# Getting Started With Service Workers

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# 3 Truths 1 Lie

- My senior year of high school cost more than my freshman year at University
- I graduated university before IBM introduced the PC AT
- I earned my MBA before Internet was introduced
- I made only all A's in University except for 1 course

# Pain of Web Apps

- Can be slow to load
- No notification from website
- Images may not show
- Cannot interact if offline

# Native Apps

- Leverage the power of the operating system
- Background Sync
- Offline-First
- Push Notifications3

# Progressive Web App

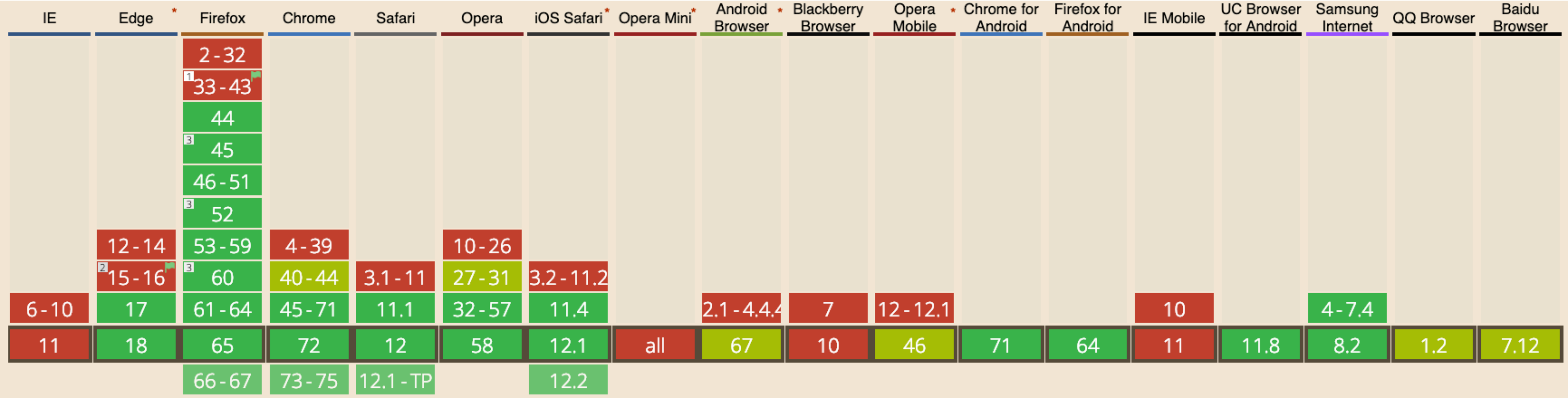
- Web app
- Provides native app functionality

# What is a Service Worker?

- JavaScript file you add to your website
- Use it to do offline and background stuff

# What Can They Do?

- Display an offline page
- Store pages offline
- Store content in the cache
- Push notifications
- Background Sync



