

TrackMyPIU

(Track My Personal Information Usage)

SecureInfo

김인환, 김보성, 예두희

학생부문 (자유과제)

SecureInfo Team Members



김인환 (팀장)

- ❑ 프로젝트 관리
- ❑ 개발 보조
- ❑ HTML 페이지 레이아웃



김보성

- ❑ 개인정보 사용이력 로깅 모듈 개발
- ❑ 정보 사용이력 확인 모듈 개발
- ❑ HTML 페이지 레이아웃



예두희

- ❑ 개인정보 사용이력 로깅 모듈 개발
- ❑ 정보유출상황 탐지 모듈 개발
- ❑ 소프트웨어 설정 및 데이터 관리 모듈 개발

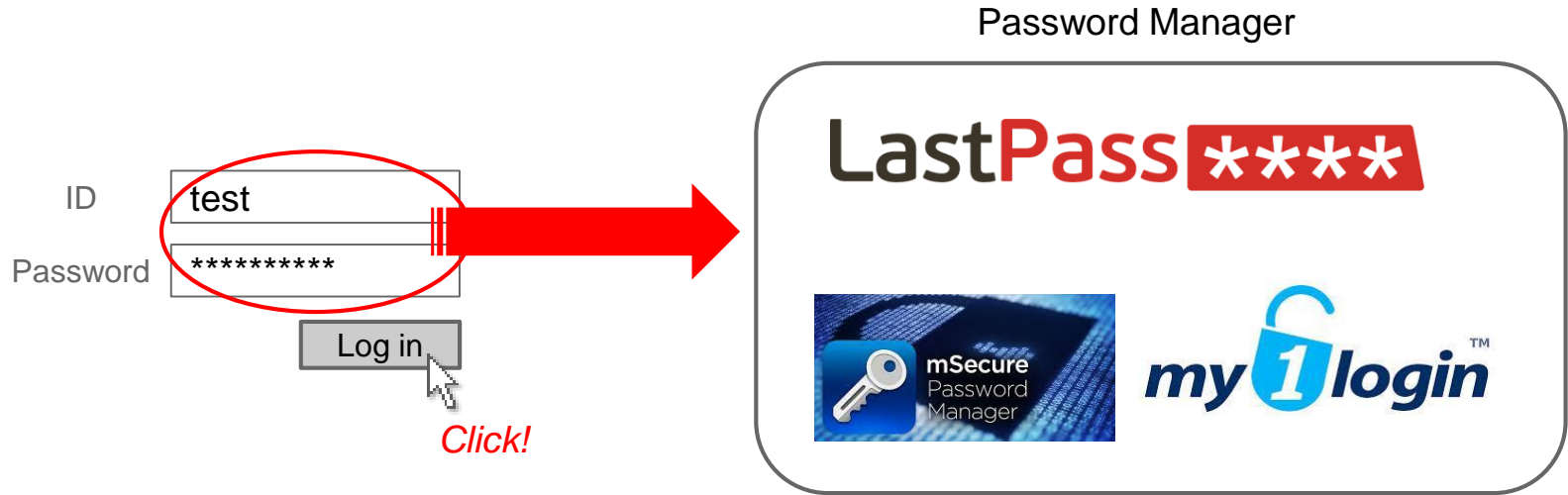
Introduction



Hard to remember!



Introduction



나의 정보 사용 내역을 알려주진 않는다!

Motivation

나의 개인정보 사용을 추적해보자!

Let's Track **My Personal Information Usage!**

TrackMyPIU

(Track My Personal Information Usage)

- **목적**
 - 웹브라우저의 개인정보(예: ID, password) 사용 내역 추적
 - 부정사용으로 확인 혹은 의심되는 정보사용이력 탐지 및 보고

- **구성모듈**
 - 정보 사용이력 로깅 모듈
 - 정보 유출 상황 탐지 모듈
 - 정보 사용이력 확인 모듈
 - 소프트웨어 설정 및 데이터 관리 모듈

TrackMyPIU Overview

Login

ID

Password

Click!

Signup

ID

Password

E-mail

Address

Click!



