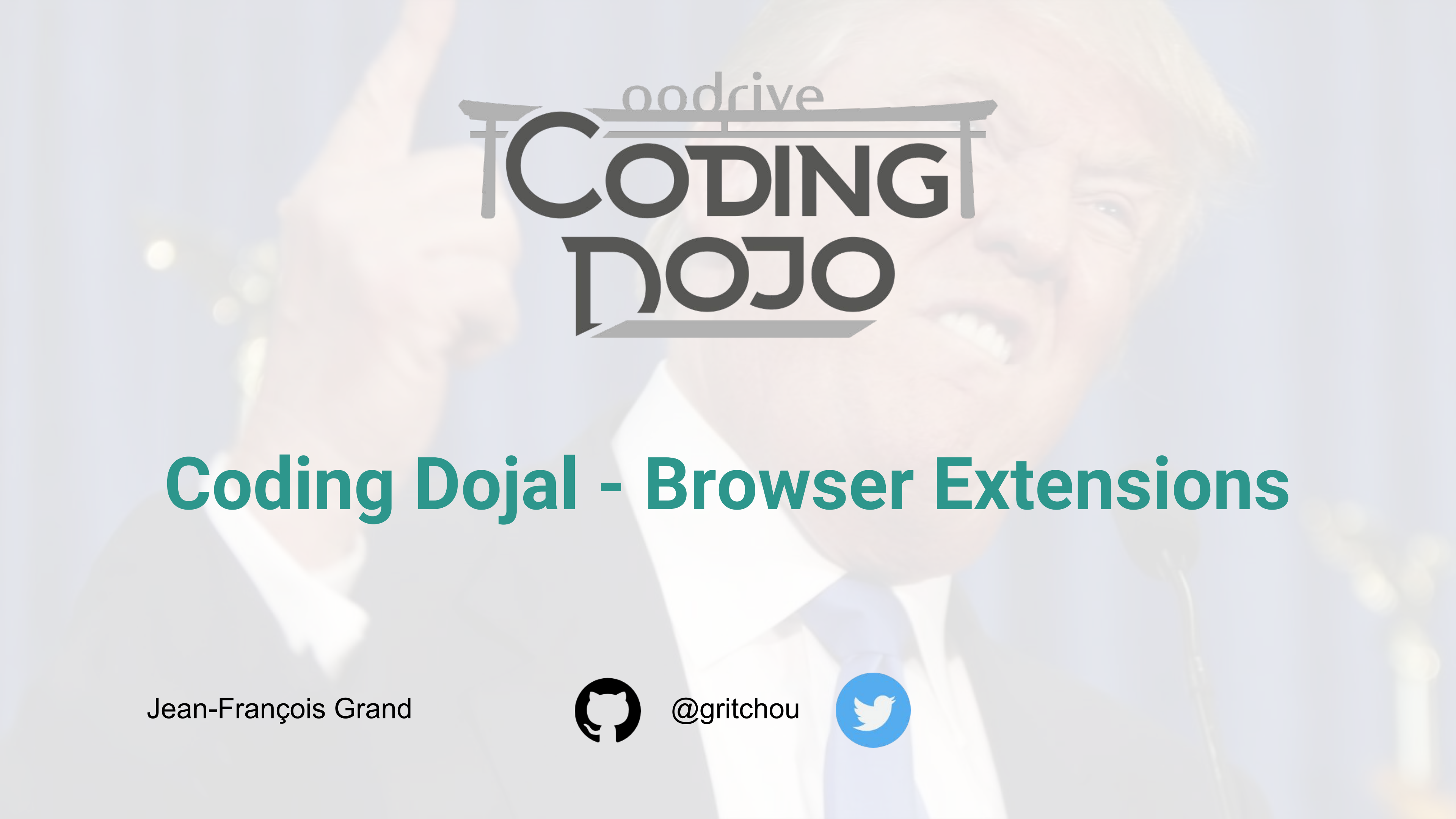


oodrive

CODING DOJO

Coding Dojal - Browser Extensions

Jean-François Grand

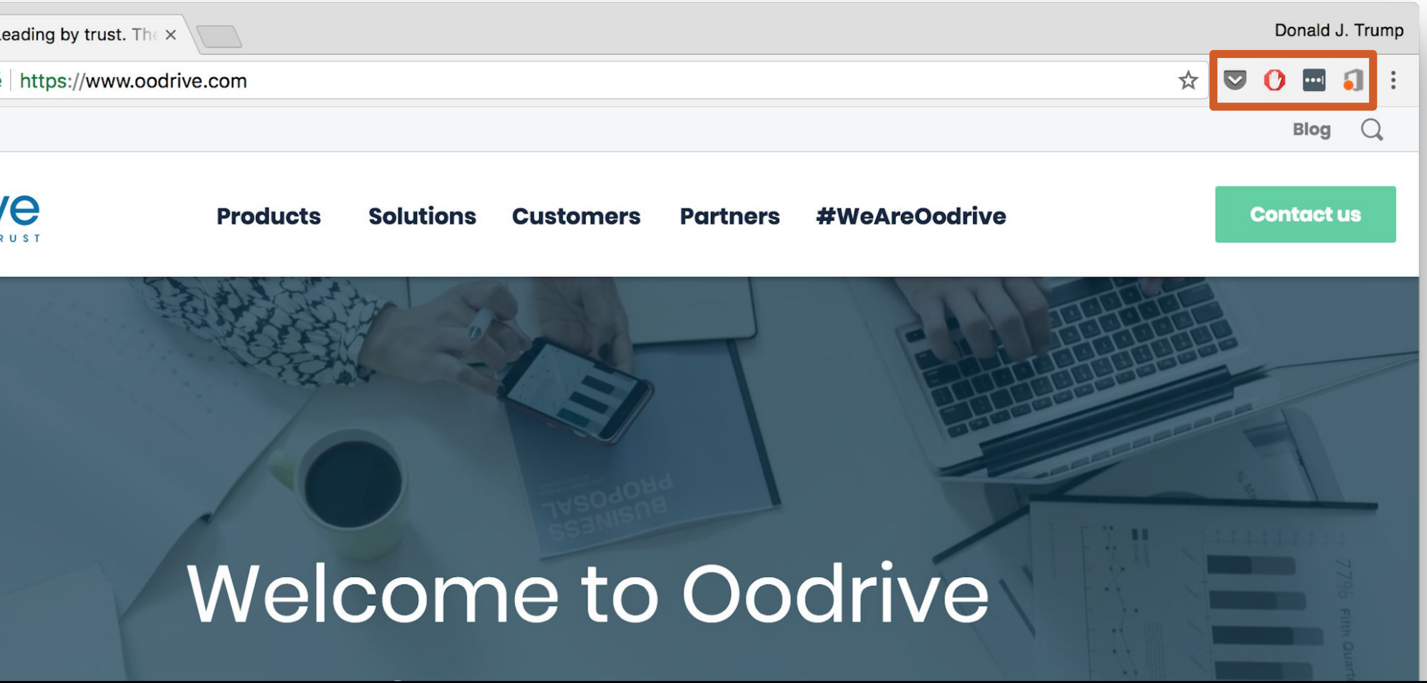
@gritchou

Summary

Browser extensions?

