

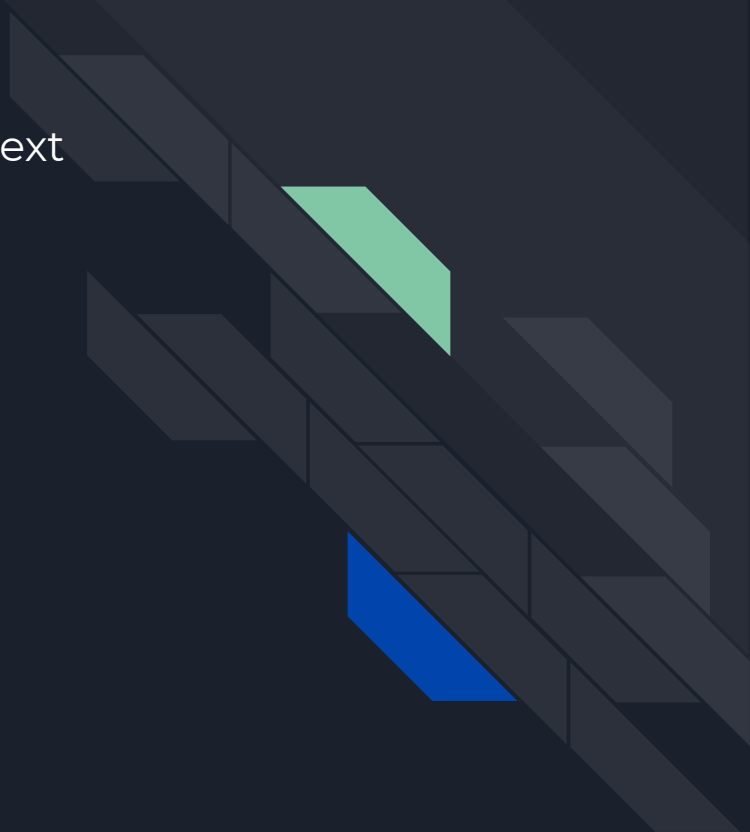


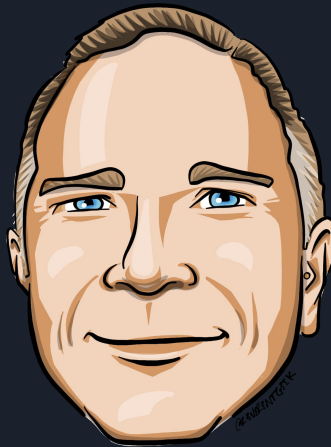
Blasting Browser Security

with Extensions

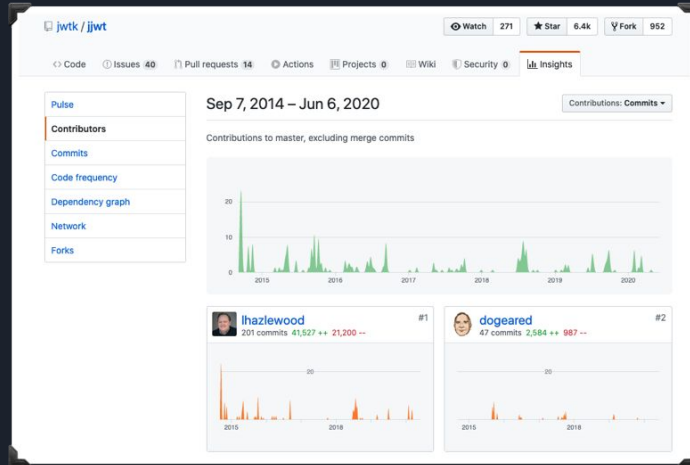
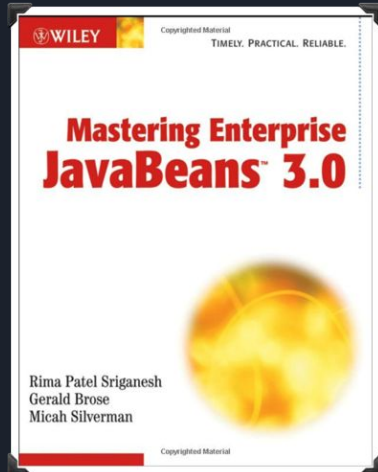
AGENDA

- What are Browser Extensions
- Anatomy of an Extension
- Cross-platform extensions with web-ext
- Introducing Pretty Kitty
 - Background
 - Popup
 - Content script
- Packaging
- Deploying
 - Google Chrome Web Store
 - Mozilla Add-ons Store
- Review Process?