Google
sync server



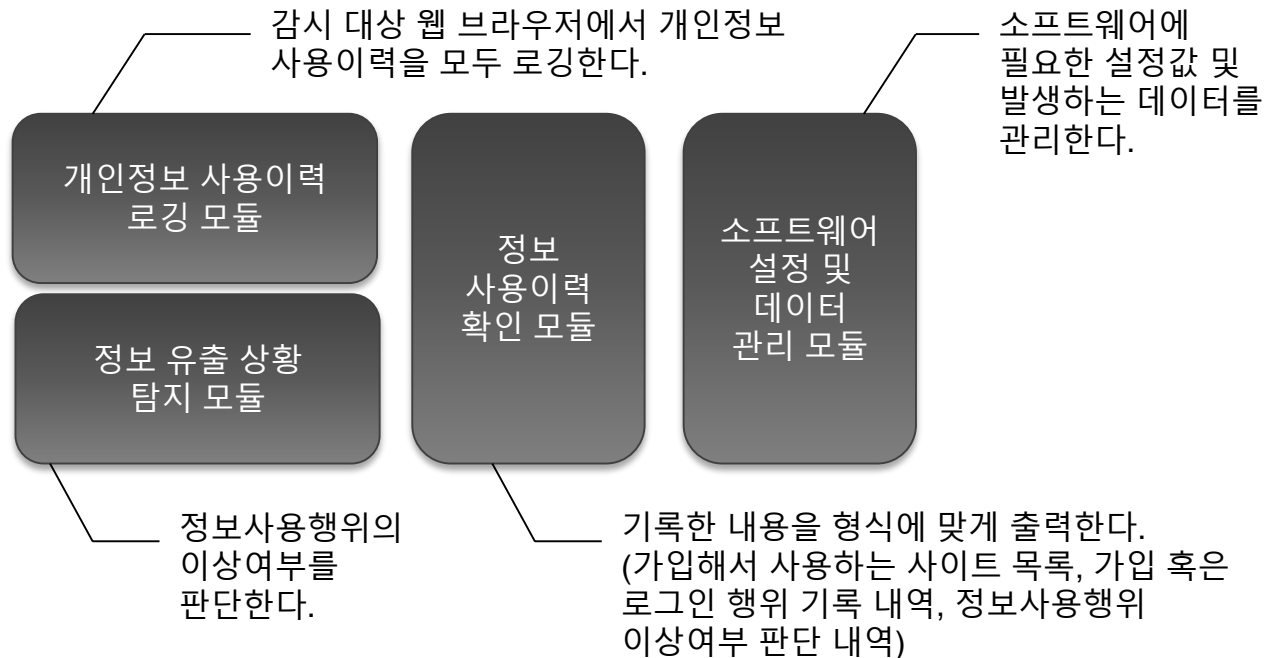
User

Reports

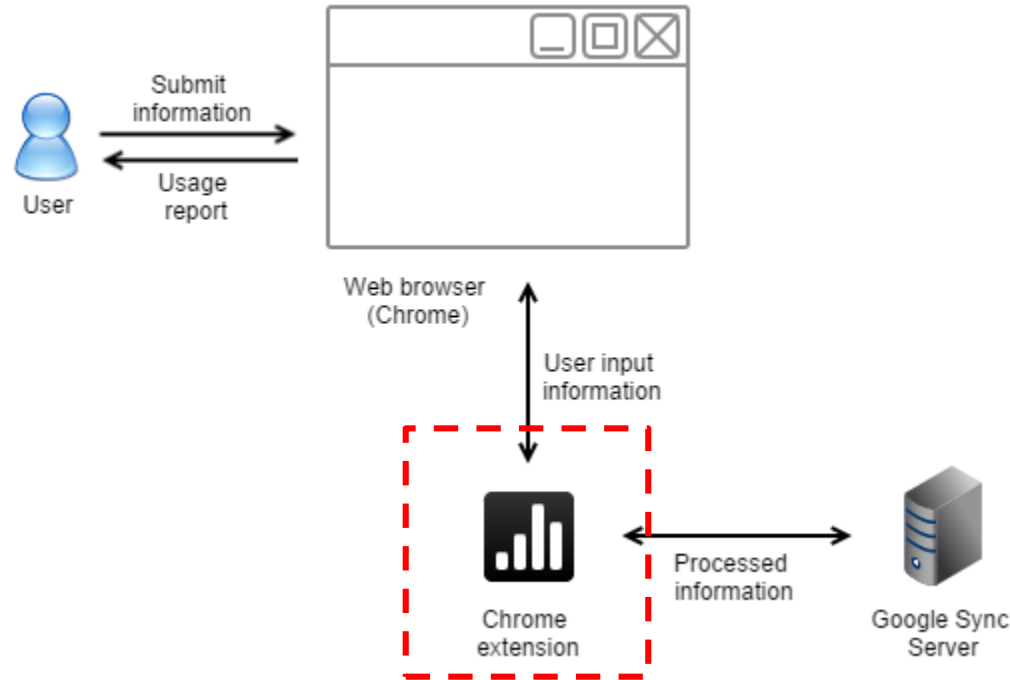
- 가입한 혹은 로그인한 웹사이트 확인
- 내 정보사용 이력 확인

Reports		
when	where	what
-----	-----	-----
-----	-----	-----
-----	-----	-----
-----	-----	-----

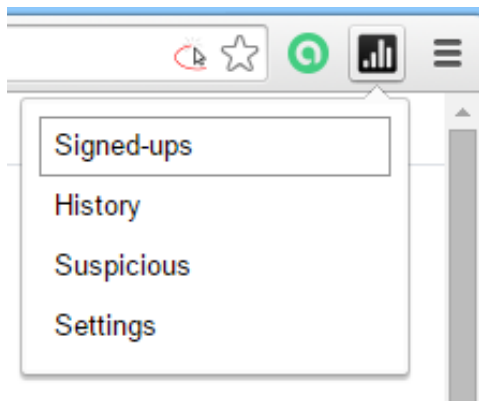
Software Modules



How does it work?

