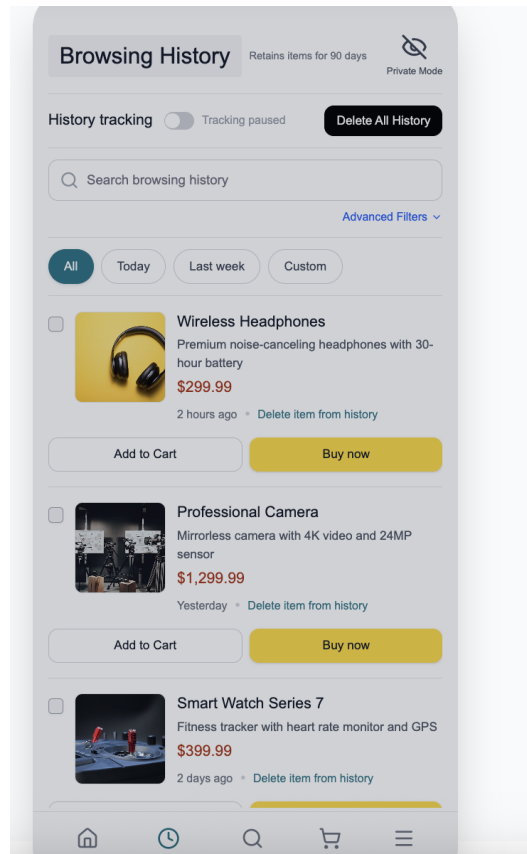


Figure 5—History Tracking Toggle enables and disables private History mode. Grey overlay and privacy icon on top left clearly signals privacy mode enabled.

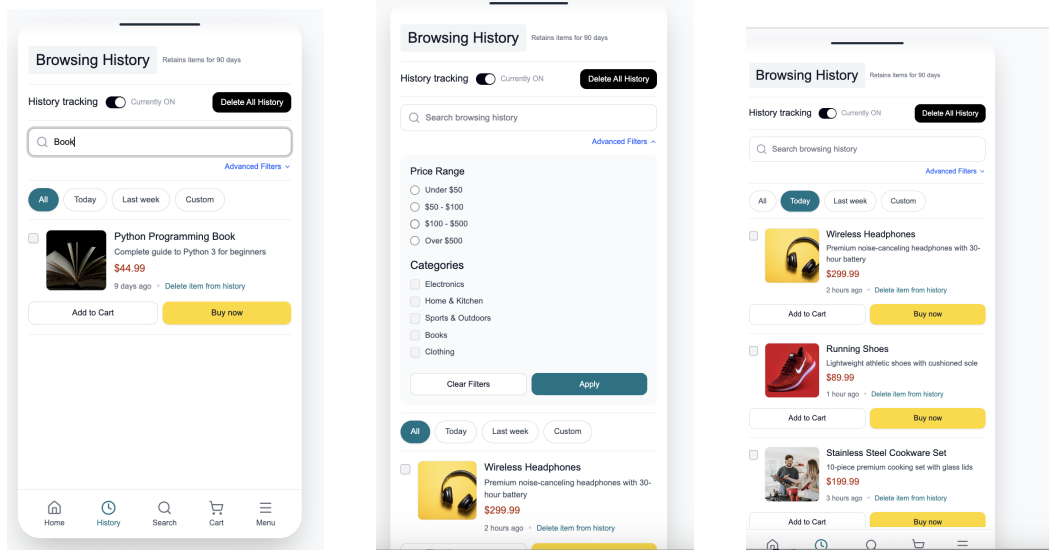
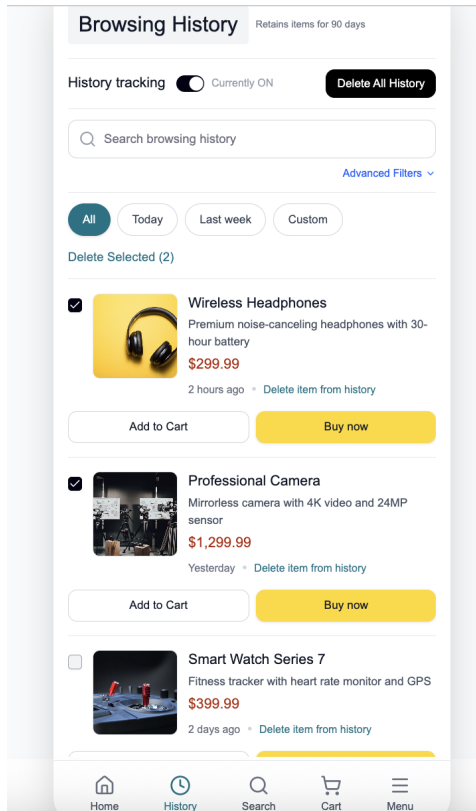
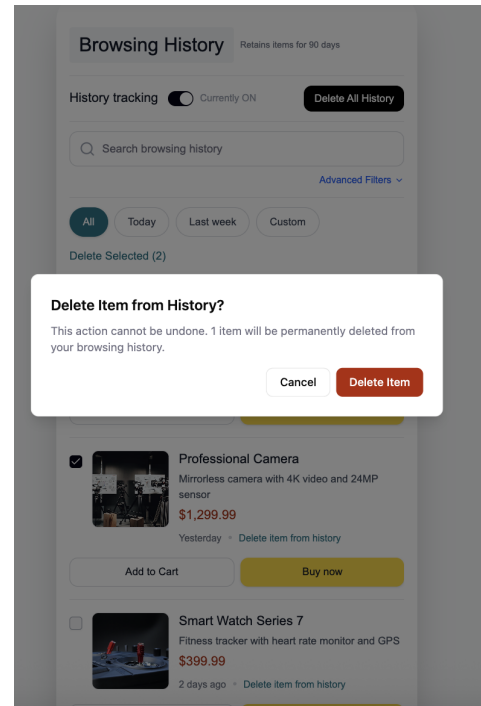


Figure 6—Time based filter chips, Keyword search bar and Advanced filters (price range and category) for easy product location.



(a) Delete individual items via the product card link, batch select for deletion using check boxes and delete all history with one button click



(b) All deletion actions have error prevention mechanisms by showing a confirm deletion prompt with clear message about how many items will be deleted.

Figure 7—Item deletion from Browser History

11 VIDEO PROTOTYPE

Video Prototype can be accessed here: https://mediaspace.gatech.edu/media/ailyas6_final_video_prototype/1_8kzveohs

The medium-fidelity Amazon Browsing History Hub prototype refines insights from earlier evaluations into a cohesive, functional design focused on visibility, privacy, and efficiency. A new “History” tab is added to the app’s main navigation bar, granting one-tap access to a centralized space where users can revisit all previously viewed products. At the top, the interface displays how far back history is stored (for example, “Retains items for 90 days”), reinforcing transparency and user trust. A clear toggle allows users to turn tracking on or off, activating a Private Mode overlay and icon when disabled—providing immediate visual feedback and ensuring users always know whether their activity is being recorded.

Within the hub, a search bar and dynamic filter chips enable users to locate products quickly by keyword, category, price, or date range. Each product card highlights key details—image, title, price, and the date it was viewed—and includes direct actions such as Add to Cart and Buy Now, reducing the number of steps to purchase. Users can also delete individual items, select multiple entries for bulk deletion, or clear their entire history, each action confirmed by a dialog to prevent errors. Guided by HCI principles such as user control, immediate feedback, recognition over recall, and error prevention, this design enhances both confidence and convenience, transforming browsing history into a transparent, privacy-conscious shopping tool.

12 FINAL EVALUATION PLANNING

A total of 20 participants will be recruited from classmates and friends familiar with Amazon. They represent frequent online shoppers who browse and purchase items regularly. Participants will be invited via direct outreach and class Ed discussion. I will offer to complete classmates survey as an incentive and they will also receive participation credit.

Participants will be asked to view the interactive prototype hosted on Figma (<https://hacks-canon-09335460.figma.site/>) and a short demo video https://mediaspace.gatech.edu/media/ailyas6_final_video_prototype/1_8kzveohs demonstrating core functionalities such as viewing browsing history, applying filters, and managing privacy preferences. Following the demo, participants will complete a short online survey designed to capture both quantitative and qualitative feedback. Full survey questions can be found in *Appendix 14.10: Final Prototype Survey*

Quantitative Measures:

Participants will rate their experiences on a 5-point Likert scale regarding:

1. Ease of finding and accessing the browsing history feature.
2. Ease of locating previously viewed products.
3. Confidence in managing privacy and data control.
4. Overall satisfaction with the interface.

Qualitative Measures:

Open-ended questions will collect deeper insights about user experience, focusing on:

- What participants liked most about the interface.
- Any difficulties or confusing elements encountered.
- Suggestions for improvement or additional features desired.

Analysis Plan:

Quantitative data will be analyzed using descriptive statistics (mean, median, and standard deviation) to identify patterns in usability and satisfaction ratings. Qualitative responses will be coded thematically to extract key insights about user perception, usability barriers, and overall interaction flow. The combined findings will guide recommendations for enhancing the browsing history feature in future iterations.