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| | | 🟩 46 - 51 | | | | | | | | | | | | | | | |
| | | 🟩 [3] 52 | | | | | | | | | | | | | | | |
| | 🟥 12 - 14 | 🟩 53 - 59 | 🟥 4 - 39 | | 🟥 10 - 26 | | | | | | | | | | | | |
| | 🟥 [2] 15 - 16 | 🟩 [3] 60 | 🟨 40 - 44 | 🟥 3.1 - 11 | 🟨 27 - 31 | 🟥 3.2 - 11.2 | | | | | | | | | | | |
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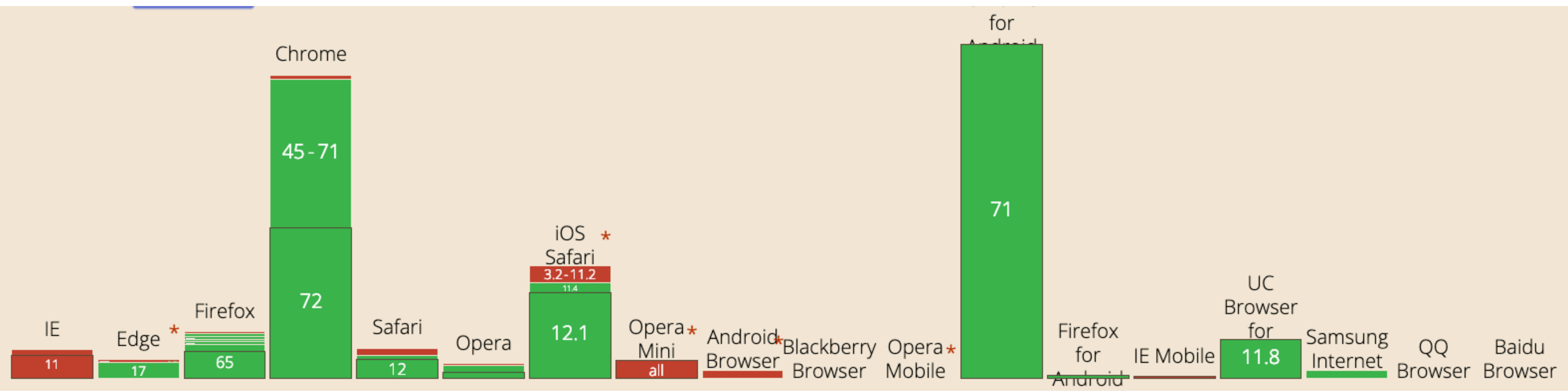
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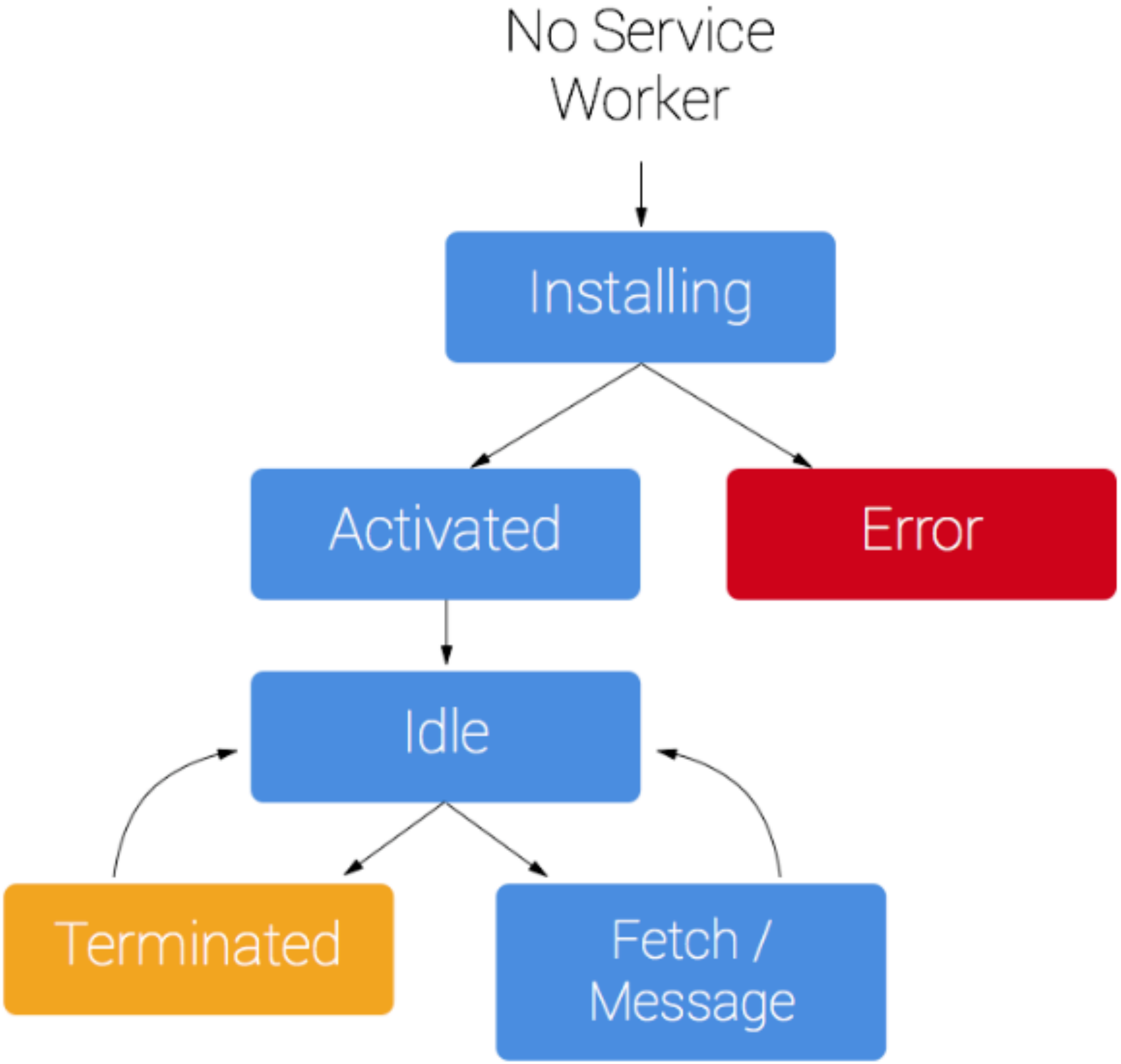
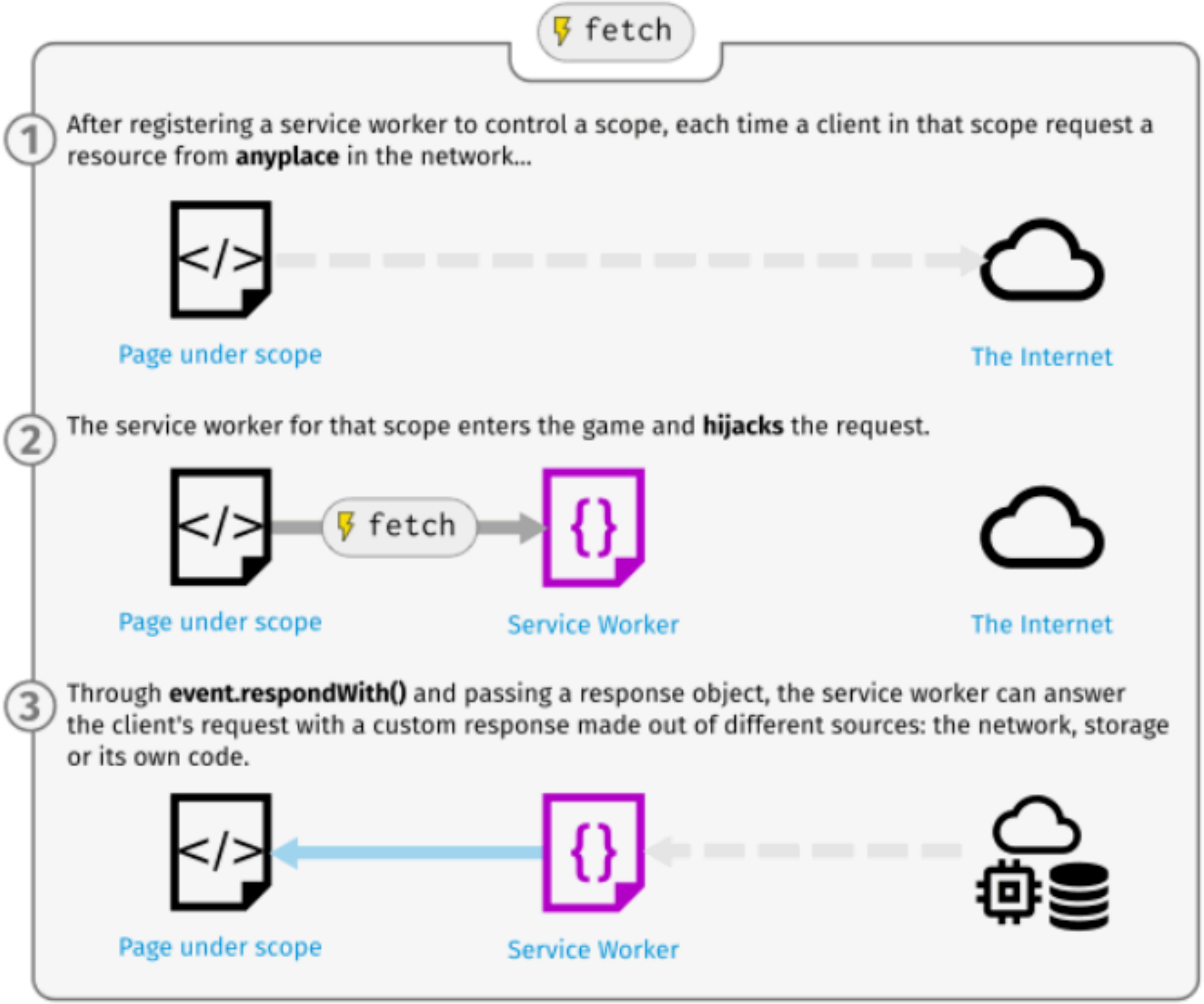
QQ Browser
Baidu Browser