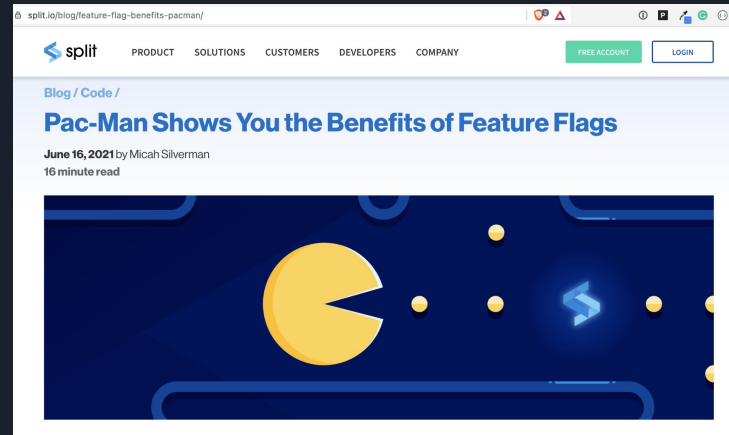




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<https://github.com/jwtk/jjwt>



<https://www.split.io/blog>



What is a Browser Extension?

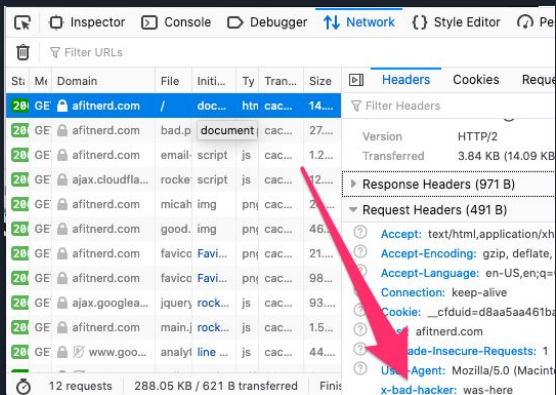
https://en.wikipedia.org/wiki/Browser_extension

A browser extension is a small software module for customizing a web browser.

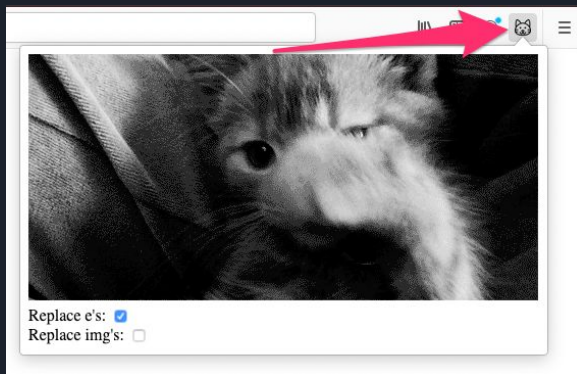


Anatomy of a Browser Extension

`manifest.json` file describes:



Background Scripts



Popup scripts



Content altering scripts

Anatomy of a Browser Extension

```
{ manifest.json > ...  
1  
2 "manifest_version": 2,  
3 "name": "Pretty Kitty",  
4 "version": "0.1.1",  
5 "description": "An extension to view cute cat gifs",  
6 "homepage_url": "https://thecatapi.com/",  
7 "icons": {  
8   "32": "icons/cat-32.png"  
9 },  
10 "permissions": [  
11   "*/**/*",  
12   "webRequest", "webRequestBlocking",  
13   "tabs", "storage"  
14 ],  
15 "background": {  
16   "scripts": [  
17     "browser-polyfill.min.js",  
18     "background.js"  
19   ]  
20 },  
21 "content_scripts": [  
22   {  
23     "matches": ["*/**/*"],  
24     "js": [  
25       "browser-polyfill.min.js",  
26       "beautify.js"  
27     ]  
28   }  
29 ],  
30 "browser_action": {  
31   "default_icon": "icons/cat-32.png",  
32   "theme_icons": [{  
33     "light": "icons/cat-32.png",  
34     "dark": "icons/cat-32.png",  
35     "size": 32  
36   }],  
37   "default_title": "Pretty Kitty",  
38   "default_popup": "popup/index.html"  
39 }  
40 }
```