13 FINAL EVALUATION RESULTS

A total of **20 participants** completed the final prototype evaluation survey. Participants were recruited from classmates via Ed Discussions and friends by direct outreach. Each participant was asked to review the interactive prototype <https://hacks-canon-09335460.figma.site/> hosted on Figma and a supporting video walkthrough hosted on Georgia Tech MediaSpace https://mediaspace.gatech.edu/media/ailyas6_final_video_prototype/1_8kzveohs. The evaluation was conducted via an online survey containing both quantitative and qualitative questions, taking approximately ten minutes to complete. For full survey results see *Appendix 14.11: Raw Survey Results – Final Prototype Evaluation*

Quantitative Analysis

The survey included seven Likert-scale questions assessing usability, visibility, efficiency, and privacy control. Table 6 summarizes the results.

Table 6—Quantitative Summary of Prototype Evaluation

Metric	Mean	SD	Interpretation
Browsing history was easy to find and access	4.4	0.66	High discoverability
Layout made locating items easy	4.3	0.61	Clear visual organization
Filtering and search options helped find items faster	4.3	0.79	Useful, intuitive filters
Interface indicated privacy/tracking status	4.2	0.78	Strong transparency
Confidence managing browsing data and privacy	4.1	0.87	Good autonomy and control
Visually clear and intuitive design	4.5	0.49	Excellent visual design
Would find feature useful in real app	4.2	0.63	High perceived value

Overall, participants rated the prototype very positively, with means above 4.0 for all metrics. Low standard deviations (all below 1.0) indicate strong consensus. The highest ratings were for *visual clarity* and *discoverability*, reflecting that the History Hub was easy to locate and visually consistent with Amazon’s design. Slightly lower, but still strong, averages for privacy-related questions suggest opportunities to further clarify tracking and deletion feedback.

Qualitative Analysis

Positive Themes:

- **Ease of Access and Familiarity:** Participants appreciated that the History Hub was seamlessly integrated into the main navigation and followed Amazon’s established layout patterns.
- **Transparency and Control:** Users valued the clear “*Retains for 90 days*” message and the ability to toggle browsing history tracking on or off.
- **Efficiency Features:** Quick filters such as “*Today*,” “*Last Week*,” and keyword search were repeatedly cited as convenient and time-saving.
- **Consistency with Amazon’s Brand:** Multiple respondents commented that the interface “looked like Amazon,” reinforcing user trust and familiarity.

Suggested Improvements:

- **Visual Feedback:** Some participants found the gray overlay in Private Mode confusing and recommended clearer visual indicators.
- **Filter Complexity:** A few suggested simplifying or collapsing advanced filters to avoid cognitive overload.
- **Additional Privacy Options:** Participants requested more granular privacy controls, such as customizable retention periods or auto-delete features.

Eighteen out of twenty participants indicated they would prefer this prototype over Amazon’s existing browsing history interface. Users consistently described the system as clear, efficient, and trustworthy, emphasizing that it gave them a stronger sense of control over their shopping data.

Results confirm that the prototype successfully addressed its primary goals—improving *discoverability*, *transparency*, and *user autonomy*—while maintaining a familiar and visually coherent design. High satisfaction ratings and positive qualitative feedback highlight that the new interface reduced cognitive effort and improved trust in privacy management. Minor refinements to visual feedback and filtering could further enhance user confidence and efficiency.

14 APPENDIX

14.1 Needfinding Survey Questions

Investigating How Amazon Users Track and Revisit Viewed Items

Thanks for helping with my HCI project! The goal is to understand how users revisit/track products they have previously viewed on the Amazon app. This quick survey takes around 5 minutes. Your responses will only be used for my class project.

Q1. How often do you use the Amazon app?*

- ☐ Daily
- ☐ A few times a week
- ☐ A few times a month
- ☐ Rarely

Q2. How many products do you typically view before making a purchase?*

- ☐ 1–3
- ☐ 4–10
- ☐ 10+

Q3. When you want to revisit a product you looked at earlier, what do you usually do?*

- ☐ Search for it again
- ☐ Use the “Recently Viewed” section
- ☐ Check my Wishlists / “Save for later” items
- ☐ Look in my cart
- ☐ Look in order history
- ☐ Other (please describe) _____

Q4. Amazon makes it easy for me to revisit products I’ve seen before.*

- ☐ Strongly Agree
- ☐ Agree
- ☐ Neutral
- ☐ Disagree
- ☐ Strongly Disagree

Q5. Have you ever lost track of an item you wanted to buy because you couldn’t find it again?*

- ☐ Yes
- ☐ No

Q6. If you answered yes to the above question (#5), can you describe what happened? _____

Q7. How often do you use Amazon’s “Recently Viewed Items” feature?*

- ☐ Frequently
- ☐ Occasionally
- ☐ Rarely
- ☐ I didn’t know it existed

Q8. What best describes your experience with Amazon’s “Recently Viewed” or “Browsing History” feature?

- ☐ I use it frequently and find it helpful
- ☐ I use it occasionally and find it somewhat helpful
- ☐ I’ve used it before but find it confusing or not useful
- ☐ I’ve noticed it but never tried using it

☐ I didn't know this feature existed.

Q9. What frustrates you most when trying to find products you have previously viewed? (**Select All that apply**)*

- ☐ I can't easily find where my browsing history is located in the app
- ☐ The "Recently Viewed" section doesn't show everything I've looked at
- ☐ I have to search again to find the same product
- ☐ I forget to add items to my Wishlist or Cart, so I lose track of them
- ☐ The app doesn't save my browsing history for very long
- ☐ I have to scroll through multiple pages or categories to find items again
- ☐ I'm worried about my browsing history being visible to others who use my account
- ☐ Other _____

Q10. Do you currently use any other tools (outside Amazon) to keep track of products you're considering? (e.g., screenshots, notes, bookmarks, etc.)*

- ☐ Yes
- ☐ No

Q11. If Amazon offered a "Browsing History" tab that showed all the products you've viewed, what features would you expect or want?*

- ☐ The ability to view all previously viewed products in one place
- ☐ Search or filter options (e.g., by category, date, price, or brand).
- ☐ The ability to remove individual items from history
- ☐ A way to clear all browsing history at once
- ☐ Privacy controls to pause or disable history tracking
- ☐ Visual thumbnails or product images for quick recognition.
- ☐ The ability to save or move items directly to a Wishlist or Cart
- ☐ Recommendations based on items viewed in history
- ☐ Sorting options (e.g., most recently viewed, most frequently viewed)
- ☐ Other _____

Q12. How important would such a feature be to you?*

- ☐ 5 = Extremely important
- ☐ 4 = Very important
- ☐ 3 = Moderately important
- ☐ 2 = Slightly important
- ☐ 1 = Not important

Q13. Would you want to be able to delete or hide items from your browsing history?*

☐ Yes

☐ No

Q14. Amazon App should use the browsing history to recommend products to me automatically*

☐ Strongly Agree

☐ Agree

☐ Neutral

☐ Disagree

☐ Strongly Disagree

Q15. Overall, how satisfied are you with how the Amazon app helps you manage or revisit previously viewed items?*

☐ 5 = Very satisfied

☐ 4 = Satisfied

☐ 3 = Neutral

☐ 2 = Dissatisfied

☐ 1 = Very dissatisfied

Q16. Is there anything you wish Amazon made easier about revisiting products you've browsed? _____

14.2 Needfinding Survey Results

14.2.1 Question 1: Frequency of Amazon App Usage

Response	Count
Daily	4
A few times a week	8
A few times a month	12
Rarely	1
Total	25

Table 7—Amazon App Usage Frequency

14.2.2 Question 2: Products Viewed Before Purchase

Response	Count
1–3 products	9
4–10 products	11
10+ products	5
Total	25

Table 8—Number of Products Typically Viewed Before Purchase

14.2.3 Question 3: Methods for Revisiting Products

Method (Multiple Selections Allowed)	Count
Search for it again	16
Use the "Recently Viewed" section	13
Look in my cart	12
Check my Wishlists / "Save for later" items	9
Look in order history	6

Table 9—Current Methods for Revisiting Previously Viewed Products

14.2.4 Question 4: Ease of Revisiting Products (Likert Scale)

Statement: "Amazon makes it easy for me to revisit products I've seen before."

Rating	Count	Percentage
1 (Strongly Disagree)	1	4%
2	1	4%
3 (Neutral)	10	40%
4 (Agree)	12	48%
5 (Strongly Agree)	1	4%
Total	25	100%
Mean Score: 3.44 / 5.00		

Table 10—Perceived Ease of Revisiting Products

14.2.5 Question 5: Lost Track of Items

Question: "Have you ever lost track of an item you wanted to buy because you couldn't find it again?"