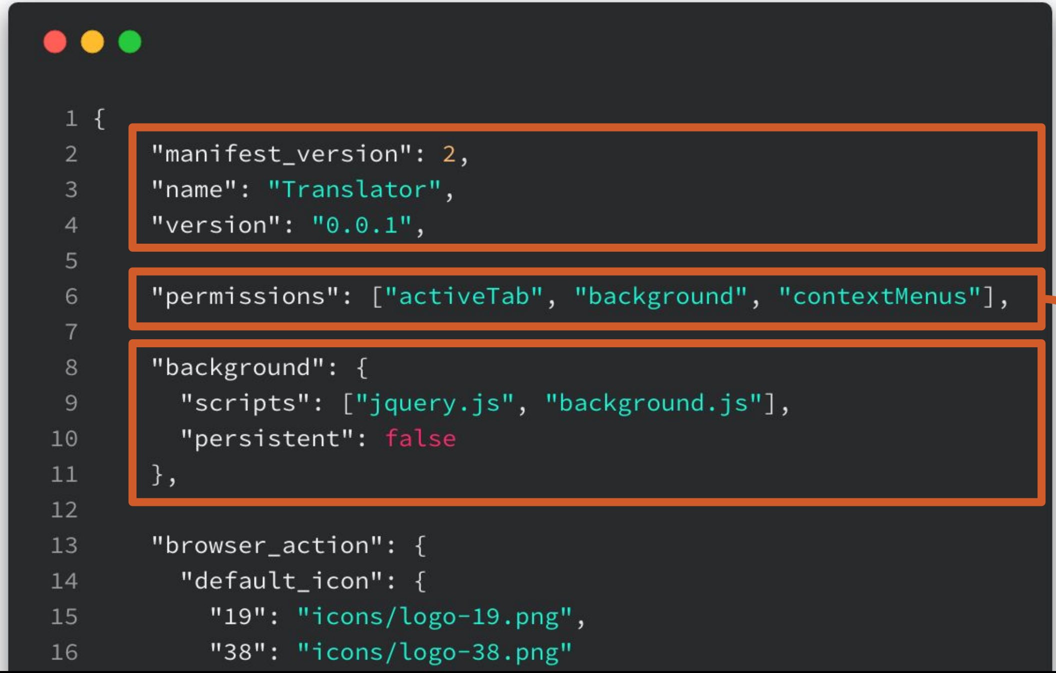
1. Hello World
2. Background
3. API
4. Options page
5. Popup
6. Content script

What are Browser Extensions?

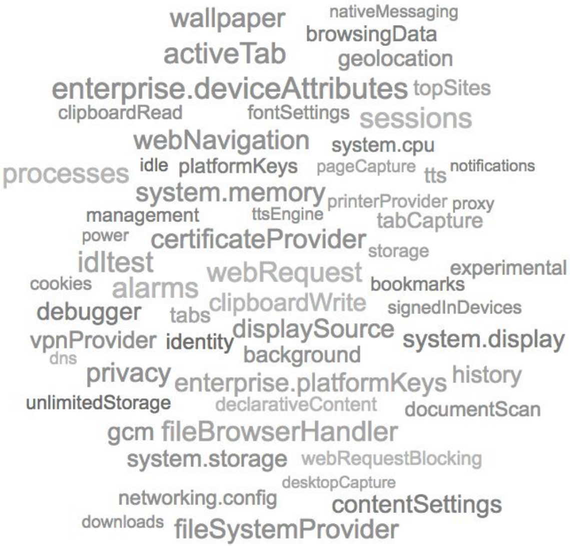


Dissecting a Browser Extension (alive!)

