

Team 22 - Logger

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Problem Statement

There are multiple browser extensions that track a variety of web data ranging from web requests to time spent on a particular site. However, these extensions inadequately supply a user with a common extension to facilitate all data analytics in one place. Our goal is to provide users with a streamlined universal extension to analyze their time spent on sites, data usage, and general browsing habits, among other things.

Background Information

In recent years, people have found themselves using the Internet more and more for a variety of purposes. As such, there is increasing interest in cataloguing and analyzing web data, whether it be to discover user trends or to improve crucial online services. Many applications have been developed to facilitate this data collection, and while several function well one has to use a plethora of software in order to evaluate and display collected data. Our aim is to create a new rendition of this analytic software that completes a wide range of these required functions all in one place in an intuitive, user-friendly manner.

Environment

The extension itself will be done in JavaScript, with a NoSQL database (Firebase) for storing user information. There will be no server. All calculations will be done on the client. React will be used for any webpage components of the extension. The extension will run on Chrome.

Functional Requirements

#	Functional Requirement	Hours	Status
1	As a user, I would like to log my time spent on any website I visit.	6	Planned for sprint 1
2	As a user, I would like to track my internet data usage as I visit websites.	6	Planned for sprint 1
3	As a user, I would like to visualize collected data.	12	Planned for sprint 1
4	As a user, I would like to filter out specific websites from logging.	6	Planned for sprint 1
5	As a user, I would like to modify what is logged on all websites.	5	Planned for sprint 1
6	As a user, I would like to modify the tracking for specific websites.	7	Planned for sprint 1
7	As a user, I would like to track the total number of website visits for each website	5	Planned for sprint 1
8	As a user, I would like to manually edit the category of a site.	5	Planned for sprint 1
9	As a user, I would like to monitor browsing from website to website.	8	Planned for sprint 1
10	As a user, I would like my social media accounts to tie into the database.	6	Planned for sprint 1
11	As a user, I would like to see what my internet data is being used for specifically	11	Planned for sprint 1
12	As a user, I would like to see how much time I've spent on each subreddit.	5	Planned for sprint 1
13	As a user, I would like to know how much time I've watched specific YouTube channels	10	planned for sprint 1
14	As a user, I would like to see how many TV shows and movies I've watched on Netflix	10	Planned for sprint 1
15	As a user, I would like to see how much time I've spent watching TV shows and movies on Netflix	9	Planned for sprint 1
16	As a user, I would like to be able to delete any usage data	9	Planned for sprint 1
17	As a user, I would like to manage my account (login, logout)	10	Planned for sprint 1
18	As a user, I would like to visually see a directed graph with my network paths.	12	Planned for sprint 2
19	As a user, I would like the category of website to be automatically determined.	9	Planned for sprint 2
20	As a user, I would like to be notified when I am on a certain website for too long.	7	Planned for sprint 2
21	As a user, I would like to log my usage across all my devices.	10	Planned for sprint 2
22	As a user, I would like to set warnings for when I visit a website outside my specified allotted time block	8	Planned for sprint 2

#	Functional Requirement	Hours	Status
23	As a user, I would like a list of websites visited that is sortable by collected data	8	Planned for sprint 2
24	As a user, I would like daily, weekly, and monthly usage graphs for each website	10	Planned for sprint 2
25	As a user, I would like a timeline that shows the order I visited websites with timestamps.	10	Planned for sprint 2
26	As a user, I would like a list of most popularly visited websites among all users	9	Planned for sprint 2
27	As a user, I would like to be able to export my data after sorting, filtering, and choosing a file type.	14	Planned for sprint 2
28	As a user, I would like to view my site specific statistics on an extension panel	14	Planned for sprint 2
29	As a user, I would like to delete my account, thereby wiping all associated data	3	Planned for sprint 2
30	As a user, I would like to view the most popular sub-reddits, YouTube channels, and Netflix shows among all users.	8	Planned for sprint 2

Non-Functional Requirements

Architecture

1. Extension will be completed in JavaScript
2. Database will be completed in NoSQL
3. Must be usable in Chrome

Scalability

1. Application should be easily modifiable to add additional options/graphs.
2. Application should be easily modifiable to expand compatible browsers in the future.

Usability

1. Application UI should be easy to navigate and understand.
2. No unnecessary interrupts should disrupt user during use.
3. Application loading times should be reasonably fast.

Security

1. The database storing user information will be kept private to prevent corruption.
2. The database is linked to the user's Google account to ensure higher security.