Response	Count	Percentage
Yes	10	40%
No	15	60%
Total	25	100%

Table 11—Experience Losing Track of Desired Items

14.2.6 Question 5a: Qualitative Descriptions (Selected Responses)

- *"Items added in my cart were disappeared"*
- *"I wanted to buy some car accessories and went into a rabbit hole on a couple of items. I lost my initial item that I wanted and my recents and recommended amazon items were for the deep dive items not the initial search"*
- *"It got moved out of my cart because the price changed"*
- *"I found an item I wanted, but forgot to add it to my cart. When I went back to buy it later, I couldn't find it again by searching, and it was already buried in my browsing history"*
- *"Accidentally removed something from my cart and couldn't find that exact item again"*
- *"Amazon gives SO MANY filter options, that sometimes things go missing for me purely because I can't find the correct combination of filter criteria that brought me to the thing I wanted the first time around"*

14.2.7 Question 6: Frequency of "Recently Viewed Items" Usage

Response	Count	Percentage
Frequently	3	12%
Occasionally	13	52%
Rarely	6	24%
I didn't know it existed	3	12%
Total	25	100%

Table 12—Usage Frequency of "Recently Viewed Items" Feature

14.2.8 Question 7: Experience with Browsing History Feature

Response	Count	%
I use it frequently and find it helpful	3	12%
I use it occasionally and find it somewhat helpful	15	60%
I've noticed it but never tried using it	2	8%
I've used it before but find it confusing or not useful	1	4%
I didn't know this feature existed	4	16%
Total	25	100%

Table 13—User Experience with Current Browsing History Features

14.2.9 Question 8: Frustrations Finding Previously Viewed Products

Frustration (Multiple Selections Allowed)	Count
I forget to add items to my Wishlist or Cart, so I lose track of them	16
The "Recently Viewed" section doesn't show everything I've looked at	11
I have to search again to find the same product	11
I have to scroll through multiple pages or categories to find items again	8
I can't easily find where my browsing history is located in the app	7
The app doesn't save my browsing history for very long	5
I'm worried about my browsing history being visible to others who use my account	3
Other	1

Table 14—Key Frustrations in Finding Previously Viewed Products

14.2.10 Question 9: External Tools for Tracking Products

Response	Count	Percentage
Yes	7	28%
No	18	72%
Total	25	100%

Table 15—Use of External Tools for Product Tracking

14.2.11 Question 10: Desired Features for Browsing History Tab

Desired Feature (Multiple Selections Allowed)	Count
The ability to view all previously viewed products in one place	20
Search or filter options (e.g., by category, date, price, or brand)	20
Visual thumbnails or product images for quick recognition	16
The ability to save or move items directly to a Wishlist or Cart	16
The ability to remove individual items from history	15
Sorting options (e.g., most recently viewed, most frequently viewed)	14
A way to clear all browsing history at once	13
Privacy controls to pause or disable history tracking	13
Recommendations based on items viewed in history	9

Table 16—Most Desired Features for a Browsing History Tab

14.2.12 Question 11: Importance of Browsing History Feature

Rating	Count	Percentage
5 = Extremely important	1	4%
4 = Very important	12	48%
3 = Moderately important	10	40%
2 = Slightly important	2	8%
1 = Not important at all	0	0%
Total	25	100%
Mean Score: 3.48 / 5.00		

Table 17—Perceived Importance of Browsing History Feature

14.2.13 Question 12: Desire to Delete/Hide Items from History

Response	Count	Percentage
Yes	22	88%
No	3	12%
Total	25	100%

Table 18—Desire for Deletion/Privacy Controls

14.2.14 Question 13: Automatic Recommendations Based on History

Statement: "Amazon App should use the browsing history to recommend products to me automatically"

Rating (1–5 Scale)	Count	Percentage
5 (Strongly Agree)	1	4%
4 (Agree)	11	44%
3 (Neutral)	11	44%
2 (Disagree)	2	8%
1 (Strongly Disagree)	0	0%
Total	25	100%
Mean Score: 3.44 / 5.00		

Table 19—Support for Automatic Recommendations

14.2.15 Question 14: Overall Satisfaction with Current Features

Question: "Overall, how satisfied are you with how the Amazon app helps you manage or revisit previously viewed items?"

Rating	Count	Percentage
5 = Very satisfied	0	0%
4 = Satisfied	12	48%
3 = Neutral	11	44%
2 = Dissatisfied	2	8%
1 = Very dissatisfied	0	0%
Total	25	100%
Mean Score: 3.40 / 5.00		

Table 20—Overall Satisfaction with Current Product Revisit Features

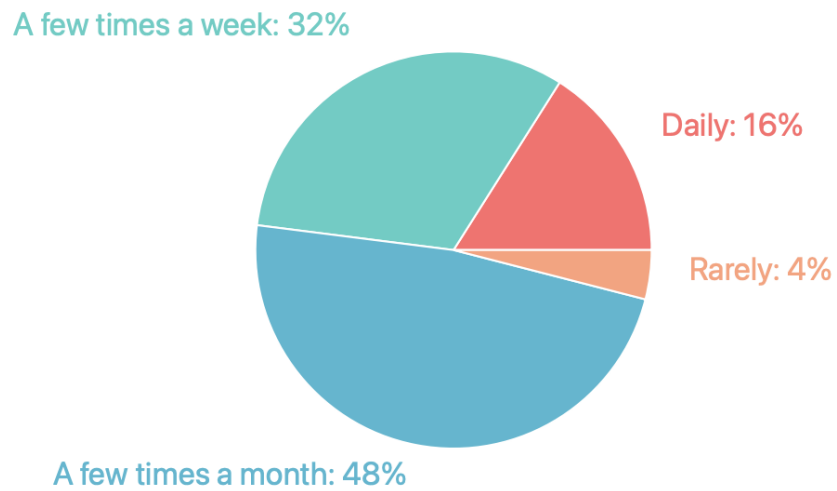
14.2.16 Question 15: Improvement Suggestions (Selected Responses)

- "Put them in one consolidated place"
- "I think a search history summarizes it extensively"
- "I wish there was a search bar for my browsing history. It would be helpful to type in keywords to quickly find a specific item I've viewed before, rather than searching the entire site again"
- "A recently removed from cart feature would be nice"
- "Finding products I looked at earlier but didn't add to my cart. The 'Recently Viewed' section helps a little, but it's limited and often disappears after a while or gets buried under unrelated recommendations"
- "A dedicated page for history"
- "Maybe order by the types of products, books, music, movies, etc."

- *"Make it easier to search items bought a long time back"*

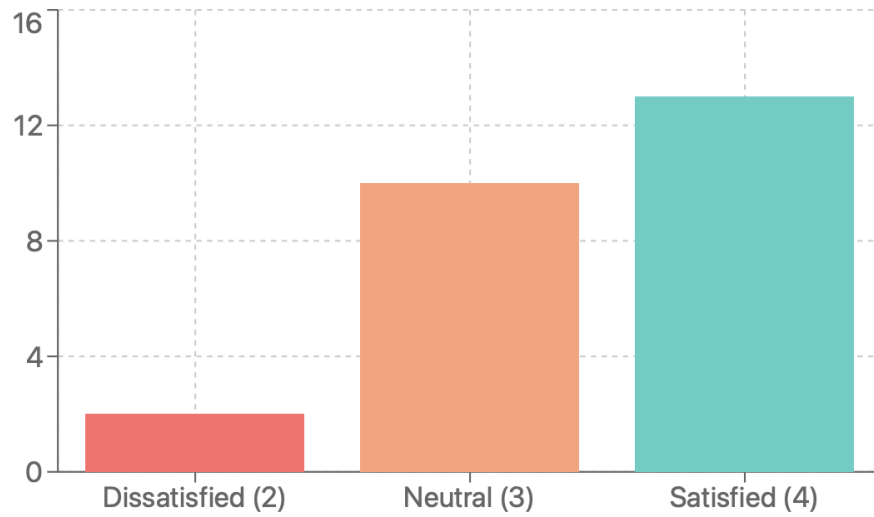
14.3 Needfinding Survey Insights

See figures 8-17.