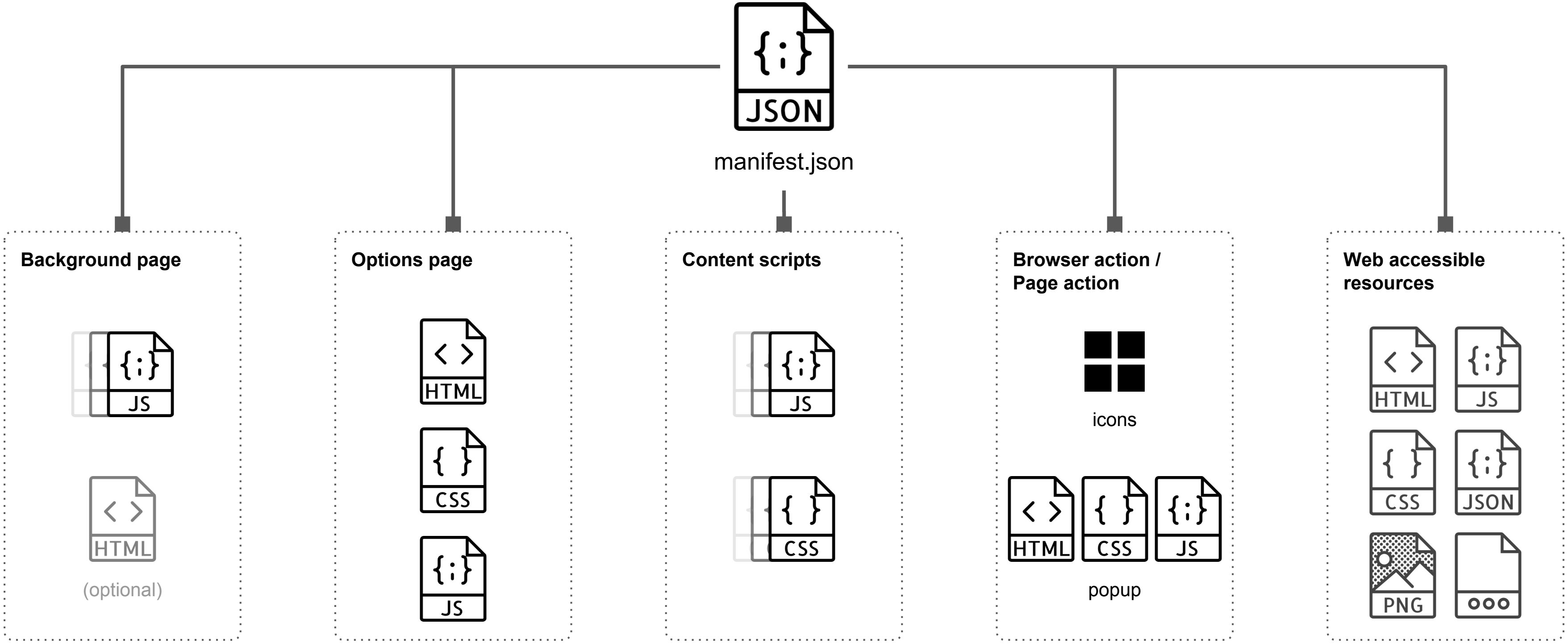
Structure of manifest.json



```
{
  "manifest_version": 2,
  "name": "Translator",
  "version": "0.0.1",

  "permissions": ["activeTab", "background", "contextMenus"],

  "background": {
    "scripts": ["jquery.js", "background.js"],
    "persistent": false
  },

  "browser_action": {
    "default_icon": {
      "19": "icons/logo-19.png",
      "38": "icons/logo-38.png"
```