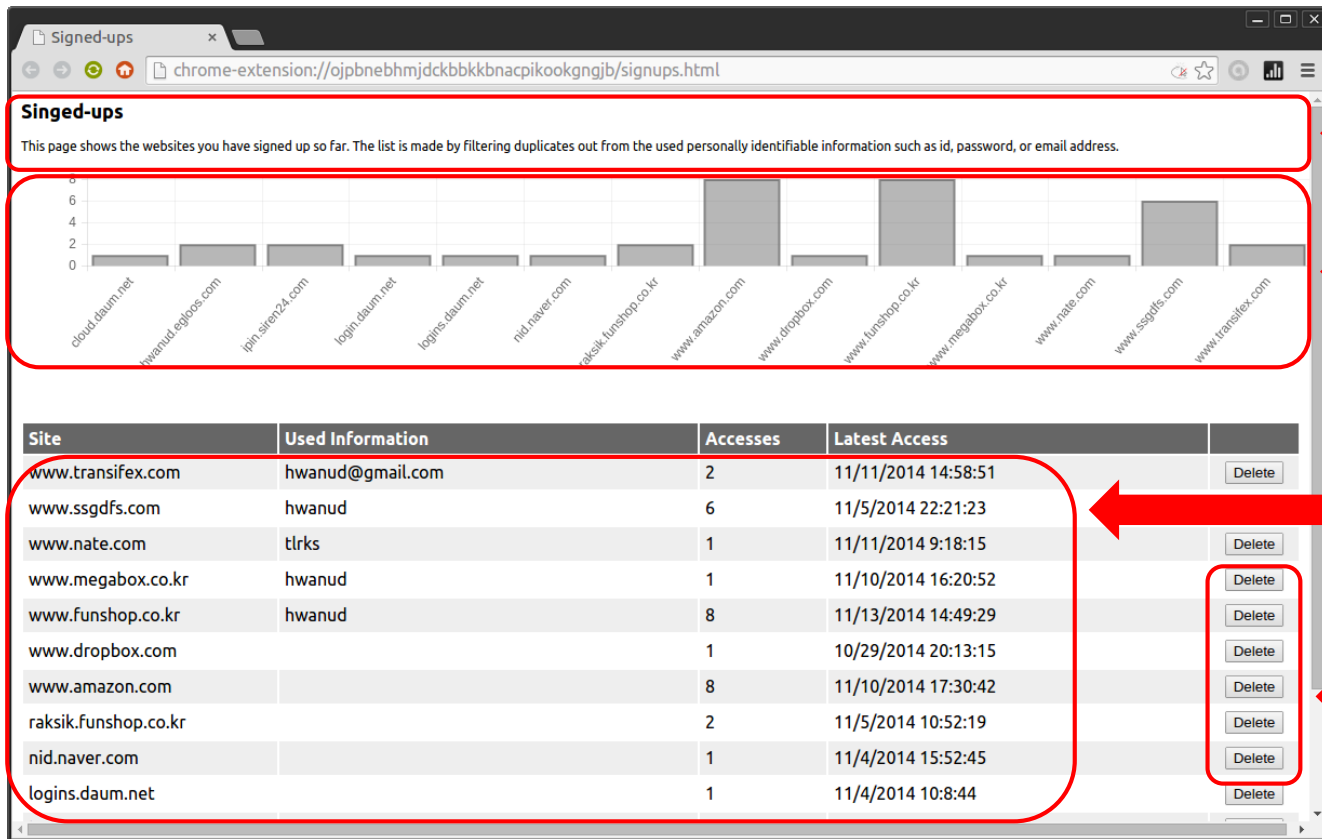


UI & Functionalities



- ❑ Signed-ups
가입한 혹은 로그인한 웹사이트 확인, 데이터 삭제
- ❑ History
가입 혹은 로그인을 통해 제출한 내 정보사용 이력 확인, 데이터 삭제
- ❑ Suspicious
정보사용과 관련한 이상행위 판단 및 확인
- ❑ Settings
데이터 전체 삭제
이상행위 판별을 위한 임계값(threshold) 설정

Signed-ups



현재 보고 있는 리포트
내용설명

차트
(사이트별 누적 접속 횟수)

정보사용이력
(정보사용한 사이트 목록 및 사용정보, 접속 횟수, 최종 접속시각)

해당 사이트에 대한
정보 삭제 버튼

History

Access History
This page shows the activities of using your personally identifiable information for web access. Note that it records the submission of your information by clicking 'submit' button or whatever. Other activities are not logged here.

Bar chart showing the number of visits to various websites. The x-axis lists websites, and the y-axis shows the number of visits (0 to 8).

Time Stamp	Site	Used Information	Type	
11/7/2014 14:10:2	www.funshop.co.kr	hwanud	Login	Delete
11/7/2014 11:51:1	login.daum.net		Login	
11/7/2014 10:14:23	hwanud.egloos.com		Login	Delete
11/7/2014 10:12:43	hwanud.egloos.com		Login	Delete
11/5/2014 22:21:23	www.ssgdfs.com	hwanud	Login	Delete
11/5/2014 22:21:12	ipin.siren24.com	hwanud, 743980	Sign-up	Delete
11/5/2014 22:20:48	www.ssgdfs.com	hwanud	Login	Delete
11/5/2014 22:20:39	www.ssgdfs.com	hwanud@gmail.com	Login	Delete
11/5/2014 22:20:32	www.ssgdfs.com	hwanud@gmail.com	Login	Delete
11/5/2014 22:20:27	www.ssgdfs.com	hwanud	Login	Delete

현재 보고 있는 리포트
내용설명

차트
(사이트별 누적 접속 횟수)

정보사용이력
(정보사용 시각, URL, 사
용한 정보, 사용 형태)

해당 사이트에 대한
정보 삭제 버튼

Suspicious

Suspicious sites

This page shows the suspicious activities pertaining to your information leakage. Note that it might be not correct. You can set the threshold of suspicious and more dangerous actions on the settings pages. "Suspicious" means that the login attempt occurs more than a certain threshold. It may not be serious but still requires to be watched carefully. "Warning" indicates possibly more dangerous situation, which means the use of your personal information exceeds the your pre-determined threshold. Please check whether there are some malicious codes on your computer if "Warning" shows up here. Default threshold for "suspicious" and "warning" is 10 and 20, respectively. The status is decided by the data that occur today.

Today: 11/13/2014

Site	Access count per Day	Status
logins.daum.net	5	Suspicious
login.yahoo.com	10	Warnig

현재 보고 있는 리포트
내용설명

정보사용 이상행위
탐지결과

Setting

현재 보고 있는 리포트
내용설명



전체 데이터 삭제
및
임계값 설정



The screenshot shows a browser window with the address bar displaying `chrome-extension://ojpbnebmjdckbbkbnacpikookgnjb/settings.html`. The page content is as follows:

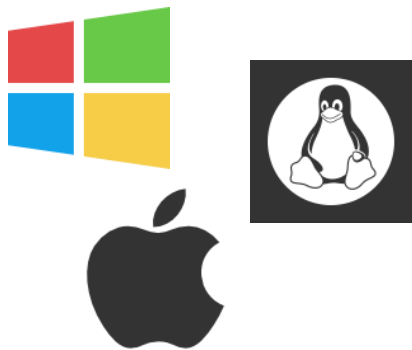
- Settings** (Header, highlighted with a red box)
- This page shows the settings for this extension. You can start or stop running SecureInfo extension in this page. In addition, you might set... Some features are not fully implemented yet. Moreover, the provided functionality can be improved in any time. They will be notified if any changes happen.
- Clear Data** (Section header, highlighted with a red box)
- Threshold** (Section header)
- Suspicious:
- Warning:
-
-
- Go to Chrome Extension page** (Section header, highlighted with a red box)
-

크롬 익스텐션 설정
페이지 바로가기
(추가구현)



Development Environment

지원 운영체제



윈도우, 리눅스, 맥,
그리고 크롬 익스텐션을
지원하는 모든 OS

개발언어



자바스크립트, JQuery,
HTML + CSS

개발툴



Chrome DEV editor,
Github, Vim, Chrome
Developer Tools

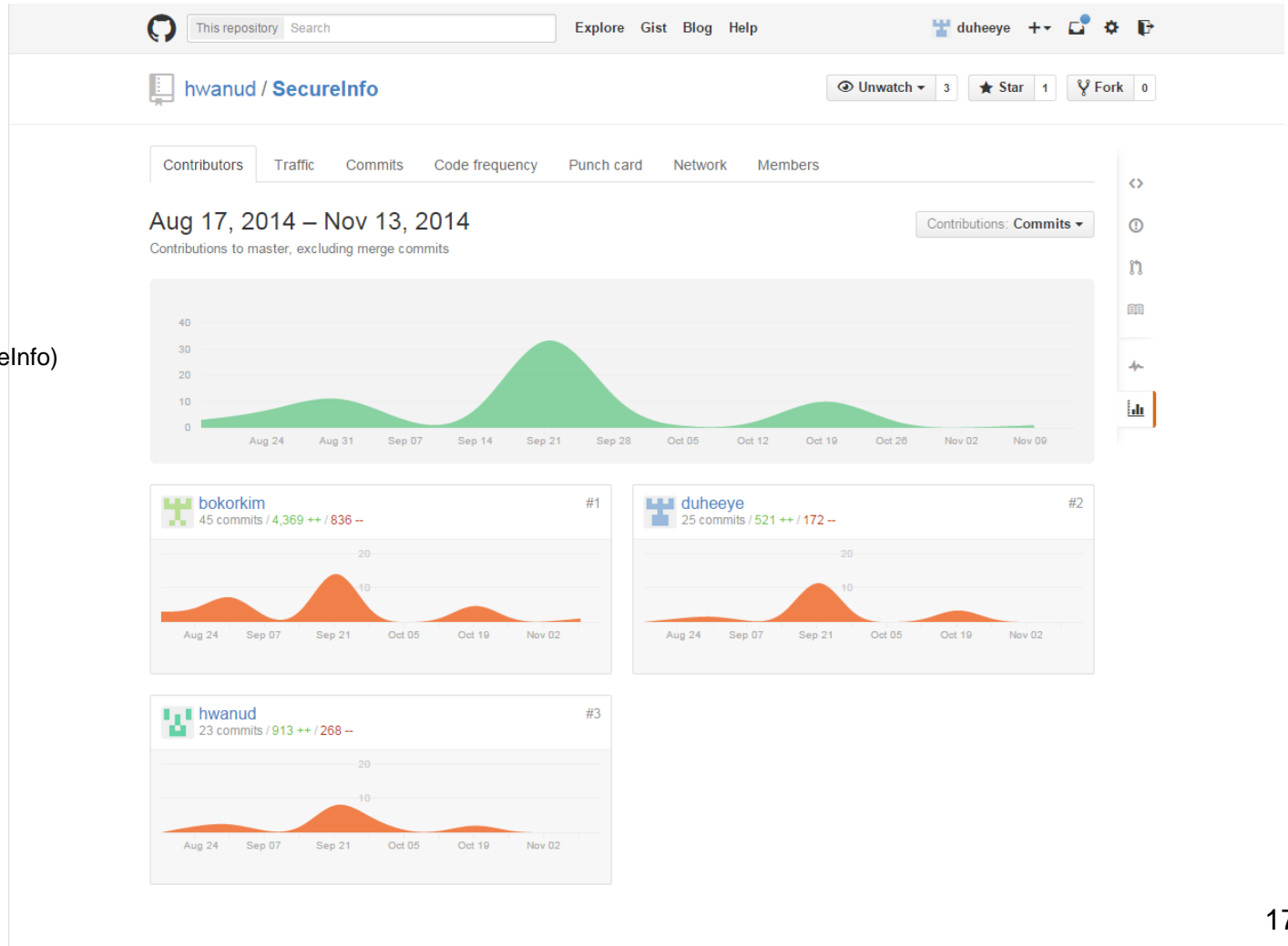
Results

- ❑ 프로그램 (구글 크롬 익스텐션)
 - ❑ 소스코드 라인 기준 개발규모 산정
 - ❑ 새로 작성한 코드 비율 = 98 %
 - ❑ 타 공개SW 코드 사용 비율 = 2 %
- ❑ 개발문서
 - ❑ 소프트웨어 설계서
 - ❑ 사용자매뉴얼
- ❑ 오픈소스커뮤니티
 - ❑ <https://github.com/hwanud/SecureInfo>

Open Source Community (Github)

- 활동내역

(<https://github.com/hwanud/SecureInfo>)



Open Source Community (Github)

- Issue 관리

(<https://github.com/hwanud/SecureInfo>)