48% use monthly, 32% weekly, 16% daily

Figure 8—App Usage



⚠ Only 52% satisfied, 40% neutral - significant improvement opportunity

Figure 9—Overall Satisfaction

Feature Awareness & Usage

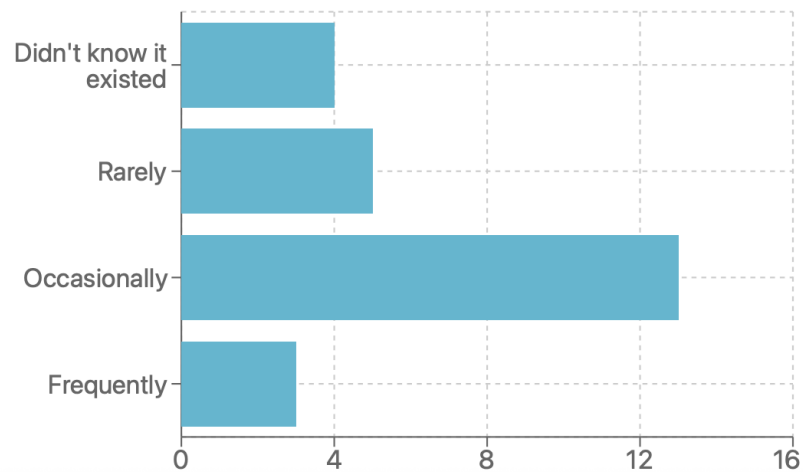
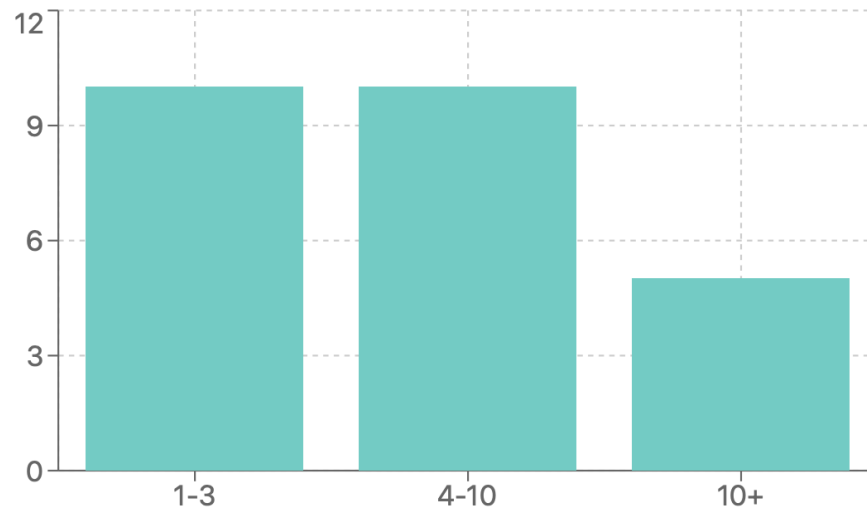


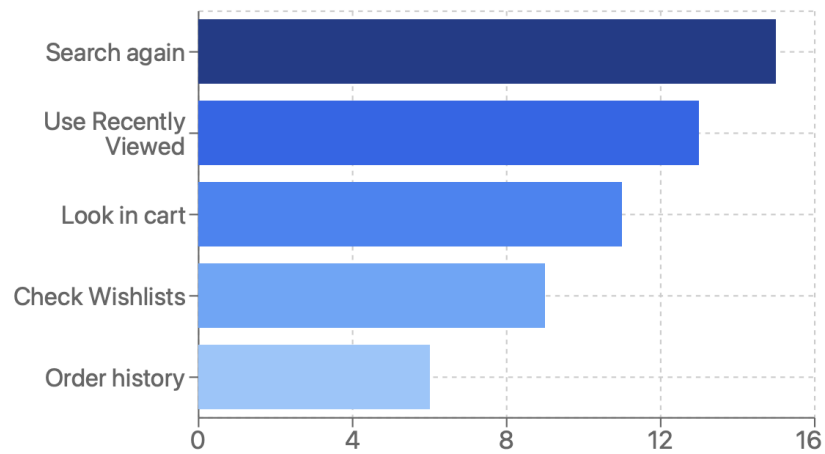
Figure 10—Feature Awareness and Usage



40% view 1-3, 40% view 4-10, 20% view 10+ products

Figure 11—Products Viewed Before Purchase

How Users Revisit Products



Users employ multiple strategies, showing workaround behavior

Figure 12—How Users Revisit Products

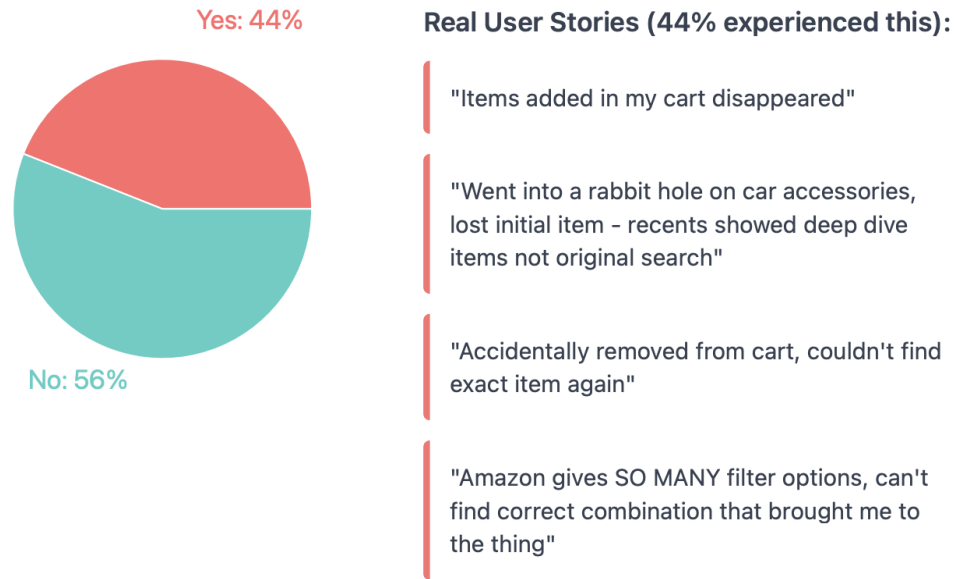
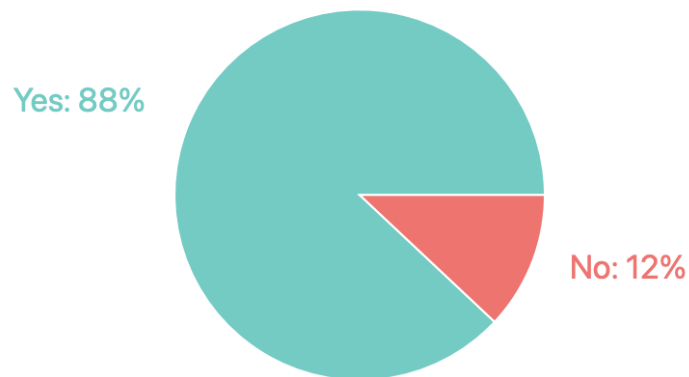


Figure 13—Lost Items Analysis

Most Requested Features

1	View all in one place	21/25 (84%)
2	Search/filter options	20/25 (80%)
3	Visual thumbnails	18/25 (72%)
4	Save to Wishlist/Cart	17/25 (68%)
5	Remove items	16/25 (64%)
6	Privacy controls	14/25 (56%)
7	Sorting options	13/25 (52%)

Figure 14—Most Requested Features



88% want ability to delete/hide items from history

Figure 15—Privacy Control Demand

User Requests (Open-ended)

"Put them in one consolidated place"

"Search bar for browsing history to type keywords and find items"

"Recently removed from cart feature would be nice"

"Dedicated page for history"

"Order by types of products: books, music, movies, etc."

Figure 16—User Requests (Open-ended)

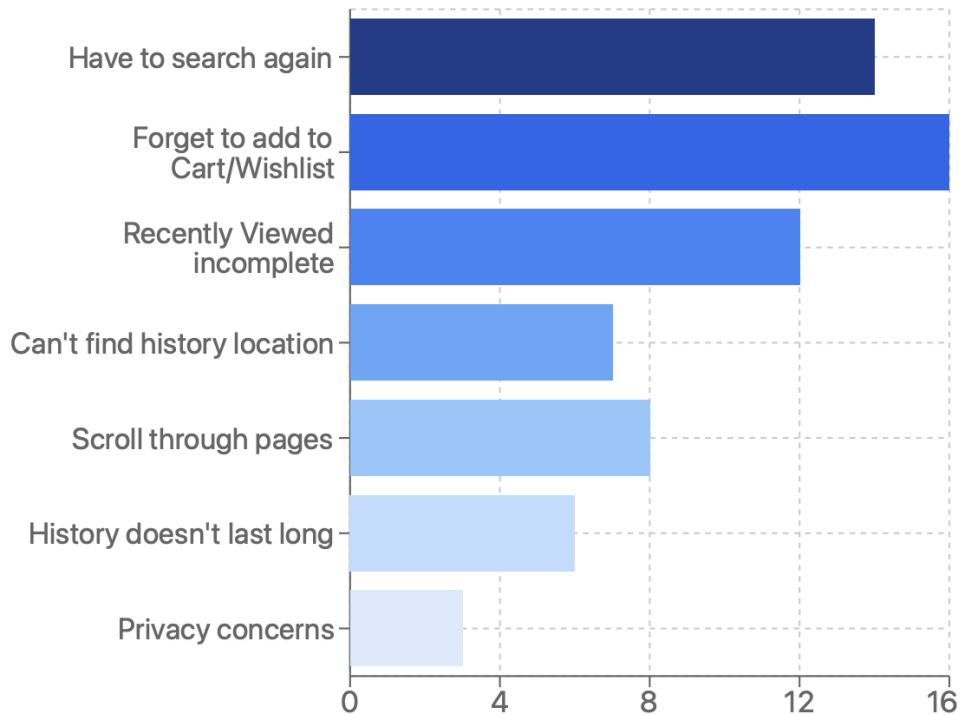


Figure 17—Top User Frustrations

14.4 Individual Brainstorming

14.4.1 List of Ideas

1. Access browsing history via a prominent location such as the main navigation bar.
2. Access browsing history alongside the cart, similar to where saved items are shown.
3. Use global smart search — when searching for products, provide an option to search through the site or previously browsed items.
4. When showing search results, indicate which products have been browsed before on the product card.
5. If a user spends more than a couple of minutes on a product page, prompt them to add the item to a wish list to save it.
6. Enable a private search mode using a smart keyword. For example, if a user types “private: gifts under \$200 for a teenager,” the “private” keyword should signal the app not to track any of the search results.