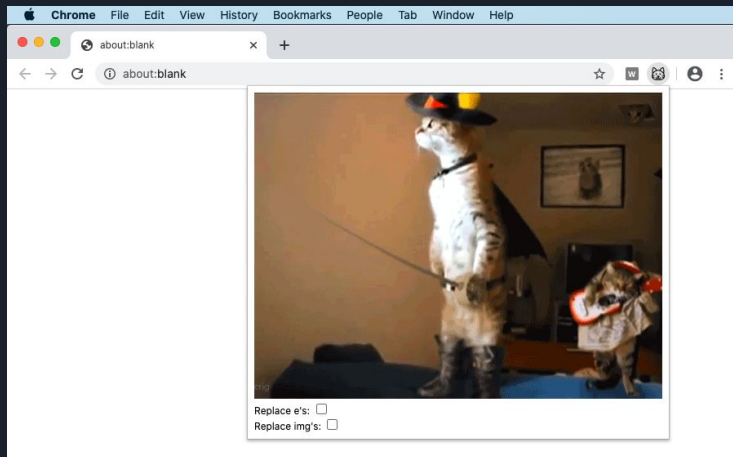
Background Scripts

Content altering scripts

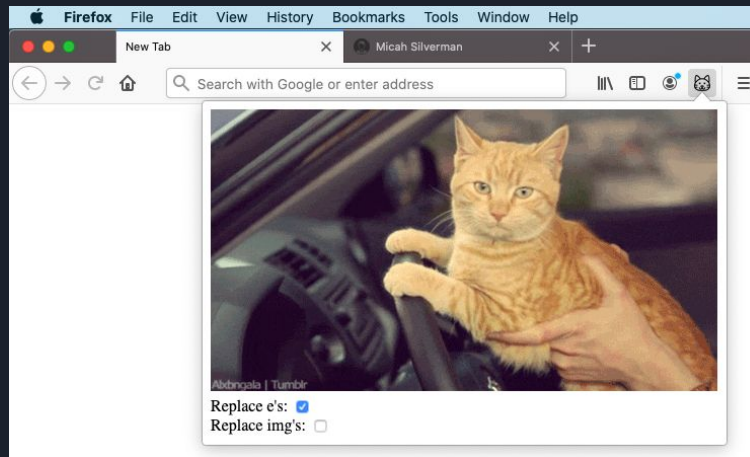
Popup scripts

History of Browser Extensions

`chrome.webRequest.onBeforeRequest`



`browser.webRequest.onBeforeRequest`

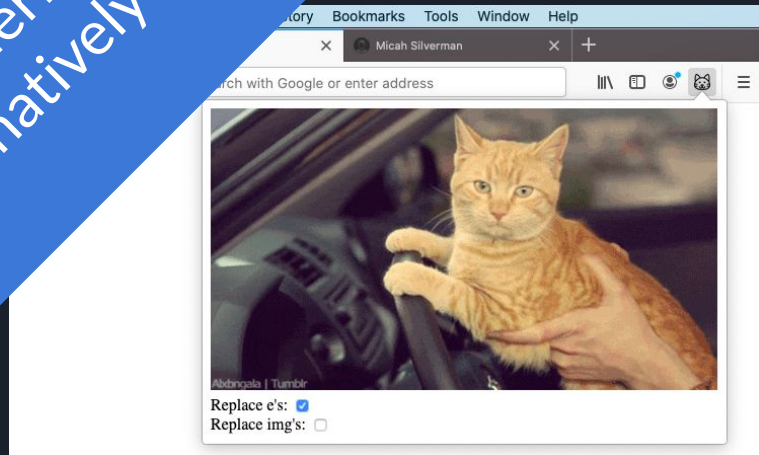
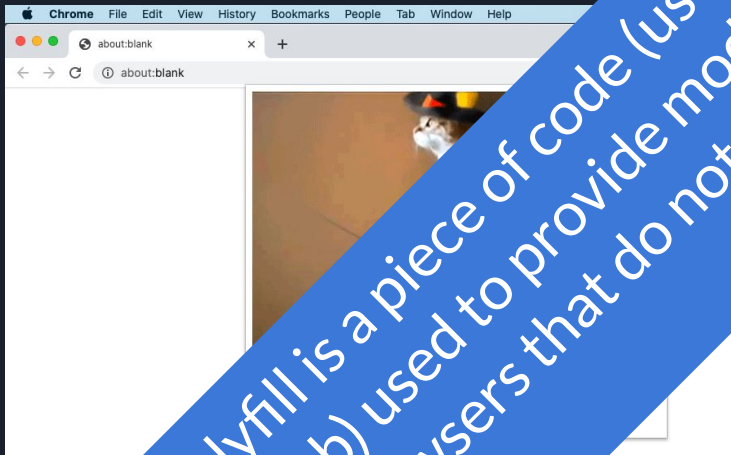