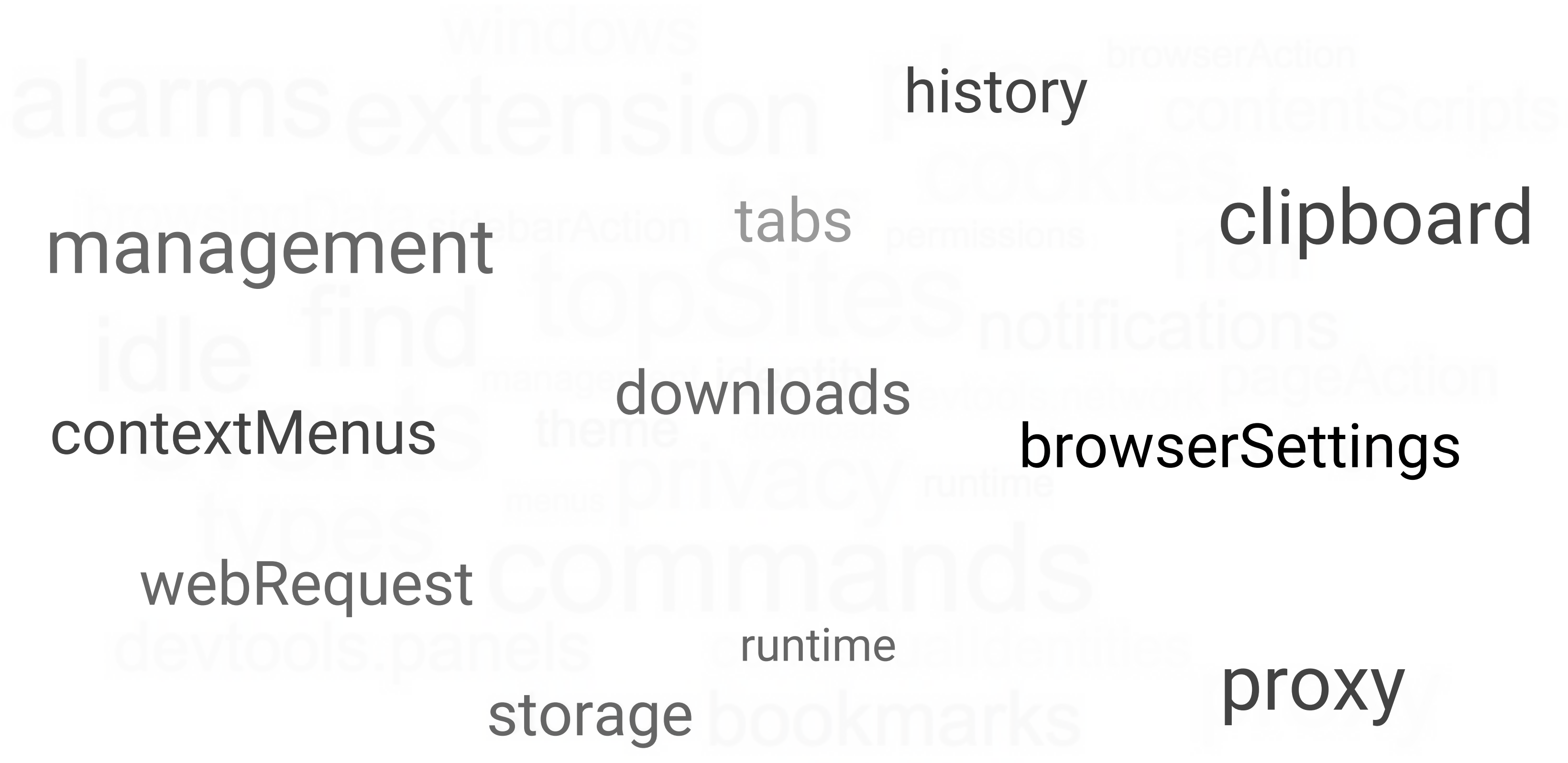


Dissecting a Browser Extension (alive!)



Adapted from https://developer.mozilla.org/en-US/Add-ons/WebExtensions/Anatomy_of_a_WebExtension

API



history

management

tabs

clipboard

downloads

contextMenus

browserSettings

webRequest

runtime

storage

proxy

API

history

management

tabs

clipboard

downloads

contextMenus

browserSettings

webRequest

runtime

proxy

storage

Chrome

Namespace chrome.* with callback functions

```
chrome.tabs.query({ active: true }, (tabs) => {
        …
});

chrome.tabs.query({ active: true }, function(tabs) {
        …
});
```

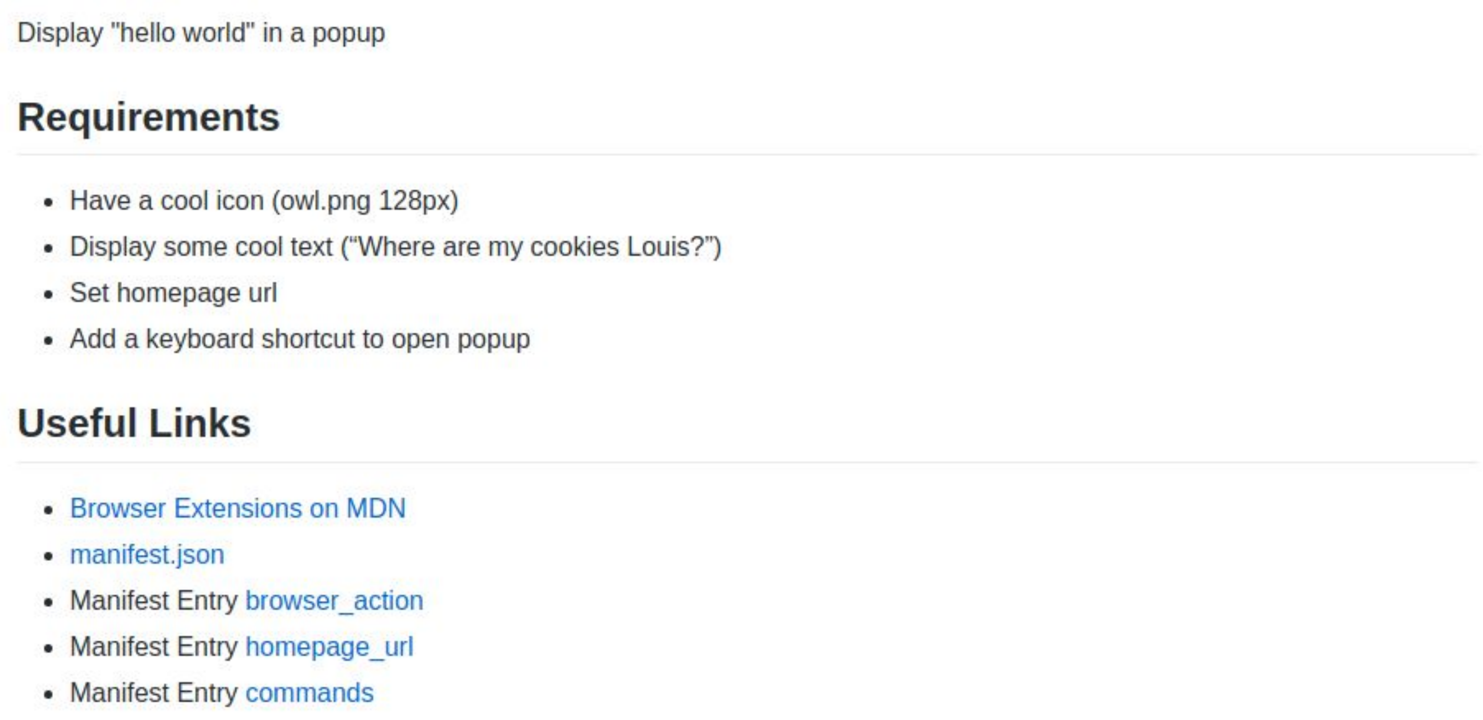
- Browser Extensions MDN
- Chrome API

Repository

```
chrome.tabs.query({ active: true }, (tabs) => {
        ...
});

chrome.tabs.query({ active: true }, function(tabs) {
        ...
});
```