Use Cases

Case 1: Log my time spent on any website

Action

1. Browse to a website
3. Browse to a new website
5. Exit website

System Response

2. Start logging visit
4. Update log to reflect change
6. Stop logging site

Case 2: Track my internet data usage

Action

1. Browse to a website
3. Exit website

System Response

2. Start logging data transfer
4. Stop logging site

Case 3: Visualize collected data

Action

1. Click 'Data'

System Response

2. Display default visuals

Case 4: Filter websites from logging

Action

1. Click 'Preferences'
3. Click 'Blacklist websites'
5. Type website URL

System Response

2. Display user preferences
4. Display list of filtered sites
6. Prevent website logging

Case 5: Modify what is logged universally

Action

1. Click 'Preferences'
3. Click 'Logging Preferences'
5. Select universal log options

System Response

2. Display user preferences
4. Display user logging preferences
6. Update all logging

Case 6: Modify what is logged specifically

Action

1. Click 'Preferences'
3. Click 'Logging Preferences'
5. Select specific website
7. Select log options

System Response

2. Display user preferences
4. Display user logging preferences
6. Display website preferences
8. Update specific logging

Case 7: Track total number of visits

Action

1. Browse to a website

System Response

2. Increment visit counter

Case 8: Manually edit category of site

Action

1. Click 'Preferences'
3. Click 'Logging Preferences'
5. Select specific website
7. Select edit category

System Response

2. Display user preferences
4. Display user logging preferences
6. Display website preferences
8. Update specific logging

Case 9: Tracking relations between websites**Action**

1. Browse to a website
3. Browse to a new website

System Response

2. Start logging visit
4. Update log to reflect change
5. Log websites' relation

Case 10: Social media integration**Action**

1. Click social media on login
2. Enter username and password

System Response

3. Firebase handles authentication

Case 11: View where internet data is used**Action**

1. Click 'Data'
2. Click 'Internet usage'
3. Click on a website

System Response

4. Display usage breakdown

Case 12: View time spent on subreddits**Action**

1. Click 'Data'
2. Click 'Reddit'

System Response

3. Display time spent

Case 13: View time spent on YouTube channels**Action**

1. Click 'Data'
2. Click 'YouTube'

System Response

3. Display time spent

Case 14: View how many movies/tv shows viewed on Netflix**Action**

1. Click 'Data'
2. Click 'Netflix'
3. Display number of tv shows/movies

System Response**Case 15: View time spent on Netflix****Action**

1. Click 'Data'
2. Click 'Netflix'
3. Display time spent

System Response**Case 16: Delete usage data****Action**

1. Click 'Data'
2. Click 'Websites'
4. Click X on a list item

System Response

3. Display websites list
5. Remove from list
6. Remove website data

Case 17: Log-in and log-out**Action**

1. Click log in
4. Click log out

System Response

2. Redirect user to Data
3. Load user data
5. Redirect user to Login
6. Unload user data

Case 18: Visual directed graph**Action**

1. Click 'Data'
3. Click 'Website Graph'

System Response

2. Display default data page
4. Display user directed graph

Case 19: Automatically set website category**Action**

1. Browse to a website

System Response

2. Search database for existing entry
3. If exists set similar category
4. If not determine from internal data

Case 20: Notifying a user who has spent too much time on a website**Action**

1. Click 'Preferences'
3. Click 'Usage Warnings'
5. Click 'Add new warning'
7. Set max time for a website
9. Browse to a website

System Response

2. Display preferences page
4. Display usage warnings page
6. Display warning form
8. Add to a database
10. Check total usage time
11. Display popup warning if necessary

Case 21: Log usage across devices**Action**

1. Use website on separate device

System Response

2. Log usage

Case 22: Warning for using website outside specified time**Action**

1. Click 'Preferences'
3. Click 'Usage Warnings'
5. Click 'Add new warning'
7. Set time interval for a website
1. Browse to a website

System Response

2. Display preferences page
4. Display usage warnings page
6. Display warning form
8. Add to a database
2. Check system time
3. Display popup warning if necessary

Case 23: View websites list and sort**Action**

1. Click 'Data'
3. Click 'Websites'
5. Click column heading
7. Click column heading again

System Response

2. Display default data page
4. Display sorted list of websites
6. Sort list by column ascending
8. Sort list by column descending

Case 24: View daily/weekly/monthly graphs**Action**

1. Click 'Data'
3. Click 'Websites'
5. Click a website
7. Scroll to view graphs

System Response

2. Display default data page
4. Display list of websites
6. Display data for that website

Case 25: View timeline of activity**Action**

1. Click 'Data'
3. Click 'Timeline View'

System Response

2. Display default data page
4. Display timeline of internet browsing

Case 26: View most popular websites list**Action**

1. Click 'Data'
3. Click 'Popular Websites'

System Response

2. Display default data page
4. Display list of most popular websites

Case 27: Export user data**Action**

1. Click 'Preferences'
3. Click 'Export Data'
5. Click file type
7. Click download

System Response

2. Display user preferences
4. Display exporting page
6. Generate exported file of that type
8. Download file

Case 28: Extension Panel**Action**

1. Open website
3. Click Extension Panel Button
5. Update Statistics collected

System Response

2. Collect Live Usage Statistics
4. Open Extension Panel
6. New Statistics Reflected in extension panel

Case 29: Delete Account**Action**

1. Click 'Preferences'
3. Click 'Delete Account'

System Response

2. Display user preferences
4. Delete Account Data in Database

Case 30: Popular Subreddits, Youtube Channels, Netflix Shows**Action**

1. Click 'Data'
3. Click 'Popular social media'

System Response

2. Display default data page
4. Display lists of most popular subreddits, YouTube channels, and Netflix shows