The screenshot displays the GitHub interface for the repository `hwanud / SecureInfo`. At the top, there are navigation links for 'Explore', 'Gist', 'Blog', and 'Help', along with a search bar and user profile 'duheeye'. The repository name and statistics are shown: 'Unwatch' (3), 'Star' (1), and 'Fork' (0). Below this, there are tabs for 'Issues', 'Pull requests', 'Labels', and 'Milestones'. A search filter is set to 'is:issue is:closed'. A green 'New issue' button is visible. A 'Clear current search query, filters, and sorts' button is also present. The main content is a list of 15 issues, with 5 open and 15 closed. Each issue entry includes a checkbox, a status icon (open/closed), a title, a label (bug/enhancement), and a comment count. The issues listed are:

- #18: Initial threshold value on the settings page does not appear. (bug) 1 comment
- #17: Layout of settings.html page is not well-organized. (enhancement) 1 comment
- #15: Extension is not working on every sites. (bug, enhancement) 1 comment
- #14: Settings page does not hold the setting value. (bug, enhancement) 1 comment
- #13: table on the suspicious.html generates empty row when data is added. 1 comment
- #12: Empty id field hinders data from being stored correctly. 1 comment
- #11: The color of bar graph on the chart is sometimes too bright or dark. 1 comment
- #10: enhancing "popup.html" (enhancement) 0 comments
- #9: requires extension icon. (enhancement) 0 comments
- #8: alert() for debug still exists. 2 comments
- #7: Deletion of "url#" type of data does not affect on the "time#" type of data. (bug) 1 comment

Demo Video

시연 동영상 재생

hwanud/SecureInfo

GitHub, Inc. [US] https://github.com/hwanud/SecureInfo

This repository Search Explore Gist Blog Help hwanud

Unwatch 3 Unstar 1 Fork 0

hwanud / SecureInfo

Description Website Save or Cancel

Short description of this repository Website for this repository (optional)

90 commits 1 branch 0 releases 3 contributors

branch: master SecureInfo / +

change program name in README

hwanud authored 7 minutes ago latest commit 58f3b1518c

Chart	Empty chart is not shown anymore. A text is displayed to indicate tha...	a day ago
HistoryTable.js	insert the comment	a day ago
README	change program name in README	7 minutes ago
SignedTable.js	insert the comment	a day ago
SuspiciousTable.js	SuspiciousTable does no longer generate an empty cell.	a day ago
background.js	correct missing semi-colon in background.js and typos in README.	5 hours ago
history.html	Empty chart is not shown anymore. A text is displayed to indicate tha...	a day ago
jquery-1.11.1.min.js	get the exact form	a month ago
manifest.json	change program name	8 minutes ago
myscript.js	delete alerts for debug	a day ago
popup.html	A text, suspicious sites, in the popup menu is changed to suspicious.	7 hours ago
popup.js	Popup is added with blank pages.	26 days ago
s_icon.png	reset icon	a day ago
setting.js	adds alert mssg	a day ago
settings.html	setting.js add	a day ago
slonuns.html	Fmtbnv chart is not shown anymore. A text is displayed to indicate tha...	a day ago

Code Issues 4 Pull Requests 0 Wiki Pulse Graphs Settings

HTTPS clone URL https://github.com/ Clone in Desktop Download ZIP

You can clone with HTTPS, SSH, or Subversion.

SecureInfo

- Chart
- background.js
- history.html
- HistoryTable.js
- jquery-1.11.1.min.js
- manifest.json
- ml
- le.js
- ml
- .html
- .Table.js

SecureInfo-master.zip

다오로드 항목 모두 표시...

SecureInfo-master

파일 홈 공유 보기

SecureInfo-master 검색

이름	수정된 날짜	유형	크기
Chart	2014-09-28 오후...	파일 폴더	
background.js	2014-09-28 오전...	JavaScript 파일	3KB
history.html	2014-09-28 오전...	HTML 파일	2KB
HistoryTable.js	2014-09-28 오전...	JavaScript 파일	4KB
jquery-1.11.1.min.js	2014-09-28 오전...	JavaScript 파일	94KB
manifest.json	2014-09-28 오전...	JSON 파일	1KB
myscript.js	2014-09-28 오전...	JavaScript 파일	2KB
popup.html	2014-09-28 오전...	HTML 파일	1KB
popup.js	2014-09-28 오전...	JavaScript 파일	1KB
README	2014-09-28 오전...	파일	3KB
s_icon.png	2014-09-28 오전...	PNG 파일	6KB
setting.js	2014-09-28 오전...	JavaScript 파일	1KB
settings.html	2014-09-28 오전...	HTML 파일	1KB
SignedTable.js	2014-09-28 오전...	JavaScript 파일	4KB
signups.html	2014-09-28 오전...	HTML 파일	2KB
suspicious.html	2014-09-28 오전...	HTML 파일	2KB
SuspiciousTable.js	2014-09-28 오전...	JavaScript 파일	4KB

17개 항목 17개 항목 선택함

SecureInfo

Chart

- background.js
- history.html
- HistoryTable.js
- jquery-1.11.1.min.js
- manifest.json
- ml
- ml
- ml
- .html
- Tablejs

hwanud/Secureinfo x 확장 프로그램 x

chrome://extensions

Chrome 확장 프로그램

개발자 모드

받은 기록
확장 프로그램
설정
정보

입속해제된 확장 프로그램 로드... 확장 프로그램 압력... 지금 확장 프로그램 업데이트

새로운 Chrome 앱 및 확장 프로그램 개발자 도구를 사용해 보세요.