- Browser Extensions MDN
- Chrome API

Exercice 1 - Hello World



Display "hello world" in a popup

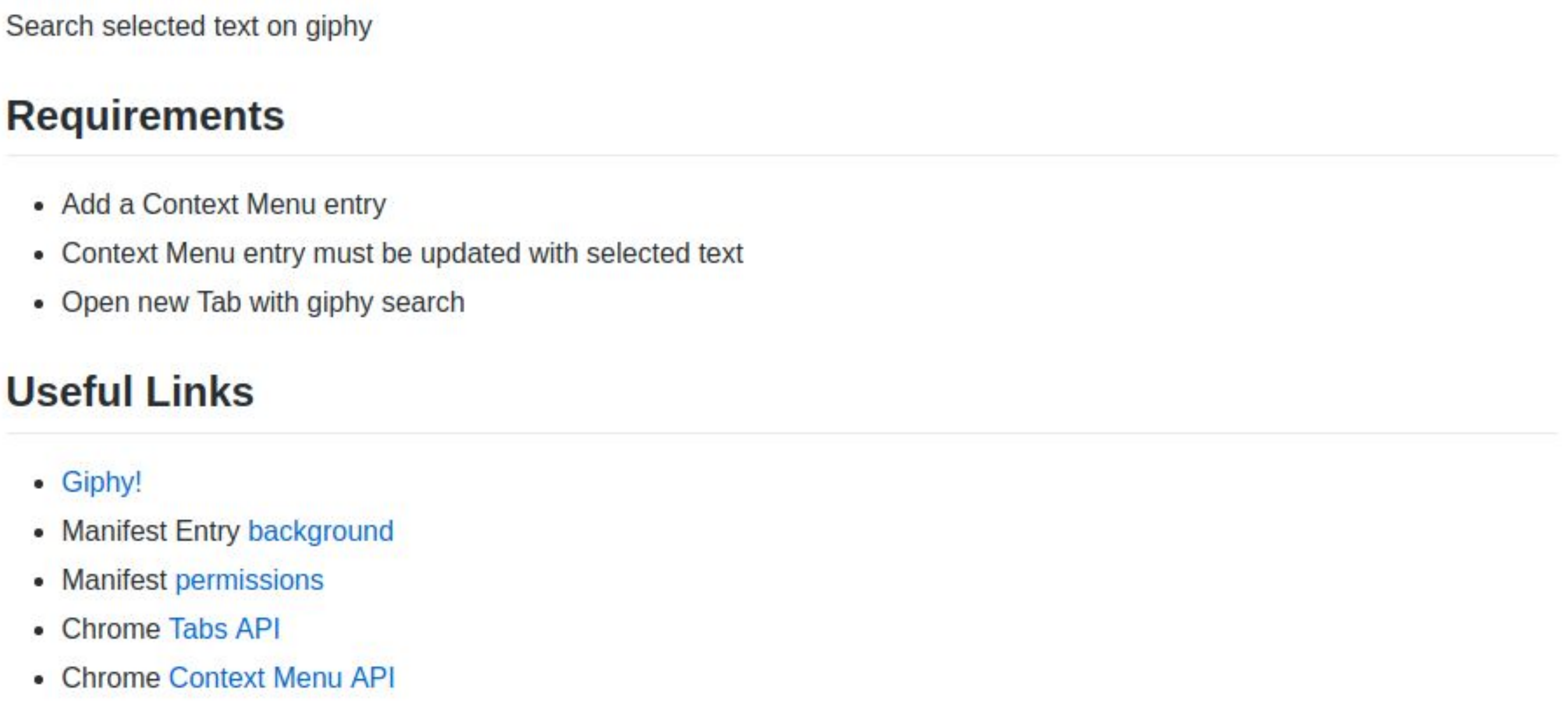
Requirements

- Have a cool icon (owl.png 128px)
- Display some cool text (“Where are my cookies Louis?”)
- Set homepage url
- Add a keyboard shortcut to open popup

Useful Links

- Browser Extensions on MDN
- manifest.json
- Manifest Entry browser_action
- Manifest Entry homepage_url
- Manifest Entry commands