# Service Worker Lifecycle



# Service Worker as a Proxy



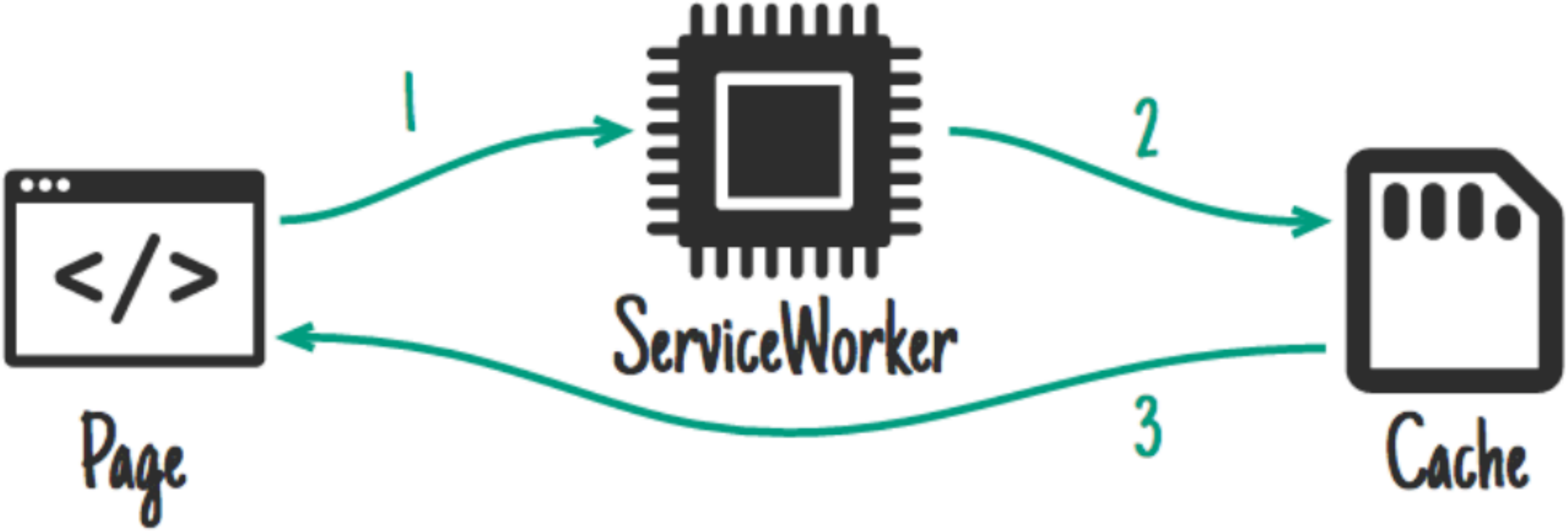
1 After registering a service worker to control a scope, each time a client in that scope request a resource from **anyplace** in the network...

2 The service worker for that scope enters the game and **hijacks** the request.

3 Through **event.respondWith()** and passing a response object, the service worker can answer the client's request with a custom response made out of different sources: the network, storage or its own code.