- avast! Online Security** 9.0.2022.121 사용 설정됨
 - Avast Browser Security and Web Reputation Plugin. [권한 웹사이트 방문](#)
 - ID: gomekmidlodglbbmalcneegeiacbdmki
 - 조회 내용 검사: [백그라운드 페이지](#)
 - 시크릿 모드에서 허용 [출신](#)
- Chrome Dev Editor (developer preview)** 0.15.3071 사용 설정됨
 - Chrome Dev Editor is a developer tool for building apps on the Chrome platform. [권한](#)
 - [웹사이트 방문](#)
 - ID: pnoffddpippgcfjdmbhmkofpnaalpg
 - 조회 내용 검사: [백그라운드 페이지](#) [spark.polymer.html](#)
 - 시크릿 모드에서 허용
- Gliffy Diagrams** 1.0.28 사용 설정됨
 - Diagrams Made Easy. [권한](#) [웹사이트 방문](#)
 - ID: bhmiclclplefnlapjmmngmkkkpfad
 - 조회 내용 검사: [백그라운드 페이지 \(비활성\)](#)
 - 시크릿 모드에서 허용
- Google Keep - 메모 및 목록** 2.0.14395.1218 사용 설정됨
 - 떠오르는 생각을 바로 기록해 두었다가 언제 어디서든 꺼내 보세요. [권한](#) [웹사이트 방문](#)
 - ID: hmjkmjkepdjihoojdykfohbdgmmhki
 - 조회 내용 검사: [백그라운드 페이지 \(비활성\)](#)
 - 시크릿 모드에서 허용
- Google 문서도구** 0.7 사용 설정됨
 - 문서 만들기 및 수정. [권한](#) [웹사이트 방문](#)
 - ID: aohghmighlieainnegkcjnflokake
 - 시크릿 모드에서 허용

Secureinfo-master.zip Secureinfo-master.zip

다운로드 항목 모두 표시...

폴더 찾아보기

확장 프로그램 디렉토리를 선택합니다.

- 폴더 그룹
- ihkim
- 내 PC
- 라이브러리
- 네트워크
- backup
- Secureinfo-master
 - Chart

폴더(F): Secureinfo-master

새 폴더 만들기(M) **확인** 취소

hwanud/SecureInfo x

GitHub, Inc. [US] https://github.com/hwanud/SecureInfo

This repository Search Explore Gist Blog Help hwanud + -

Signed-ups History Suspicious Settings

hwanud / SecureInfo Unwatch 3 Unstar 1

Description Website

Short description of this repository Website for this repository (optional) Save or Cancel

90 commits 1 branch 0 releases 3 contributors

branch: master SecureInfo / +

change program name in README

hwanud authored 7 minutes ago latest commit 58f3b1518c

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background.js	correct missing semi-colon in background.js and typos in README.	5 hours ago
history.html	Empty chart is not shown anymore. A text is displayed to indicate tha...	a day ago
jquery-1.11.1.min.js	get the exact form	a month ago
manifest.json	change program name	8 minutes ago
mymcrypt.js	delete alerts for debug	a day ago
popup.html	A text, suspicious sites, in the popup menu is changed to suspicious.	7 hours ago
popup.js	Popup is added with blank pages.	26 days ago
s_icon.png	reset icon	a day ago
setting.js	adds alert mssg	a day ago
settings.html	setting.js add	a day ago
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Code Issues 4 Pull Requests 0 Wiki Pulse Graphs Settings

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Clone in Desktop Download ZIP

SecureInfo

- Chart
- background.js
- history.html
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- jquery-1.11.1.min.js
- manifest.json
- ml
- le.js
- ml
- .html
- Table.js

SecureInfo-master.zip SecureInfo-master.zip 다운로드 항목 모두 표시...

hwanud/Secureinfo x Signed-ups x History x Suspicious sites x Settings x Welcome to Facebook - x

https://www.facebook.com

facebook

Email or Phone: abc@abc.com | Password: **** | [Log In](#)

Keep me logged in | [Forgot your password?](#)

Sign Up

It's free and always will be.

Connect with friends and the world around you on Facebook.

See photos and updates from friends in News Feed.

Share what's new in your life on your Timeline.

Find more of what you're looking for with Graph Search.

First name: Last name:

Email:

Re-enter email:

New password:

Birthday

Month: Day: Year: Why do I need to provide my birthday?

Female Male

By clicking Sign Up, you agree to our [Terms](#) and that you have read our [Data Use Policy](#), including our [Cookie Use](#).

Sign Up

[Create a Page for a celebrity, band or business.](#)

한국어 English (US) Español Português (Brasil) Français (France) Deutsch Italiano العربية हिन्दी 中文(简体) ...

Mobile Find Friends Badges People Pages Places Games Locations About
Create Ad Create Page Developers Careers Privacy Cookies Terms Help