Exercice 2 - Background Script & Context Menu



Search selected text on giphy

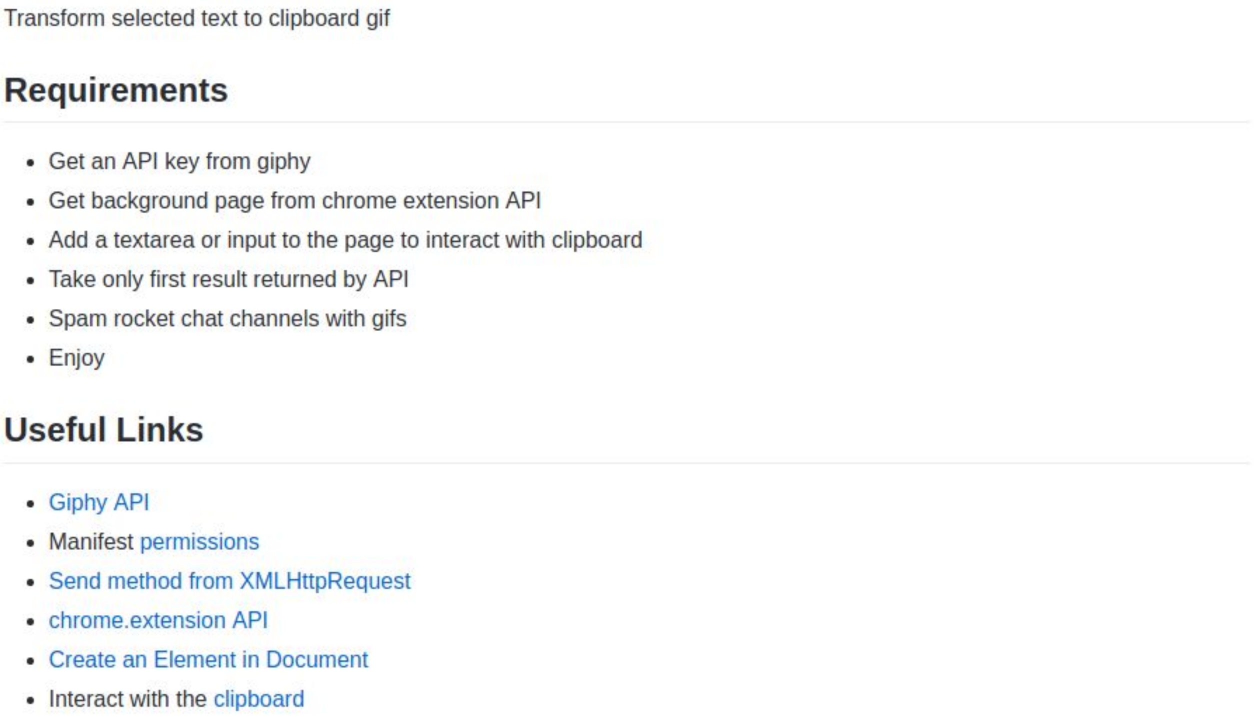
Requirements

- Add a Context Menu entry
- Context Menu entry must be updated with selected text
- Open new Tab with giphy search

Useful Links

- Giphy!
- Manifest Entry background
- Manifest permissions
- Chrome Tabs API
- Chrome Context Menu API

Exercice 3 - From Giphy API to clipboard



Transform selected text to clipboard gif

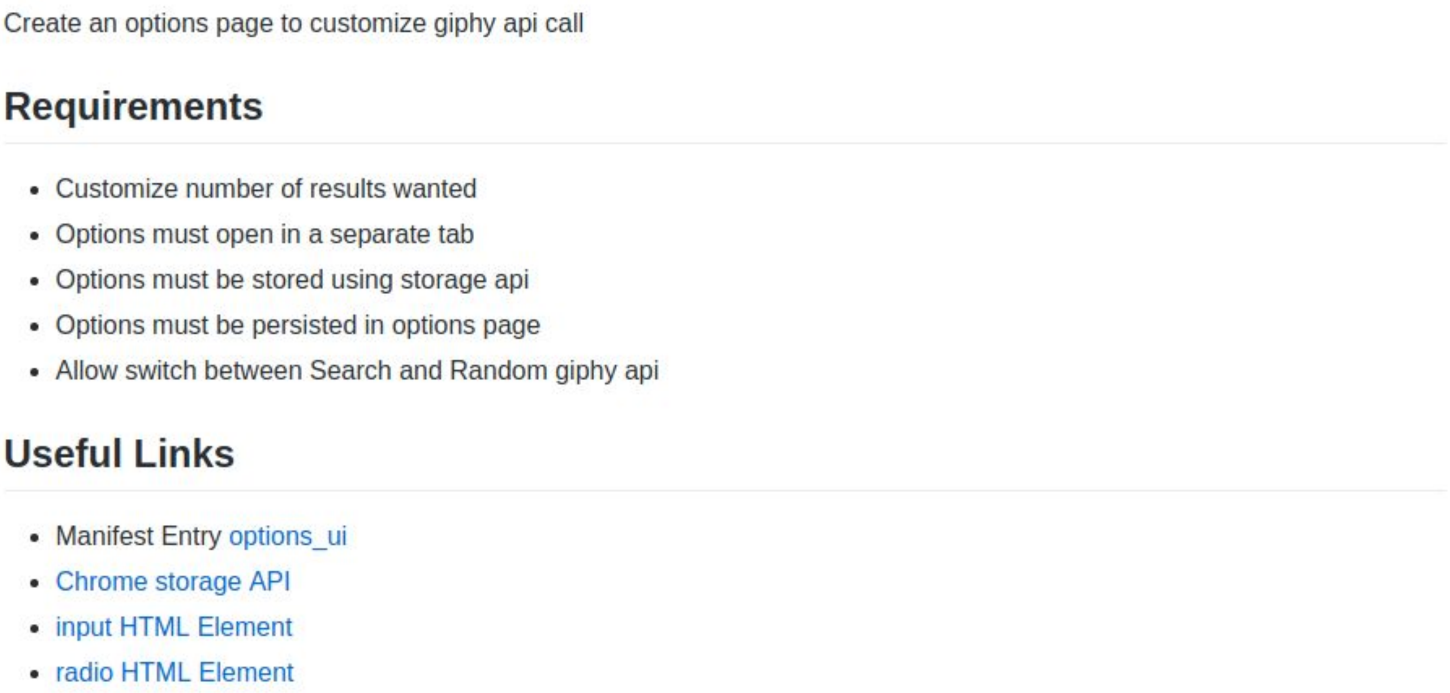
Requirements

- Get an API key from giphy
- Get background page from chrome extension API
- Add a textarea or input to the page to interact with clipboard
- Take only first result returned by API
- Spam rocket chat channels with gifs
- Enjoy