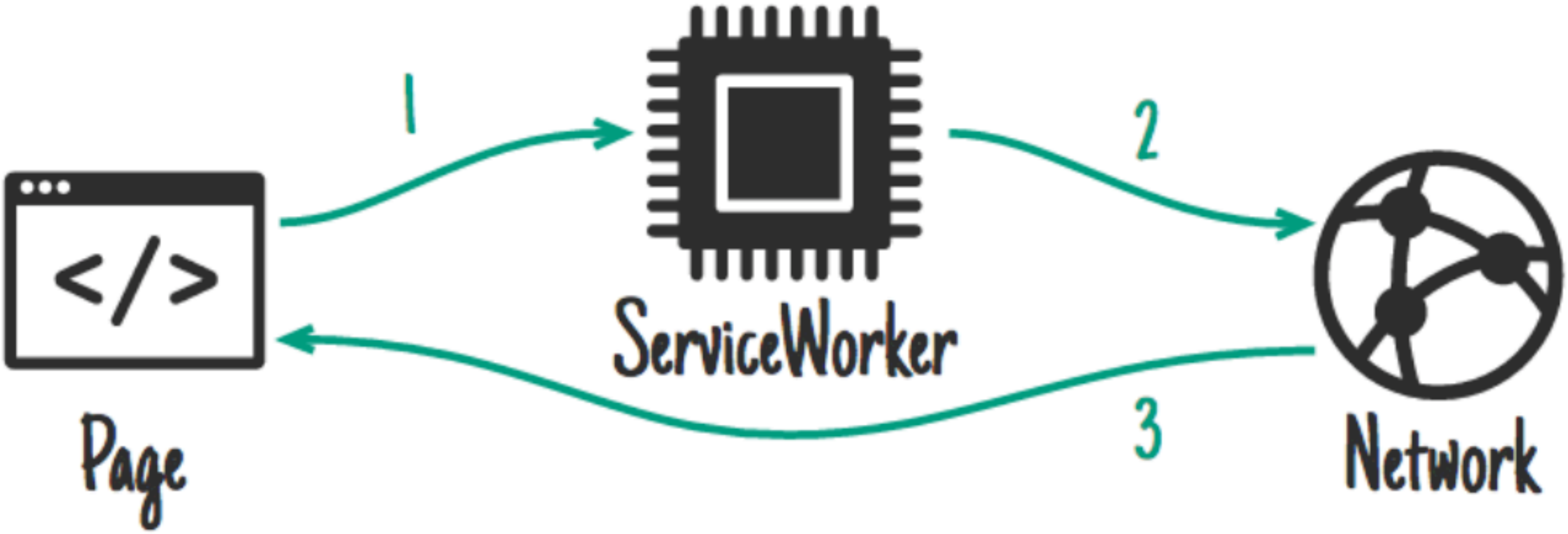
# Service Worker Fetch Modes

## Cache Only



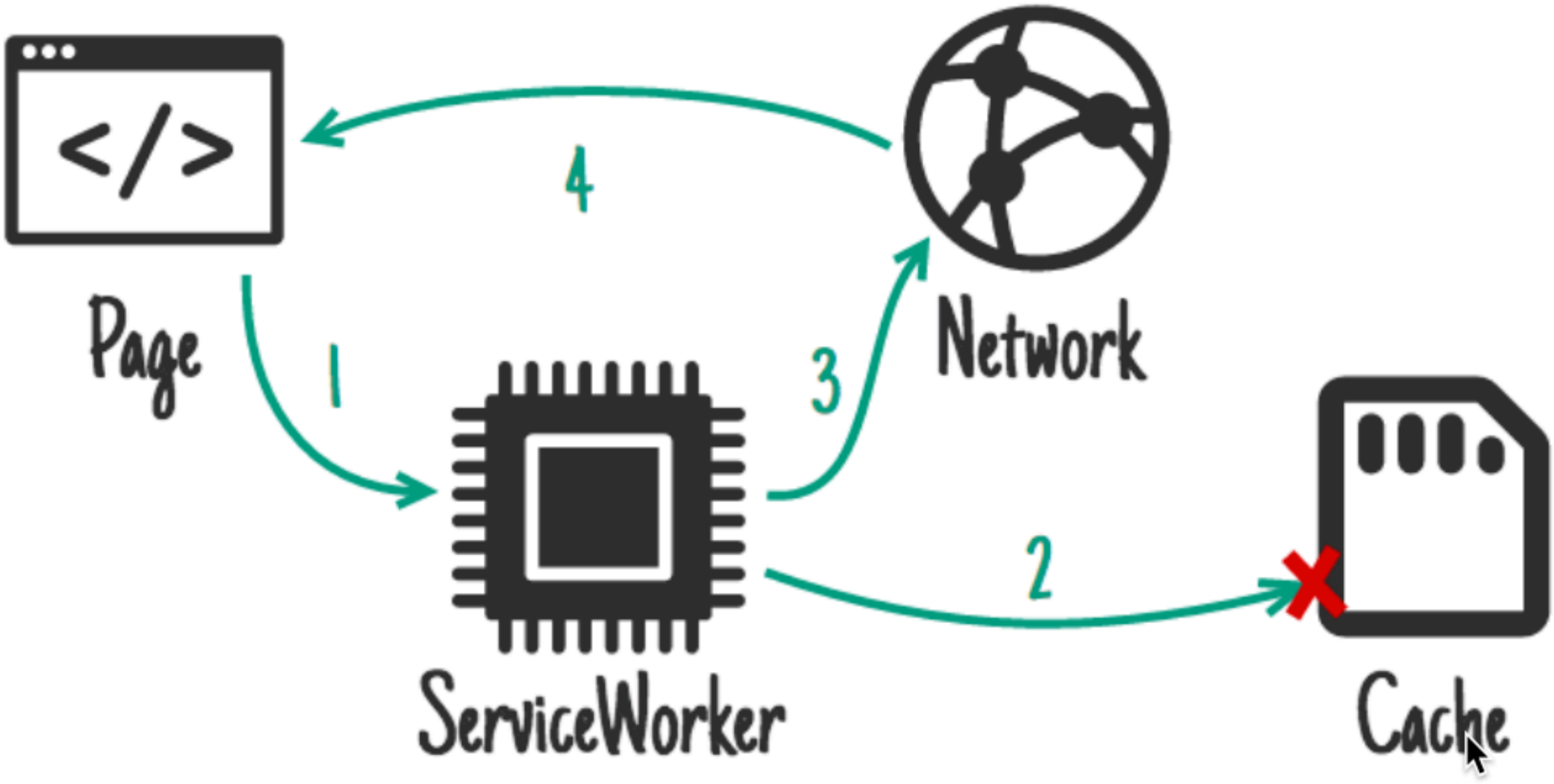
