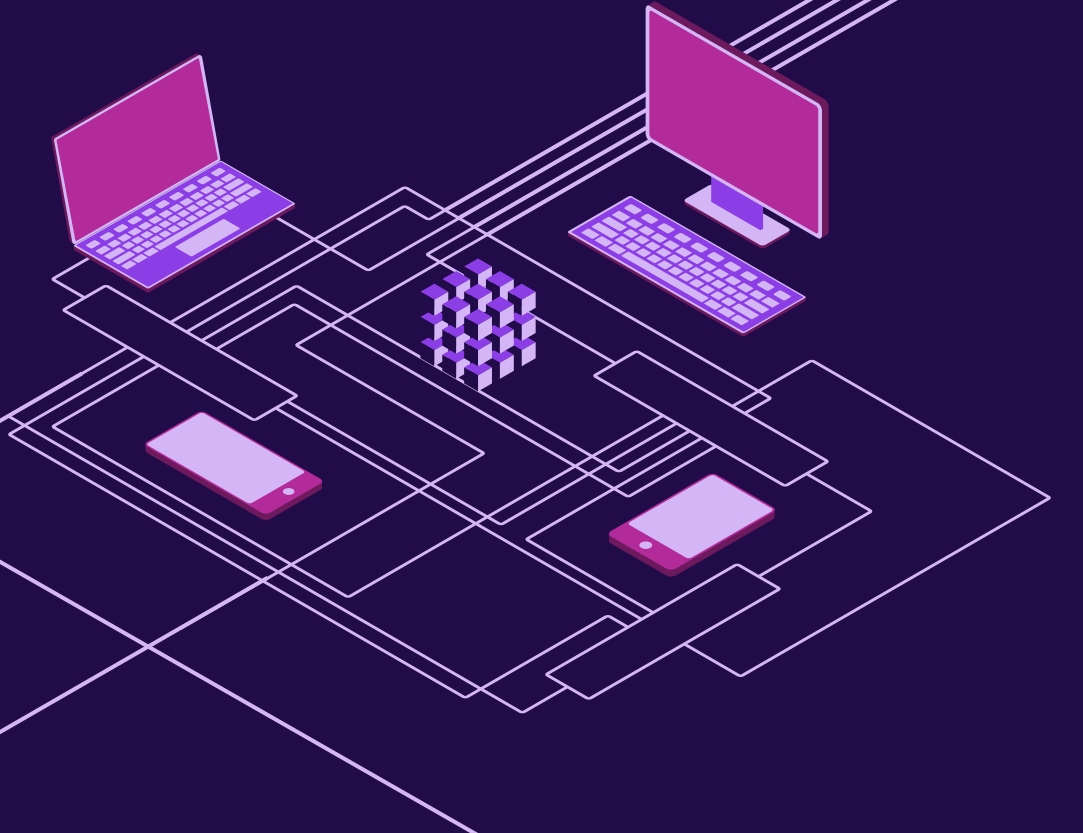


Chrome Extensions

Pre-HackHERS Series
2/12/2021



SOME PARTS OF AN EXTENSION

01

Manifest

Provides necessary info about your extension.

03

Content Script

Interacts with the web pages themselves.

02

Background Script

Interacts with the background (i.e. windows, tabs, etc.)

04

Popup

What appears when you click on the extension icon.

LET'S MAKE SOMETHING!

I procrastinate too much! There are some websites that I spend way too much time browsing, and I need to curb my habits. I want to develop a Chrome extension to track my website visits and encourage good studying practices.

Specifically, whenever I visit a particular site, I want Chrome to notify me with a reminder to study. Moreover, I want all the images on the website to black out to prevent me from browsing. Finally, I want to maintain a log of all my visits that I can access easily.

LET'S MAKE SOMETHING!

Tasks:

1. **Flag URL changes**
 - a. Set up a function to detect URL changes (Tabs API)
 - b. Check the specific website
2. **Display reminder (Notifications API)**
 - a. Specify options
 - b. Create notification
3. **Black out images**
 - a. Send a message to `contentScript.js` from `background.js`
 - b. Receive and process message in `contentScript.js`
 - c. Modify images
4. **Display timestamps**
 - a. Store new visits into an array (Storage API)
 - b. Send a message to `popup.js` from `background.js`
 - c. Receive and process message in `contentScript.js`
 - d. Modify HTML to display timestamps

GETTING STARTED

Clone <https://github.com/SamanthaLLee/PreHackHERS-Chrome-Extension>

Alternatively, open a text editor of your choice, and make a directory that has these four files:

- `manifest.json`
- `popup.html`
- `popup.js`
- `background.js`
- `contentScript.js`

What are these files for?