Useful Links

- Giphy API
- Manifest permissions
- Send method from XMLHttpRequest
- chrome.extension API
- Create an Element in Document
- Interact with the clipboard

Exercice 4 - Options Page



Create an options page to customize giphy api call

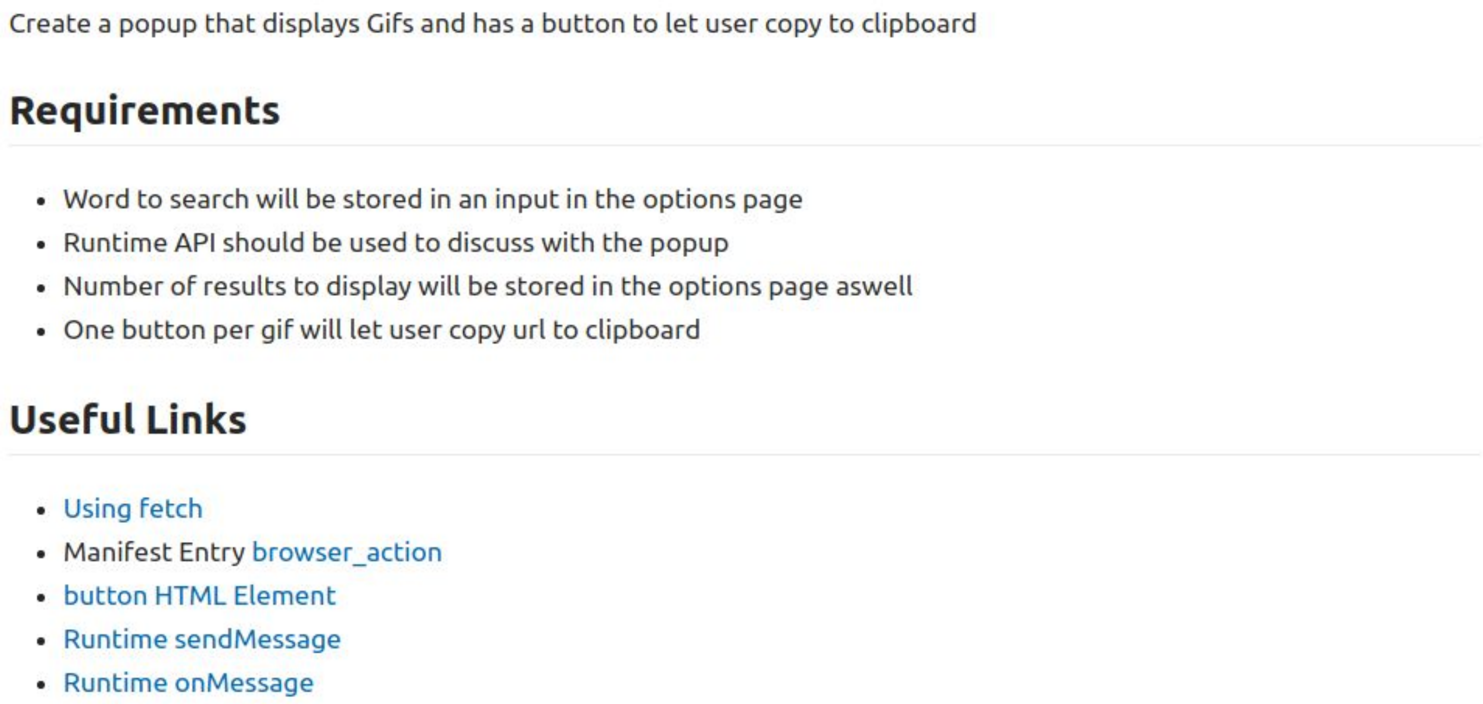
Requirements

- Customize number of results wanted
- Options must open in a separate tab
- Options must be stored using storage api
- Options must be persisted in options page
- Allow switch between Search and Random giphy api

Useful Links

- Manifest Entry options_ui
- Chrome storage API
- input HTML Element
- radio HTML Element

