



Sonoma State University

Computer Science Department

CS 349 – Spring 2023

Problem: Browsing History

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The Problem

Your task is to design a Web Browsing History. You can use a variety of different data structures to design your solution, i.e. Vector, Stack, Doubly Linked List, etc. I would recommend that you use a Doubly Linked List as it allows you to better visualize each node as a page and how those pages are linked together.

As you read in the input you will first get a function call and the function call will be followed by a url or an integer.

For example, every test case will begin with “BrowserHistory”. This indicates that the constructor of your class should be called. It will always be followed by a URL which you should pass as a parameter to your constructor. That represents your starting page. After that, you may have three cases. Case 1: You read “visit” which indicates that you have searched for a new page. It is then followed by the URL of the new page you searched. Case 2: You have read “browseUntil” which indicates that you have remained on that site for a period of time. For the purposes of this assignment, you will only remain on a site for a number of seconds. This is followed by an integer which represents the number of seconds you will remain on the page. Case 3: You have read “endOfHistory” which indicates the end of the browsing history.

Each time a page is created you should have a time stamp that holds the current time of the day that the page was visited. You can use the “ctime” library to get the current time of the day. For the “browseUntil” case you should have your system pause(Sleep) for the number of seconds provided.

Input

"BrowserHistory Leetcode.com visit Google.com visit Facebook.com browseUntil 15 visit Youtube.com visit Sonoma.edu visit Ebay.com browseUntil 10 visit Twitter.com endOfHistory"

Output

```
----- HISTORY -----  
  
Twitter.com 12:52:49  
  
Ebay.com 12:52:39  
  
Sonoma.edu 12:52:39  
  
Youtube.com 12:52:39  
  
Facebook.com 12:52:24  
  
Google.com 12:52:24  
  
Leetcode.com 12:52:24  
  
----- END -----
```

The output should have the URL of the site and the time stamp after it. Your timestamp will vary depending on the time you run your program at. Ensure that the sites that were browsed for a number of seconds have the correct time jump. Ensure that you print the list in reverse so that the most recent page is at the top of the history.