

Coding Part

11_Bugs

October 13, 2019

Writing a Chrome extension:

Chrome extensions are build using standard web technologies. The primary differences between an extension and a web app are that extensions have access to additional browser specific APIs and run differently that normal pages.

To start off, create a new folder with the name of your extension and add the following file "manifest.json" to it. The manifest is an "index" of the extension and most of the fields are self explanatory.

```
{
  "name": "Ad-blocker",
  "version": "1.0",
  "description": "A simple adblocker",
  "permissions": ["webRequest", "webRequestBlocking", "http://*/",
    "https://*/"],
  "background": {
    "scripts": ["blocked_domains.js", "background.js"]
  },
  "manifest_version": 2
}
```

The file manifest.json lists the components of the extension and describes what permissions it needs. The permissions field lists what webpages the extension has permission to access. We want our extension to have access to all pages, hence the wildcard patterns. Note: permission to access an http page is distinct from permission for the https equivalent. The permission field also lists which "special" APIs and feature we wish to make use of.

Our extension will run in the background and automatically intercept and filter requests. To set this up we give a list of scripts to load and run in the background. The order of scrips is important so make sure to list a script after its dependencies.

webRequests API:

The plan for the blocker is to intercept requests and block ones to domains hosting ads. Perusing the chrome docs reveals the `chrome.webRequest.onBeforeRequest` event. The `onBefore request` "Fires when a request is about to occur. This event is sent before any TCP connection is made and can be used to cancel or redirect requests. `background.js` sets up an event handler to cancel all requests to the specified urls.

Creating a blacklist:

Now edit the `blocked_domains.js` so that it is a valid JavaScript array that looks like this:

```
var blocked_domains = [
  "*/**/*.lb.usemaxserver.de/*",
  "*/**/*.tracking.klickthru.com/*",
  ...
  "*/**/*.zmedia.com/*",
  "*/**/*.zv1.november-lax.com/*"];
```

`blocked_domains.js` consists of a single array of blacklisted domains

Also our `background.js` will look like this. `chrome.webRequest.onBeforeRequest.addListener`

```
function(details) {
  console.log("blocking:", details.url);
  return {cancel: true };
},
{urls: blocked_domains },
  "blocking"
);
```