Exercice 5 - Browser Action Popup



Create a popup that displays Gifs and has a button to let user copy to clipboard

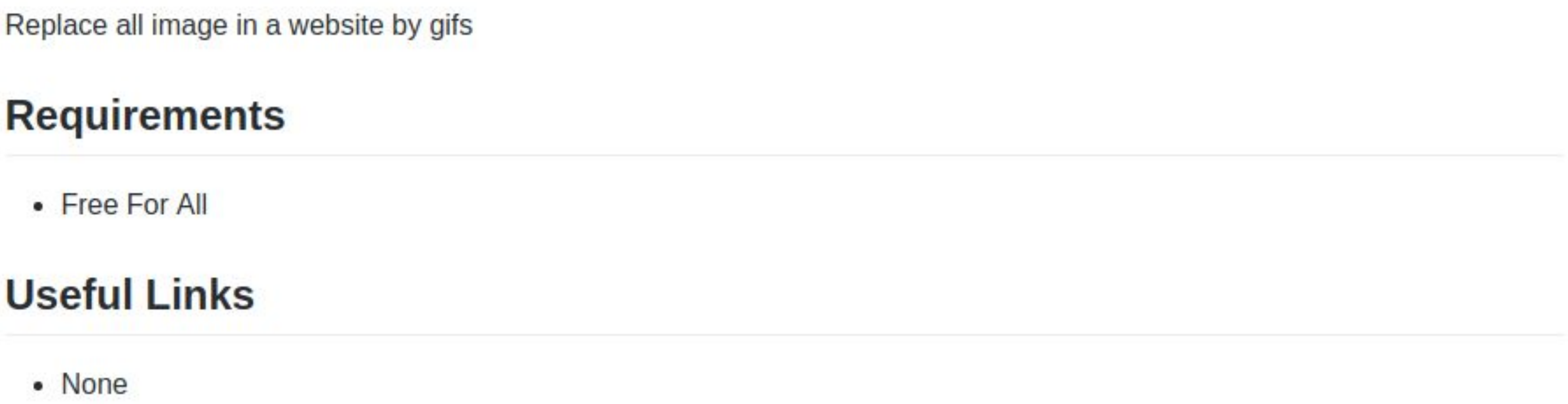
Requirements

- Word to search will be stored in an input in the options page
- Runtime API should be used to discuss with the popup
- Number of results to display will be stored in the options page aswell
- One button per gif will let user copy url to clipboard

Useful Links

- Using fetch
- Manifest Entry browser_action
- button HTML Element
- Runtime sendMessage
- Runtime onMessage

Exercice 6 - Content Script



Replace all image in a website by gifs

Requirements

- Free For All

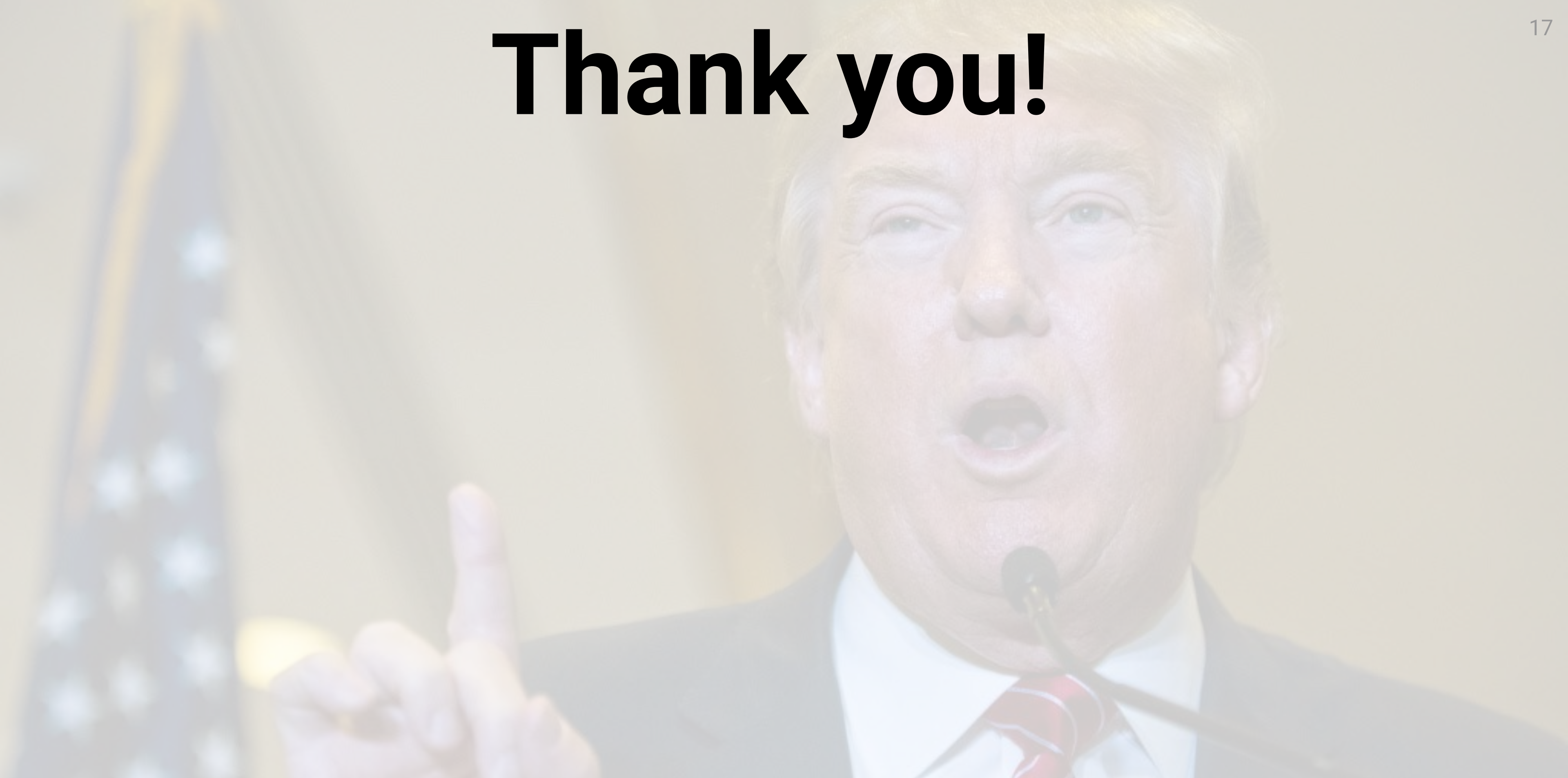
Useful Links

- None

Further reading

- Browser Extensions on **MDN**
- Mozilla **polyfill** to help cross-browser extension development
- **CLI** to help scaffolding a cross-browser extension project
- **Icebrg** blog article on malicious chrome extensions
- Google security blog
- **Source code** for the Translator browser extension

Thank you!



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