7. Create a centralized history hub where privacy, search, and filtering can be managed.
8. Add an icon to toggle privacy mode on or off from the home page.
9. Allow search by categories.
10. Allow browsing history search by time filter.
11. Allow search by price range.
12. Implement a smart AI search where users can use natural language prompts, e.g., “I was looking for a book or a headphone set a few days ago, can you show me what I viewed?”

14.4.2 AI Brainstorming

amazon users often have to search for a product they viewed all over again. Give me two - three one line brainstorming ideas to resolve this issue

ChatGPT said: Here are three concise brainstorming ideas to address that problem:

Browsing History Hub: Add a dedicated “History” tab in the main navigation showing all previously viewed items with filters by date, category, or price.

Smart Revisit Suggestions: Use AI to suggest “Recently Viewed” products at the top of the homepage or search results.

Contextual Recall in Search: When users type similar queries, display a “You viewed this item before” badge on matching results.

now give me two one line ideas to make sure users have more control of privacy of what amazon saves in browsing history

ChatGPT said: Here are two one-line brainstorming ideas for improving user privacy control in Amazon’s browsing history:

Privacy Toggle: Add a visible “Pause Tracking” switch so users can instantly stop Amazon from saving their browsing activity.

Custom Retention Settings: Let users choose how long their browsing data is stored — for example, 7, 30, or 90 days — before it auto-deletes.

14.5 Initial Prototype 1

See Figure 18.

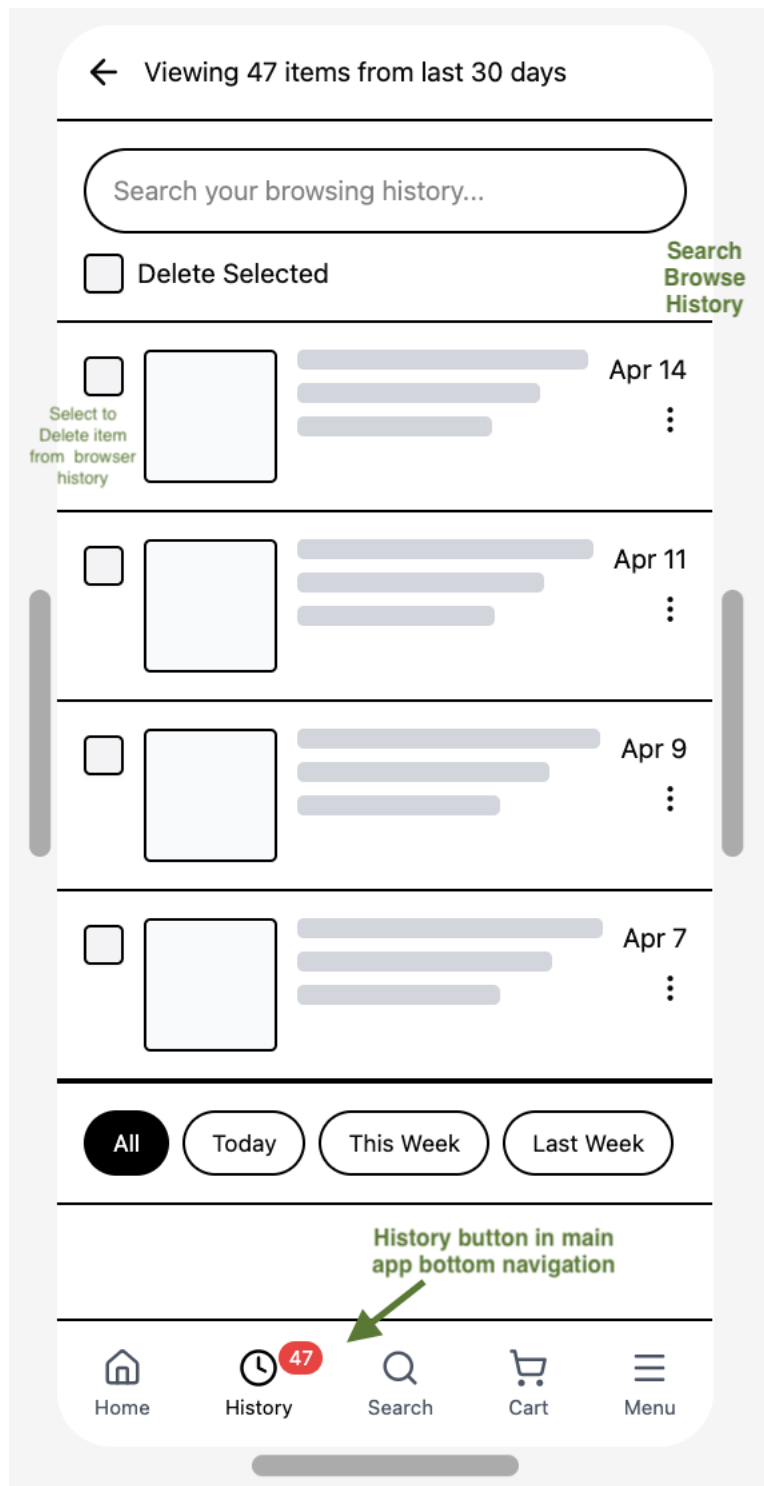


Figure 18—Initial Prototype 1: History Hub

14.6 Initial Prototype 2

See Figure 19.

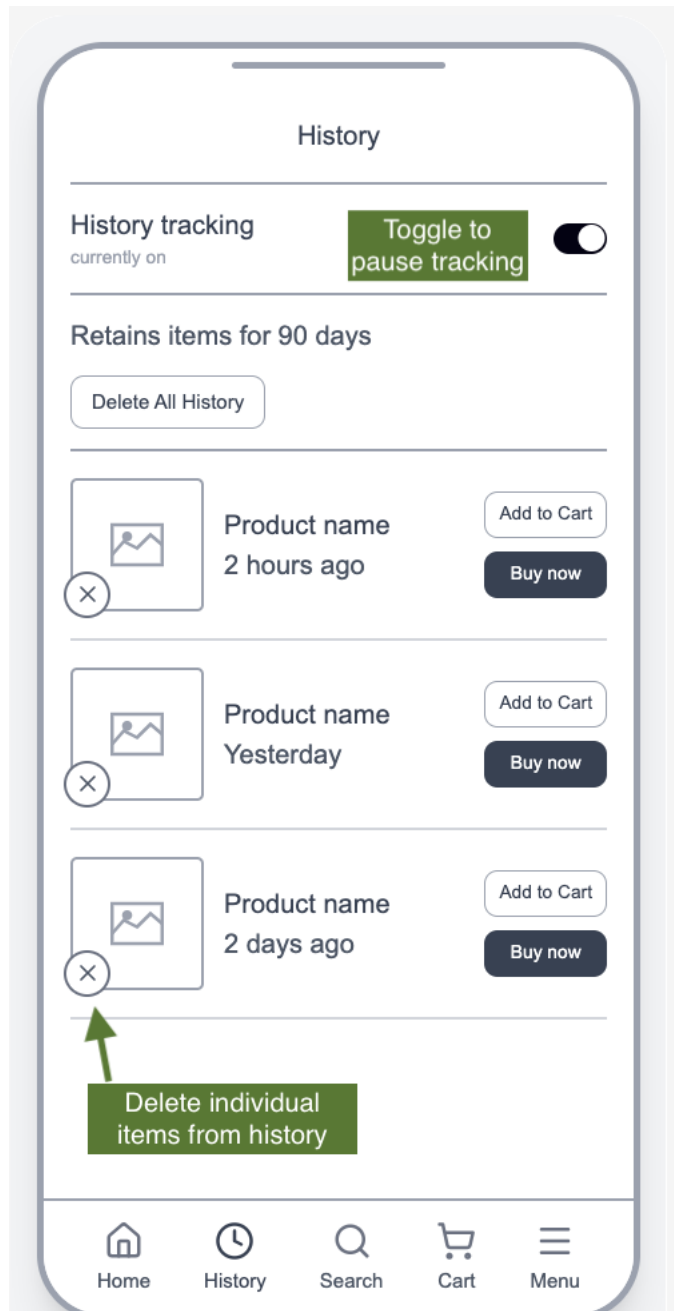


Figure 19—Initial Prototype 2: Privacy Control

14.7 Initial Prototype 3

See Figure 20.