# Service Worker Fetch Modes

## Network Only



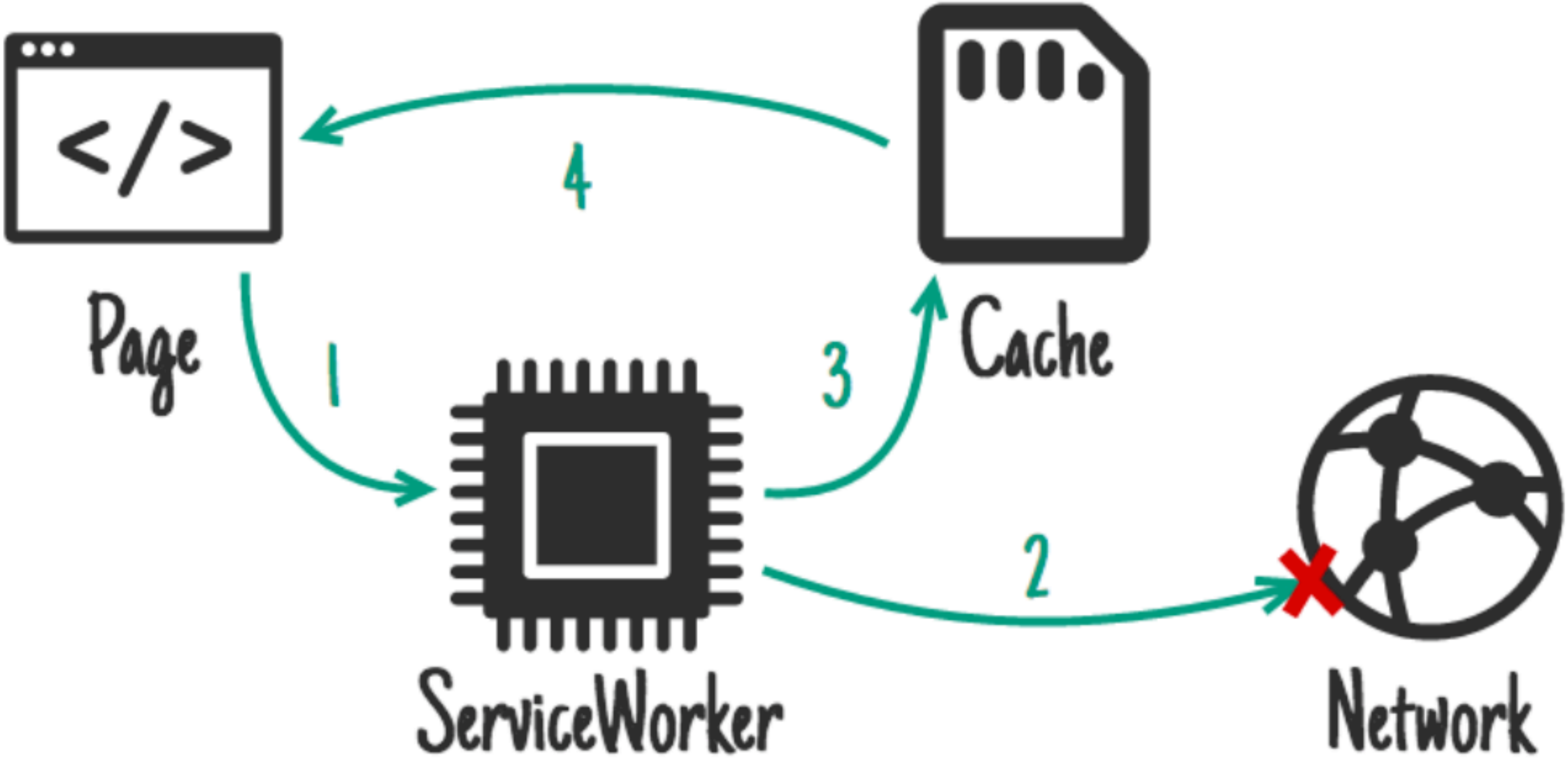