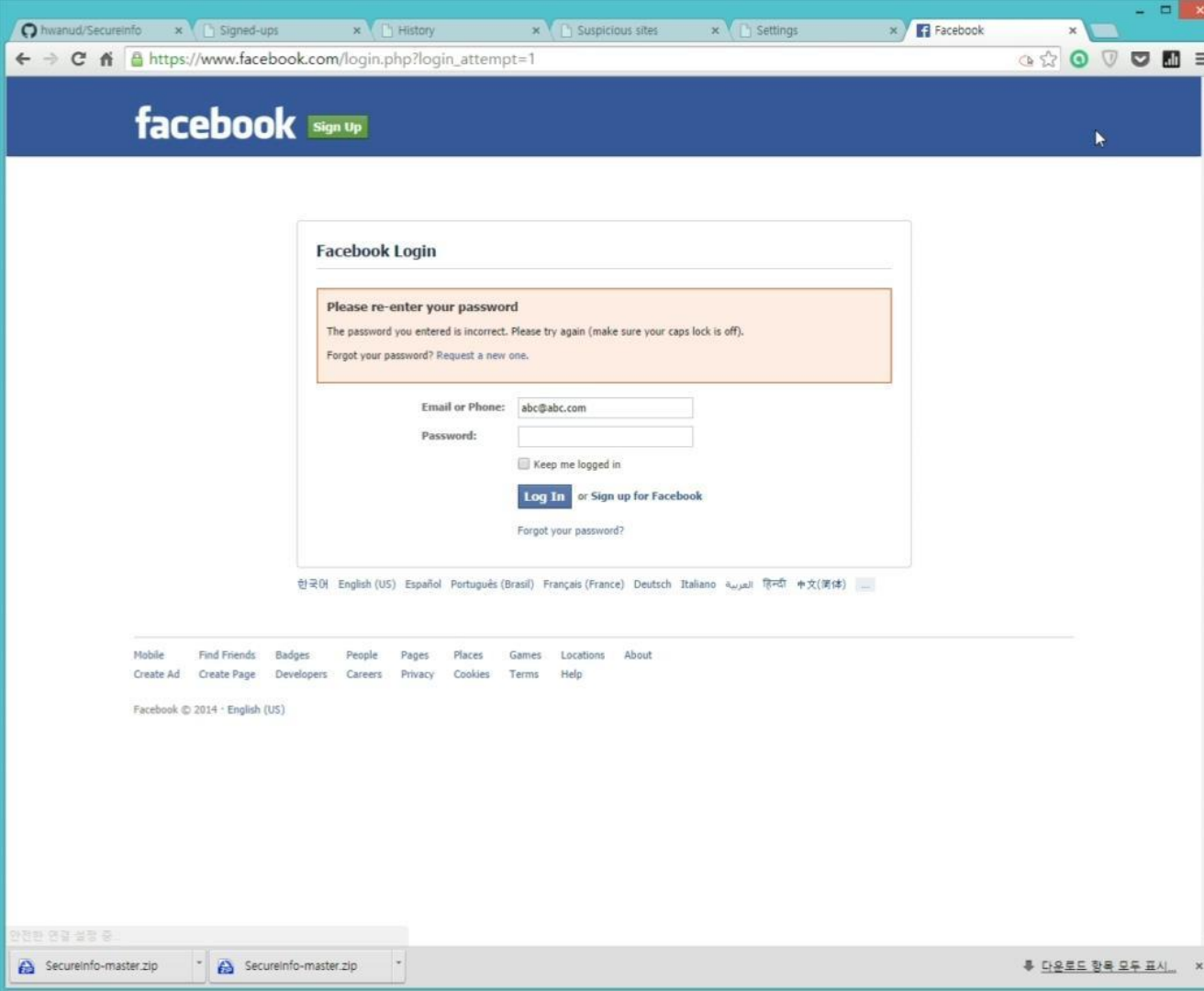
Facebook © 2014 · English (US)

Filter

SecureInfo

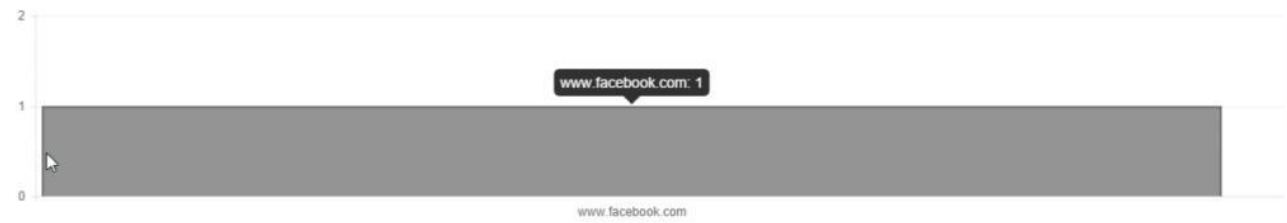
- Chart
- background.js
- history.html
- HistoryTable.js
- query-1.11.1.min.js
- manifest.json

ml
le.js
ml
.html
.Table.js



Singed-ups

This page shows the websites you have signed up so far. The list is made by filtering duplicates out from the used personally identifiable information such as id, password, or email address.



Site	Used Information	Accesses	Latest Access	
www.facebook.com	abc@abc.com	1	9/28/2014 23:43:46	Delete

SecureInfo

- Chart
- background.js
- history.html
- HistoryTable.js
- query-1.11.1.min.js
- manifest.json

ml

ml

le.js

ml

.html

.Table.js

Access History

This page shows the activities of using your personally identifiable information for web access. Note that it records the submission of your information by clicking 'submit' button or whatever. Other activities are not logged here.



Time Stamp	Site	Used Information	
9/28/2014 23:43:46	www.facebook.com	abc@abc.com	<input type="button" value="Delete"/>

Filter

- SecureInfo
 - Chart
 - background.js
 - history.html
 - HistoryTable.js
 - query-1.11.1.min.js
 - manifest.json

ml
le.js
ml
.html
Table.js

hwanud/SecureInfo x Signed-ups x History x Suspicious sites x Settings x Facebook x

chrome-extension://kdbcacjobehdiaglbbgnhhplndkbpbn/suspicious.html

Suspicious sites

This page shows the suspicious activities pertaining to your information leakage. Note that it might be not correct. You can set the threshold of suspicious and more dangerous actions on the settings pages.

"**Suspicious**" means that the login attempt occurs more than a certain threshold. It may not be serious but still requires to be watched carefully.

"**Warning**" indicates possibly more dangerous situation, which means the use of your personal information exceeds the your pre-determined threshold. Please check whether there are some malicious codes on your computer if "Warning" shows up here.

Default threshold for "suspicious" and "warning" is 10 and 20, respectively.

The status is decided by the data that occur today.