History of Browser

`browser-`

`browser.web`

A polyfill is a piece of code (usually JavaScript on the Web) used to provide modern functionality on older browsers that do not natively support it.





web-ext FTW!

<https://github.com/mozilla/web-ext>

“...it aims to support browser extensions in a standard, portable, cross-platform way.”

DEVELOP

TEST

BUILD

DEPLOY

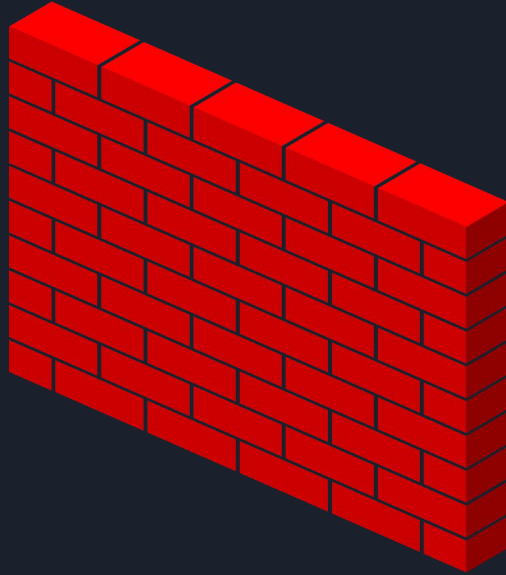


{ Presenting Pretty Kitty Browser Extension }



The way it's supposed to be

Background script
Popup script



Content script

The way it is



Background script

Popup script

Content script



Three ways to communicate

1. Programmatic Injection

popup.js:

```
document.getElementById('control').addEventListener(  
  'click',  
  function () {  
    browser.tabs.query(  
      { active: true, currentWindow: true }  
    ).then(activeTabs => {  
      browser.tabs.executeScript(  
        activeTabs[0].id,  
        { code: `// replace E's` }  
      );  
    });  
  });  
});
```



Three ways to communicate


2. Message Passing

popup.js:

```
browser.tabs.sendMessage(  
  activeTabs[0].id,  
  { replaceEs: true, replaceImgs: false }  
);
```

content.js:

```
browser.runtime.onMessage.addListener(request => {  
  if(request.replaceEs) {  
    // replace all e's  
  }  
});
```