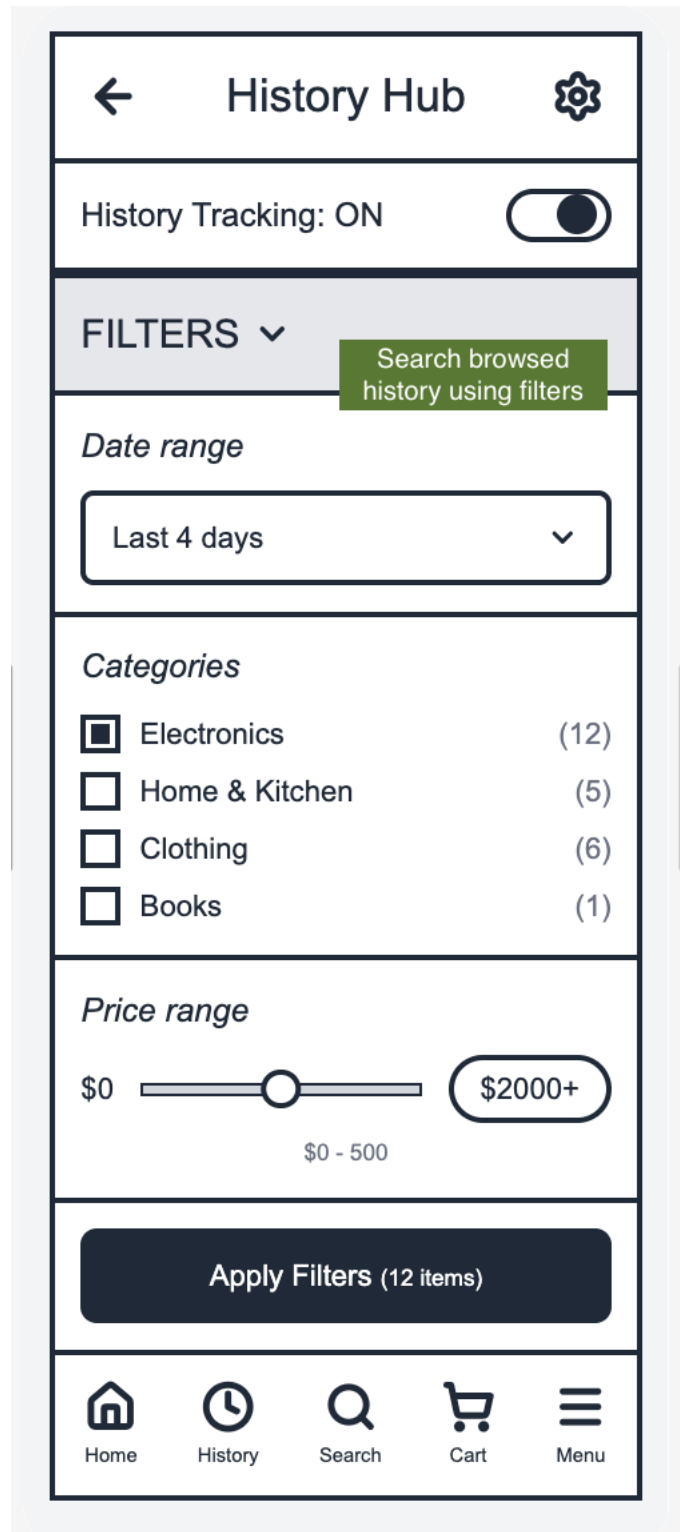


Figure 20—Initial Prototype 3: Search and Filter

14.8 Evaluation Survey

Amazon Browsing History Survey

Amazon users struggle to easily find and manage products they have previously viewed, due to low visibility and limited control of browsing history features. Please evaluate three prototypes created to improve the Amazon App's browsing history page.

Prototype 1

Link: <https://drive.google.com/file/d/1Ldc15lvGmzlj6dkB8ew3rQplqBtGE1Zj/view?usp=sharing>

- Were you able to view the prototype? — Adds a History button in the main app navigation, with a badge showing the number of items in history. Users can browse, search, and delete items from their browsing history.
 - Yes
 - No
- It was easy to find and access the browsing history feature.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- The layout made it easy to locate a previously viewed product.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- I feel confident managing my privacy with this design.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- What did you like most about this prototype? _____

Prototype 2

Link: <https://drive.google.com/file/d/1kyW3laPfJDUPwB2U2PTMXE9lr-p3B2er/view?usp=sharing>

- Were you able to view the prototype? — Adds a History icon in the main app's bottom navigation. Includes privacy controls to pause tracking and delete individual items.
 - Yes
 - No
- It was easy to find and access the browsing history feature.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- The layout made it easy to locate a previously viewed product.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- I feel confident managing my privacy with this design.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- What did you like most about this prototype? _____

Prototype 3

Link: https://drive.google.com/file/d/1QL3_lPeKHtUgG5MnQE1pXQ0pp2PlwUjt/view?usp=sharing

- Were you able to view the prototype? — Adds a History button in the main app's bottom navigation with enhanced search functionality using filters.
 - Yes

- No
- It was easy to find and access the browsing history feature.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- The layout made it easy to locate a previously viewed product.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- I feel confident managing my privacy with this design.
 - Strongly Agree
 - Agree
 - Neutral
 - Disagree
 - Strongly Disagree
- What did you like most about this prototype? _____

Overall Comparison

View all three prototypes side by side at: <https://drive.google.com/file/d/1te7TdX7t0Bg8GzMVJiLHYcKZX-RSKol7/view?usp=sharing>

- Which prototype do you prefer?
 - Prototype 1
 - Prototype 2
 - Prototype 3
- What did you like most about this prototype? _____
- What single improvement would make your preferred design even better? _____

14.9 Raw Survey Results Prototype Evaluation

14.9.1 Prototype 1: Viewing Confirmation

Question: "Prototype 1: Please view the prototype 1 below. Were you able to view it? — Adds a History button in the main app navigation, with badge notification

showing number of items in the history. Browse search history, select and delete items from the browse history."

Response	Count	Percentage
Yes	25	100%
No	0	0%
Total	25	100%

Table 21—Prototype 1 Viewing Success Rate

14.9.2 Prototype 1: Ease of Finding Feature

Question: "Prototype 1: It was easy to find and access the browsing history feature." (5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
5	5	4	5	4	5	5	4	4	5	4	4	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
5	5	5	5	5	5	4	4	5	5	5	5

Statistic	Value
Mean	4.56
Median	5
Mode	5
Standard Deviation	0.58
Minimum	4
Maximum	5

Table 22—Prototype 1: Ease of Finding Feature - Summary Statistics

14.9.3 Prototype 1: Ease of Locating Products

Question: "Prototype 1: The layout made it easy to locate a previously viewed product." (5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
5	5	4	2	3	5	4	4	4	5	4	4	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
4	5	5	5	5	5	5	4	5	4	4	4

Statistic	Value
Mean	4.40
Median	4
Mode	4
Standard Deviation	0.71
Minimum	2
Maximum	5

Table 23—Prototype 1: Ease of Locating Products - Summary Statistics

14.9.4 *Prototype 1: Privacy Confidence*

Question: "Prototype 1: I feel confident managing my privacy with this design."
(5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
4	5	4	3	4	5	2	3	2	4	4	3	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
4	4	2	5	3	2	2	2	4	4	4	4

Statistic	Value
Mean	3.56
Median	4
Mode	4
Standard Deviation	0.96
Minimum	2
Maximum	5

Table 24—Prototype 1: Privacy Confidence - Summary Statistics

14.9.5 *Prototype 1: Qualitative Feedback*

Question: "Prototype 1: What did you like most about this prototype?"

14.9.6 Complete Responses

1. the ability to search through history
2. I'd like the simplicity of just adding the history button at the bottom of the page.
3. The history button was easy to find and the history of items bought were clearly shown. Can select which items to delete

No response

No response

4. The browsing history button is highly visible and discoverable! I also liked that there were time options to filter through your browsing history.
5. I like how simple and easy it is to access and find previously searched products
6. Easy to access
7. The ability to delete items from your history
8. Search bar to only search through previously seen items
9. Ease of finding a history button
10. I went to amazon to see how easy this was to do, and I agree, it is not the easiest. They do have recent searches in the search bar, but it is not easy to see all. I feel this is straight forward and useful, but I do not think it is common enough of a feature to be place in the location where it is that noticable. The 47 on their does not seem necceray. I find it to be distracting and the information it conveys is not useful to me. It seems like something that needs to be cleared or it ill eventually be 99+ or something like that. I am not a fan of needing to delete it from the history. It creates overhead for me, but others may find that useful.
11. Design
12. I liked the inclusion of the badge notification (e.g., "47") on the history button, which provides a strong call to action and a clear visual cue that there are items waiting to be reviewed.
13. I liked how simple yet discoverable the addition was, it was easy to find but did not clutter the interface. I also liked the search feature a lot because it makes navigating to items I viewed very simple
14. The fact that I can finally remove/track my product search history.
15. The dedicated History button with badge notifications provides clear visibility.
16. It seems to have pretty much all you need to view your history.