Today: 9/28/2014

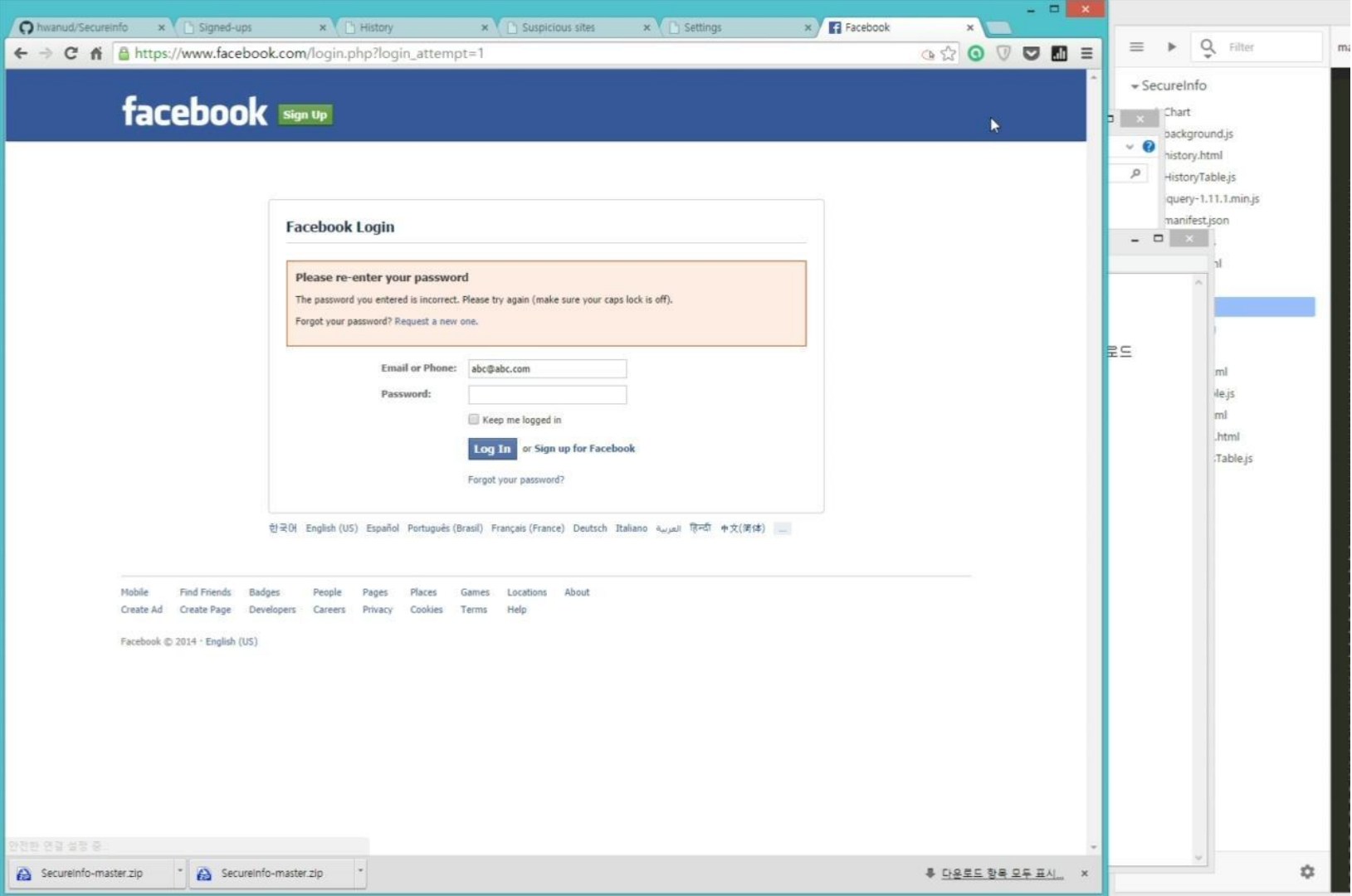
Site	Access count per Day	Status
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SecureInfo-master.zip SecureInfo-master.zip 다운로드 항목 모두 표시...

Filter

SecureInfo

- Chart
- background.js
- history.html
- HistoryTable.js
- query-1.11.1.min.js
- manifest.json



Suspicious sites

This page shows the suspicious activities pertaining to your information leakage. Note that it might be not correct. You can set the threshold of suspicious and more dangerous actions on the settings pages.

"Suspicious" means that the login attempt occurs more than a certain threshold. It may not be serious but still requires to be watched carefully.
"Warning" indicates possibly more dangerous situation, which means the use of your personal information exceeds the your pre-determined threshold. Please check whether there are some malicious codes on your computer if "Warning" shows up here.
 Default threshold for "suspicious" and "warning" is 10 and 20, respectively.
 The status is decided by the data that occur today.

Today: 9/28/2014

Site	Access count per Day	Status
www.facebook.com	5	Suspicious

Filter

SecureInfo

- Chart
- background.js
- history.html
- HistoryTable.js
- query-1.11.1.min.js
- manifest.json

nl

ml

le.js

ml

.html

Table.js

다운로드 항목 모두 표시

Current Issues

□ 로그 저장이 정상적으로 동작하지 않는 사이트 존재

로그 저장 가능한 웹페이지* 구성

- <form> 태그가 정상적으로 존재하는 로그인/가입 폼
- <input type=submit>, <input type=image>, <button type=submit>의 형태로 submit이 발생하는 사이트들

로그 저장 불가능한 웹페이지 구성

- <form> 태그가 존재하지 않는 경우
- <form> 태그의 submit을 자바스크립트 등으로 수행하는 경우 (input type 태그를 이용하지 않는 경우)

* 예시: accounts.google.com, cymember.cyworld.com, demo.redmine.org, wordpress.com, ssl-kr.hotels.com, www.cjone.com, www.facebook.com, www.funshop.co.kr, www.linkedin.com, www.amazon.com, ipin.siren24.com, nid.naver.com, logins.daum.net, cloud.daum.net, www.megabox.com

Planned Enhancements

더 많은 웹서비스에서 로그인
가능하도록 개선

- 다양한 로그인/회원가입 행위
탐지 알고리즘 추가

이상행위 탐지 부분 발전 가능성

- 사용자 로그인/가입 등의 패턴
파악 (learning phase)을 통해
임계값 설정 없이 자동으로
위험 수준 판단하도록 개선
가능

QnA