- The manifest provides important information about your extension (name, permissions, scripts, etc.)
- The popup files affect the appearance of the extension's window in the browser
- The background script manages and monitors browser events like navigating to a new page, removing a bookmark, or closing a tab
- The content script can interact with the content of the websites you visit

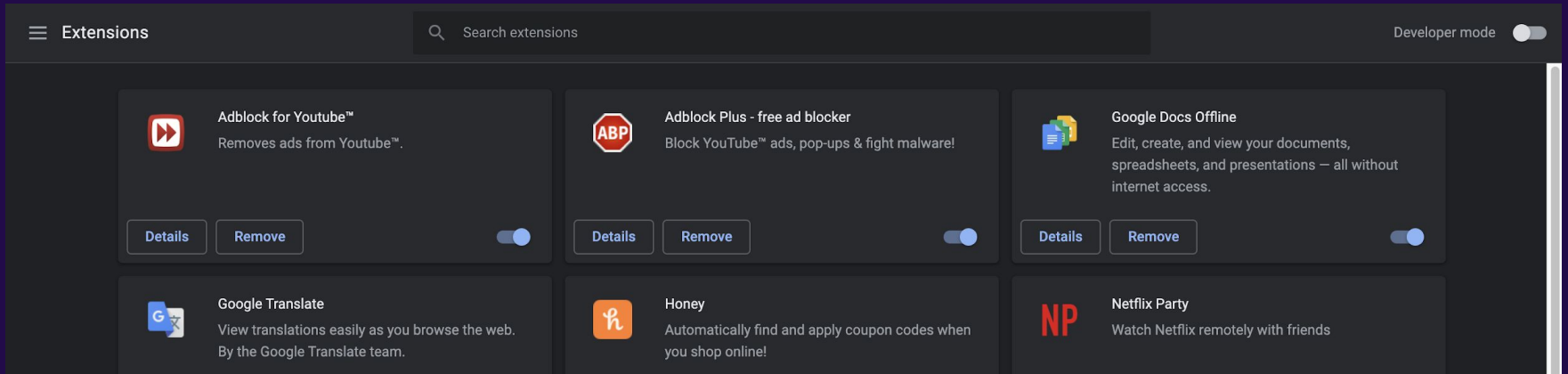
POPULATING THE MANIFEST

- Basics: name, version, description
- “manifest_version” is 2 (most recent)
- Permissions allow you to use specific Chrome APIs
- The “background” section specifies background scripts to use and whether the script should be persistent (we will set it to false, as a non-persistent background script is inactive until an event occurs)
- Use the “browser action” section to specify popup details

GETTING STARTED

Go to *chrome://extensions*

- Turn **Developer Mode** on (see top left corner for toggle)
- You should see three buttons: **Load unpacked**, **Pack extension**, and **Update**
- Once you've created your directory, click **Load unpacked** and select your the folder containing your files



LET'S START CODING

DEBUGGING

`console.log()` is your friend

BACKGROUND

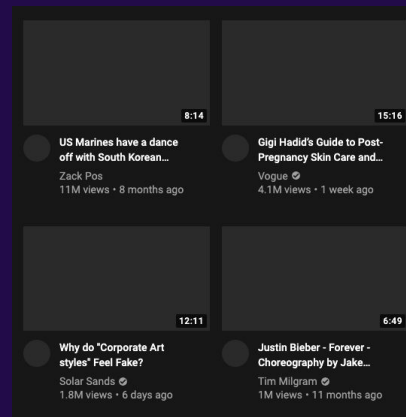
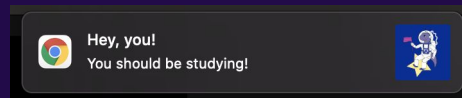
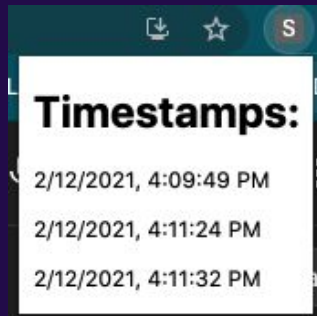
- > Go to
`chrome://extensions`
- > Find your extension
- > Background page
- > Console

POPUP

- > Click extension icon
- > Right click in the popup box
- > Inspect
- > Console

CONTENT

- > Go to any content page
- > Right click anywhere
- > Inspect
- > Console



Popup

Notification

Website

FINAL RESULT

NOW WHAT?

This is a fairly basic extensions. What other features can we add or modify? Some questions to ask:

- Do we want to block every single page on our chosen website?
- Are there any bugs with the current implementation?
- What corner cases haven't we considered?
- How can we use the timestamps?

Check out the Chrome API documentation for inspiration:

- <https://developer.chrome.com/docs/extensions/reference/>

QUESTIONS?

THANKS FOR JOINING!

Hope you all stay safe & happy! Join us
next week for an **Intro to React** workshop!



<https://hackhers-2021.devpost.com/>



<https://ruhackhers.org/>