No response

17. Ability to search recently looked at pages

18. I like that you can directly search for something rather than relying solely on filters.

No response

No response

No response

19. The ability to see my history by dates and the ability to clear it.

14.9.7 Prototype 2: Viewing Confirmation

Question: "Prototype 2: Please view the prototype 2 below. Were you able to view it? — Adds a History icon in the main App's bottom navigation. Privacy controls by pausing tracking and deleting individual items from tracking. Did you see the prototype?"

Response	Count	Percentage
Yes	25	100%
No	0	0%
Total	25	100%

Table 25—Prototype 2 Viewing Success Rate

14.9.8 Prototype 2: Ease of Finding Feature

Question: "Prototype 2: It was easy to find and access the browsing history feature." (5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
5	4	4	4	4	5	5	4	4	5	2	4	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
5	5	5	5	5	5	4	4	5	5	5	5

Statistic	Value
Mean	4.52
Median	5
Mode	5
Standard Deviation	0.71
Minimum	2
Maximum	5

Table 26—Prototype 2: Ease of Finding Feature - Summary Statistics

14.9.9 Prototype 2: Ease of Locating Products

Question: "Prototype 2: The layout made it easy to locate a previously viewed product." (5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
5	3	4	4	4	5	4	4	4	5	2	5	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
3	3	5	5	5	5	4	2	5	5	5	4

Statistic	Value
Mean	4.20
Median	4
Mode	4
Standard Deviation	0.96
Minimum	2
Maximum	5

Table 27—Prototype 2: Ease of Locating Products - Summary Statistics

14.9.10 Prototype 2: Privacy Confidence

Question: "Prototype 2: I feel confident managing my privacy with this design." (5-point Likert scale)

P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉	P ₁₀	P ₁₁	P ₁₂	P ₁₃
5	5	4	3	4	4	4	4	4	5	2	2	3

P ₁₄	P ₁₅	P ₁₆	P ₁₇	P ₁₈	P ₁₉	P ₂₀	P ₂₁	P ₂₂	P ₂₃	P ₂₄	P ₂₅
5	5	5	4	3	5	4	4	5	5	5	5

Statistic	Value
Mean	4.20
Median	4
Mode	5
Standard Deviation	1.00
Minimum	2
Maximum	5

Table 28—Prototype 2: Privacy Confidence - Summary Statistics

14.9.11 Prototype 2: Qualitative Feedback

Question: "Prototype 2: What did you like most about this prototype?"

14.9.12 Complete Responses

1. the use of buttons to easily delete, buy, or add to cart
2. I like the functionality of turning off the tracking history.
3. Can delete the items in 1 click, removes an extra click from step 1

No response

No response

4. I liked that there were direct options to add to the cart/buy now from this page.
5. I like that it gives me the option to toggle when to track my history
6. Can delete and pause
7. The ability to pause the history
8. Less busy ui, plus add to cart button right in front
9. N/A
10. I think it is straight forward to use. the boxes seem to be easy to clear, but maybe that could also be distracting. I like the option of holding down on one, then being able to select multiple items. This is consistent with other apps, but would be less discoverable. I like how the notificatin is not there with the numbers
11. Design

12. The immediate, clear privacy controls. The ability to pause tracking without deleting everything is a useful feature for when I'm browsing for a gift or private purchase.
13. I liked how it allowed us to pause - that way if we want to buy a present for a friend but worry they may see it our history we have control over it
14. Gives the users more control over their privacy
15. The pause tracking feature gives good control over privacy settings.
16. I like the addition of the "history tracking" toggle

No response

17. Ability to control search results.

18. That you can easily find the button to turn the browsing history off and on.

No response

No response

No response

19. I like you provide the option to the user to stop tracking history.

14.9.13 Prototype 3: Viewing Confirmation

Question: "Prototype 3: Please view the prototype 3 below. Were you able to view it? — Adds History button in the main App's bottom navigation. Enhanced search functionality using filters."

Response	Count	Percentage
Yes	24	96%
No	1	4%
Total	25	100%

Table 29—Prototype 3 Viewing Success Rate

14.9.14 Prototype 3: Ease of Finding Feature

Question: "Prototype 3: It was easy to find and access the browsing history feature." (5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
4	5	4	1	3	5	5	3	4	5	4	4	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
5	5	5	5	5	5	4	4	4	4	3	5

Statistic	Value
Mean	4.32
Median	4
Mode	4
Standard Deviation	0.85
Minimum	1
Maximum	5

Table 30—Prototype 3: Ease of Finding Feature - Summary Statistics

14.9.15 Prototype 3: Ease of Locating Products

Question: "Prototype 3: The layout made it easy to locate a previously viewed product." (5-point Likert scale)

P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12	P13
4	4	4	5	4	5	5	2	4	2	3	4	4

P14	P15	P16	P17	P18	P19	P20	P21	P22	P23	P24	P25
5	4	5	5	5	5	3	3	5	4	3	3

Statistic	Value
Mean	4.00
Median	4
Mode	4
Standard Deviation	0.93
Minimum	2
Maximum	5

Table 31—Prototype 3: Ease of Locating Products - Summary Statistics

14.9.16 Prototype 3: Privacy Confidence

Question: "Prototype 3: I feel confident managing my privacy with this design." (5-point Likert scale)

P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉	P ₁₀	P ₁₁	P ₁₂	P ₁₃
3	2	4	5	3	3	2	3	4	5	2	2	3

P ₁₄	P ₁₅	P ₁₆	P ₁₇	P ₁₈	P ₁₉	P ₂₀	P ₂₁	P ₂₂	P ₂₃	P ₂₄	P ₂₅
3	3	5	5	3	4	3	4	4	4	3	3

Statistic	Value
Mean	3.48
Median	3
Mode	3
Standard Deviation	0.87
Minimum	2
Maximum	5

Table 32—Prototype 3: Privacy Confidence - Summary Statistics

14.9.17 Overall Prototype Preference

Question: "Which prototype do you prefer? View all three prototypes side by side at the link below:"

P ₁	P ₂	P ₃	P ₄	P ₅	P ₆	P ₇	P ₈	P ₉	P ₁₀	P ₁₁	P ₁₂	P ₁₃
P ₂	P ₃	P ₃	P ₂	P ₂	P ₁	P ₃	P ₂	P ₂	P ₂	P ₁	P ₃	P ₂

P ₁₄	P ₁₅	P ₁₆	P ₁₇	P ₁₈	P ₁₉	P ₂₀	P ₂₁	P ₂₂	P ₂₃	P ₂₄	P ₂₅
P ₃	P ₁	P ₃	P ₂	P ₂	P ₂	P ₂	P ₁	P ₂	P ₂	P ₂	P ₂

Prototype	Count	Percentage
Prototype 1	5	20%
Prototype 2	13	52%
Prototype 3	7	28%
Total	25	100%

Table 33—Overall Prototype Preference Summary

14.9.18 Preferred Prototype: What You Liked Most

Question: "What did you like most about this prototype?" (referring to their preferred prototype)

14.9.19 Complete Responses

1. the ability to filter by product type
2. I liked it's simplicity. And how you'd use it as a filter instead of having it as a separate page.
3. Being able to filter items in the history more specifically
4. N/A
5. I like the price range scrollable bar
6. I think I just like the fact that I'm able to filter through the time, and then also search through my browsing history. Prototype 2 I think makes it too easy to accidentally delete an item.
7. The filter functionalities would help me to narrow down quicker
8. Easy to control privacy
9. The ability to filter
10. Date range option
11. The ability to filter
12. I like the ability to filter the results. It would be easier to view items. I think a search bar there would be nicer
13. Design
14. The enhanced search functionality using filters (Category, Date, Price) directly addresses the difficulty of finding a specific item in a large history, which is the core problem with the current Amazon system.
15. I liked how it gave me let me narrow in on what I wanted to view in my history
16. Allows you to have control over your privacy and filter your history, which optimizes the interaction with the feature
17. The enhanced filter capabilities make it easier to find specific items in a long history.
18. Best prototype is IMO #1 + the "pause tracking" feature.
19. I like the option to delete them
20. The ability to control the search history and curate lists.
21. I liked that you could directly search for what you are looking for rather than relying on filters alone.

22. It's reassuring to have turn off option for privacy.
23. It's reassuring to have toggle option for privacy.
24. Deleting individual items is straightforward.
25. Toggle to pause tracking let me know when the app is saving my browsing history.