# Service Worker Fetch Modes

## Cache, Falling Back to Network



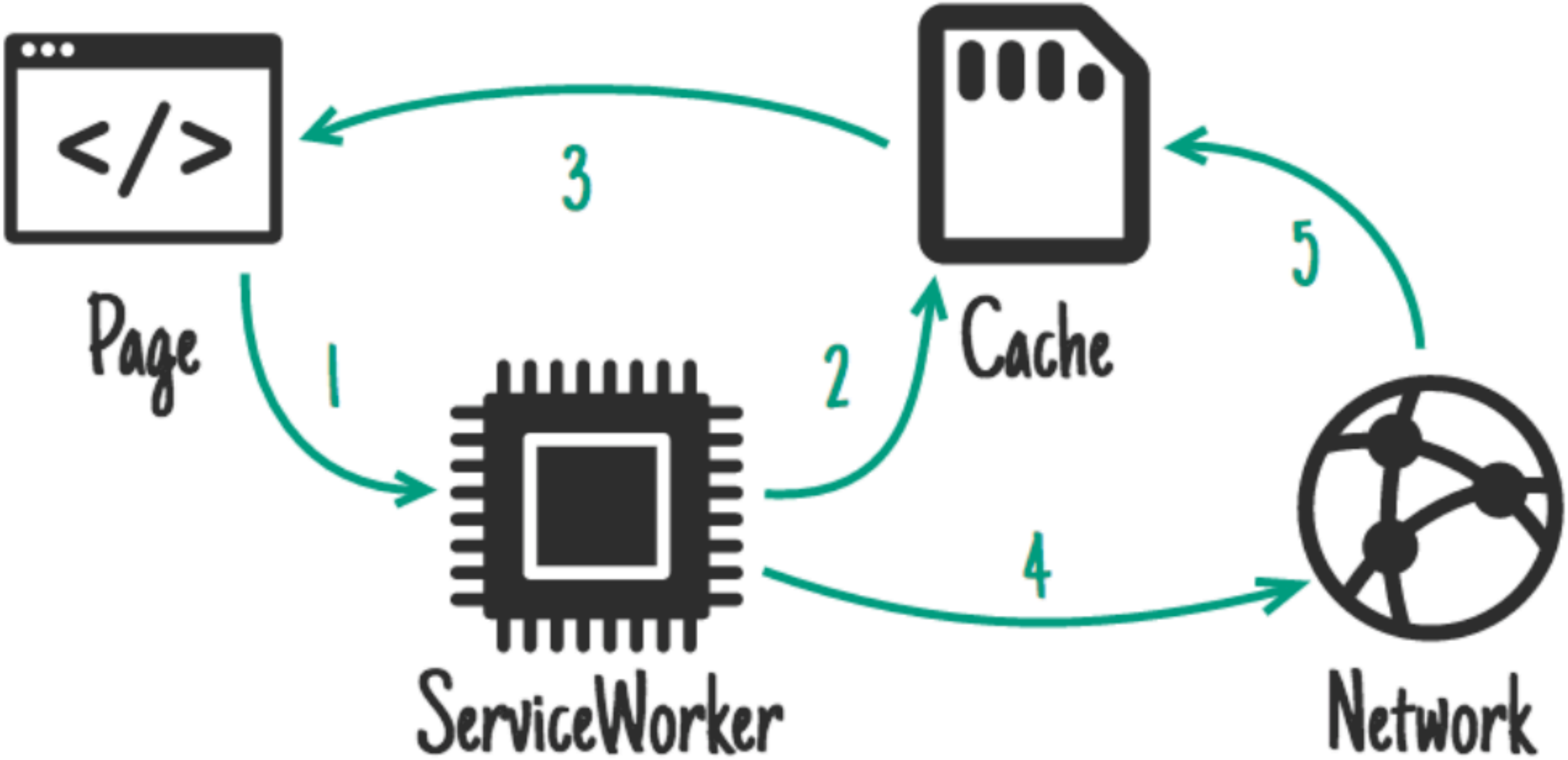