Three ways to communicate

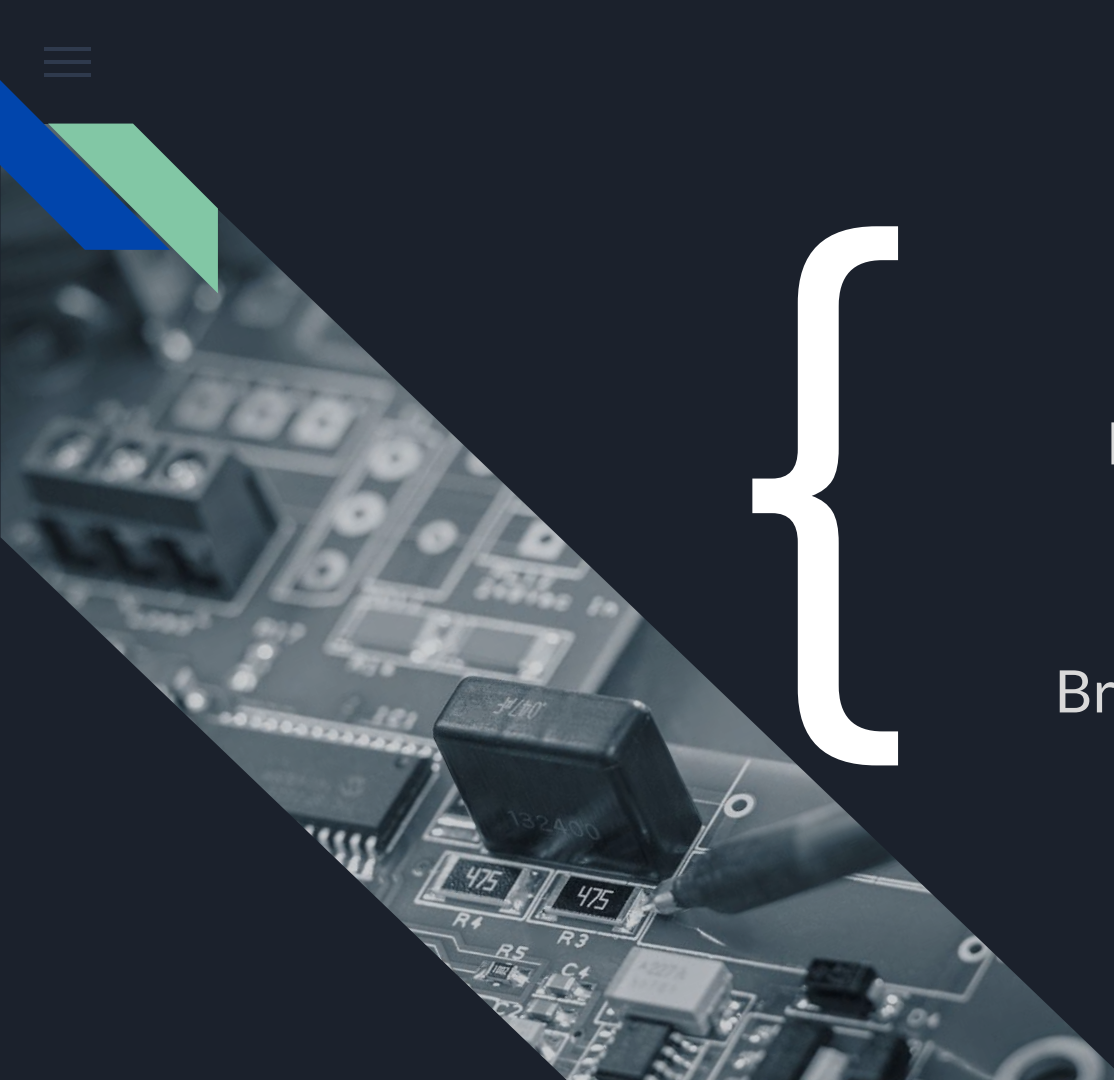
3. Local Storage

popup.js:

```
browser.storage.local.set(  
  {'pretty.kitty.settings': { replaceEs: true }}  
)  
  
  .then(() => console.log("OK"));
```

content.js:

```
browser.storage.local.get('pretty.kitty.settings')  
  .then(item => {  
    if (item['pretty.kitty.settings'].replaceEs) {  
      // replace E's  
    }  
  })
```



{ Presenting Build & Deploy **Pretty Kitty** Browser Extension }

Register as a Chrome Web Store Developer

Welcome to the Chrome Web Store Developer Dashboard. Once registered, you'll be able to distribute, monetize, and manage extensions and themes for the Google Chrome browser. [Learn more](#)

Get started:



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☒ I have read and agree to the Developer Agreement and Policies



Pay the \$5 registration fee

A one-time registration fee is required in order to register your account.

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Profile

Display Name *

Tell users a bit more information about yourself. Most fields are optional, but they'll help other users get to know you better.

Homepage

This URL will only be visible for users who are developers.

Location

Occupation

Profile photo



[Choose Photo...](#)

Impact-driven development requires data

Only Split's unified platform closes The Impact Gap

Split Feature Delivery Platform



Manage
feature flags



Monitor
release performance



Experiment
for business impact



Feature flags

control user access and
record 'who sees what'



Performance & behavioral data

from engineering, product,
and business sources



Thank You!



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