14.9.20 *Single Improvement for Preferred Design*

Question: "What single improvement would make your preferred design even better"

14.9.21 *Complete Responses*

1. the ability to search or filter by type
2. A forget me button for items such as in prototype 2.
3. search history using keywords
4. Accessing browser history more easy
5. it looks great already
6. I would combine some of the more advanced filtering options from Prototype 3 into the design of Prototype 1. For example, it would be nice to be able to search through categories in prototype 1.
7. I think you can combine the filter function of prototype 3 to 1 and 2 as well.
8. N/A
9. Leave the filtering as a smaller sub menu
10. Adding a search bar or date range
11. Select all feature
12. have a search bar in proto3,
13. NA
14. Integrate the Privacy Controls from Prototype 2 (specifically the "History tracking ON/OFF" toggle and a prominent "Delete All History" button) into the Prototype 3 "History Hub" screen. This would create a single, powerful hub that combines both advanced item location and robust privacy management.
15. I would make it so that we can choose to clear the notification of how many items are our history - just because it may be a bit distracting
16. I like Prototype 3's approach
17. Adding category-based auto-organization and time-based sorting would enhance the search experience.

18. I do not feel like there are large distinctions between the prototypes (with Prototype #1 lacking the "pause tracking" being the exception). All 3 seem like solid ways to add this feature.
19. nothing i can think of
20. Options to search or categorize items.
21. Perhaps if you added the history tracking on/off toggle like you had in prototypes 2 and 3.
22. I'd love to see a short description or thumbnail preview for each item in the history, just text makes it harder to recall what it was.
23. I'd love to see a short description or thumbnail preview for each item in the history, just text makes it harder to recall what it was.
24. There should be a 'Clear all' confirmation dialog and maybe an undo option after clearing history so I don't accidentally delete items I want to keep
25. Add a search bar so I can type keywords and jump to an item I viewed earlier rather than scrolling through a long list

14.9.22 Summary Comparison Table

Metric	Prototype 1	Prototype 2	Prototype 3
Mean Ratings (out of 5)			
Easy to find	4.56	4.52	4.32
Easy to locate product	4.40	4.20	4.00
Privacy confidence	3.56	4.20	3.48
Overall Preference			
Preference votes	5 (20%)	13 (52%)	7 (28%)

Table 34—Comparative Summary Across All Three Prototypes

14.10 Final Prototype Survey

Amazon Browsing History – Final Prototype Evaluation

This survey explores ways to improve how users revisit previously viewed products within the Amazon mobile app. The prototype you will review introduces a "Browsing History" feature that allows users to see, filter, and manage the items they have explored. Your feedback will help assess the prototype's usability, clarity, and perceived value. The survey includes both rating-scale and open-ended questions and should take approximately 10 minutes to complete.

Access and Materials (Required)

- Were you able to access and view the prototype at <https://hacks-canon-09335460.figma.site/>?
 - ☐ Yes
 - ☐ No
- Were you able to view the video prototype: https://mediaspace.gatech.edu/media/ailyas6_final_video_prototype/1_8kzveohs?
 - ☐ Yes
 - ☐ No

Quantitative Evaluation (Required)

For each statement, select one:

- The browsing history feature was easy to find and access.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
- The layout made it easy to locate previously viewed products.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
- The filtering and search options helped me find items faster.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
- The interface clearly indicated my current privacy/tracking status.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
- I felt confident managing my browsing data and privacy settings.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
- The prototype's overall design was visually clear and intuitive.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree
- I would find this feature useful if implemented in a real shopping app.
 - ☐ Strongly Agree ☐ Agree ☐ Neutral ☐ Disagree ☐ Strongly Disagree

Qualitative Evaluation (Required)

- What did you like most about the prototype?

- What, if anything, did you find confusing or frustrating?

- Did the privacy and data management controls feel sufficient? Why or why not?

- Would you prefer this design over Amazon's current browsing history experience? Please explain.

14.11 Raw Survey Results – Final Prototype Evaluation

Were you able to access and view the prototype at <https://hacks-canon-09335460.figma.site/>?

Yes (20 responses)

Were you able to view the video prototype?

Yes (19 responses), Blank (1)

The browsing history feature was easy to find and access.

Responses: 5, 5, 4, 5, 4, 5, 4, 4, 5, 5, 5, 5, 4, 4, 5, 5, 4, 3, 4, 3

Average	4.4
Standard Deviation	0.66

The layout made it easy to locate previously viewed products.

Responses: 5, 5, 4, 5, 4, 5, 4, 4, 5, 5, 5, 4, 4, 4, 4, 5, 4, 4, 3, 3

Average	4.3
Standard Deviation	0.61

The filtering and search options helped me find items faster.

Responses: 5, 5, 4, 4, 4, 5, 5, 4, 5, 5, 5, 4, 4, 5, 4, 4, 5, 3, 4, 2

Average	4.3
Standard Deviation	0.79

The interface clearly indicated my current privacy/tracking status.

Responses: 5, 5, 2, 4, 4, 5, 4, 4, 5, 5, 5, 4, 4, 4, 4, 5, 4, 3, 3, 4

Average	4.2
Standard Deviation	0.78

I felt confident managing my browsing data and privacy settings.

Responses: 5, 3, 2, 4, 4, 5, 5, 4, 4, 5, 5, 4, 5, 4, 4, 5, 4, 4, 3, 3

Average	4.1
Standard Deviation	0.87

The prototype's overall design was visually clear and intuitive.

Responses: 5, 5, 4, 4, 4, 5, 4, 4, 5, 5, 5, 4, 4, 4, 5, 5, 5, 4, 4, 4

Average	4.5
Standard Deviation	0.49

I would find this feature useful if implemented in a real shopping app.

Responses: 5, 5, 3, 4, 4, 5, 4, 4, 4, 4, 5, 4, 4, 4, 4, 5, 5, 4, 4, 3

Average	4.2
Standard Deviation	0.63

What did you like most about the prototype?

I like the quick buttons for today and last week.
Everything seemed intuitive to me as an iPhone user, the search history bar worked great.
Layout was similar to Amazon.
Nice design.
The history track toggle.
History tracking enabling option.
I like being able to directly interact within the history instead of it just bringing me to the item homepage.
Ease of use and clean UI.
It had a lot of features and ways to make shopping easier and more convenient.
Highly interactable. Worked as expected.
Ability to turn the feature on and off.
The option to clearly turn tracking history off, or delete it, if desired.
The added functionality would benefit my personal use of the interface.
I liked how simplistic it was in making sure I could find what I need.
The simplicity of design and the clear browsing history view.
The history tab felt naturally integrated into Amazon's navigation and the toggle for pausing tracking made me feel in control.
The time filters and the ability to quickly search for older products were very convenient.
The design was visually consistent with Amazon's UI and the toggle for private mode worked well.
I liked that everything related to browsing history is organized in one place.

The privacy toggle is a good addition, and I liked the clear “Retains for 90 days” note.

What, if anything, did you find confusing or frustrating?

Nothing.

Gray tint when disabling tracking felt like app froze; filtering results inconsistent.

Deleting single items.

N/A.

None.

Nothing.

How would custom filter work?

N/A.

Nothing.

None.

Simple design; nothing confusing.

Clear and efficient.

NA.

Nothing stuck out as confusing.

A “Recently Viewed 7 Days” toggle might speed navigation.

Add tooltip for “Retains 90 days.”

“Delete Selected” dialog could highlight deletions more clearly.

History tab icon blended with others—use color indicator.

Unclear if “Private Mode” stops tracking instantly; show feedback.

Filter section a bit overwhelming—simplify or collapse.

Did the privacy and data management controls feel sufficient? Why or why not?

Yes – ability to delete all or specific items.

No – want to see my tracking record too.

No – deleting data/history confusing.

Yes.

Very sufficient.

Yes.

Yes – could add export option.

Yes – protects search history well.
Sufficient – toggle shows status clearly.
Sufficient but hard to trust big companies.
Yes – settings visibility adequate.
Yes – clear data management status and toggle.
Yes – confirmations increased confidence.
Helps by visually showing privacy mode.
Yes – covers view/delete/manage; tooltip could help.
Yes – toggle and “Delete All” felt transparent.
Mostly yes – allow manual 90-day adjustment.
Yes – add granular category exclusion.
Mostly yes – add reminder before re-enabling tracking.
Step in right direction – add auto-delete timer.

*Would you prefer this design over Amazon’s current browsing history experience?
Please explain.*

Yes – current Amazon lacks quick filters/search bar.
Yes – filtering options feel more intuitive.
No – too similar.
I use Lists; History could complement it.
Toggle improves privacy.
Yes – easier to find items.
Yes – can move items directly to cart or buy.
Yes – more intuitive overall.
Yes – easier to use and manage history.
No preference – I disable Amazon tracking.
Yes – offers more control.
Yes – mainly for privacy controls.
Yes – toggle allows private shopping on shared accounts.
Yes – provides all desired features in one place.
Absolutely – transparent, easy, lighter UI.
Yes – more visible and controllable than hidden current version.
Yes – cleaner and more functional.
Yes – but improve visibility/customization.
Yes – simpler and organized, minor privacy clarity needed.

Somewhat – better transparency, a bit control heavy.