# Service Worker Fetch Modes

## Network, Falling Back to Cache



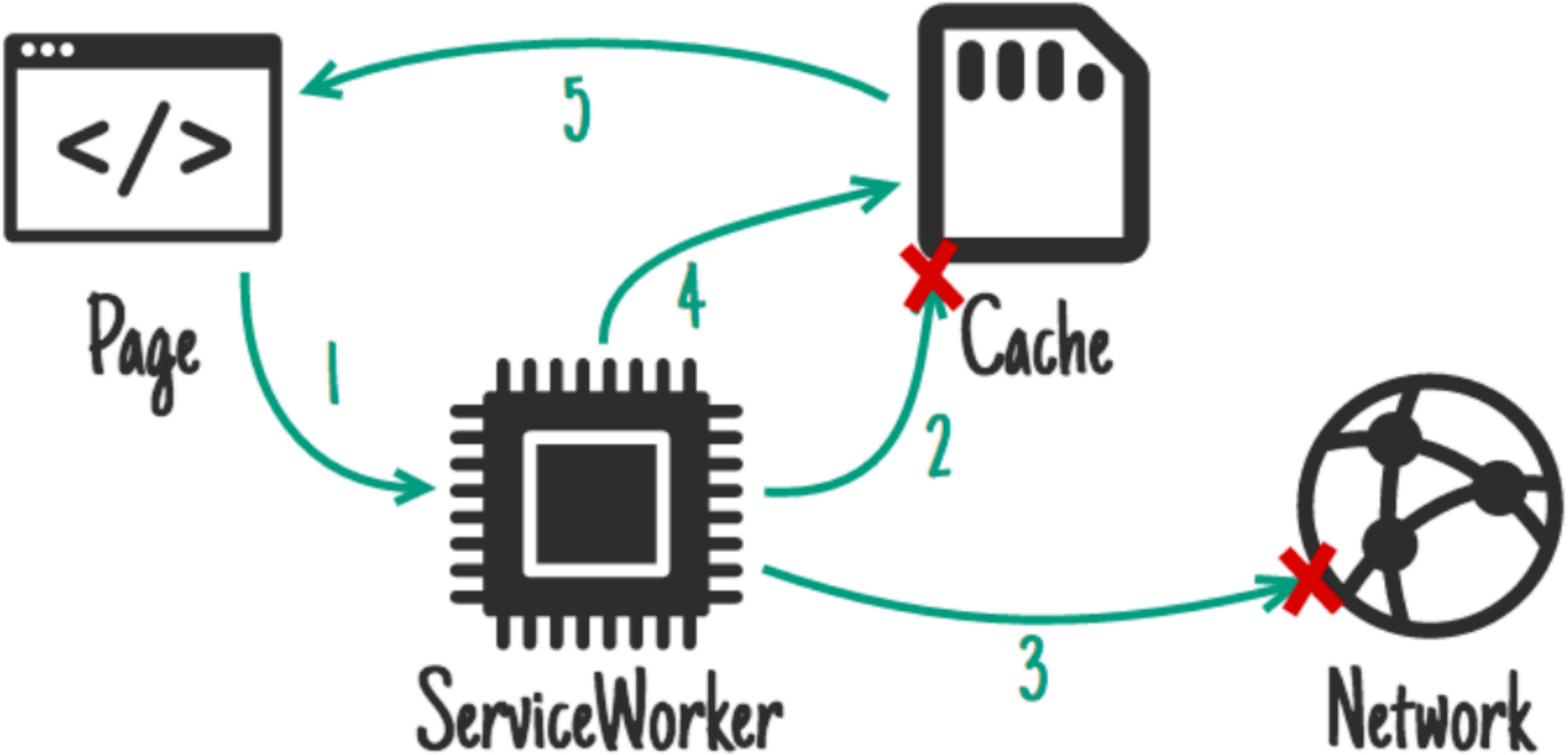
# Service Worker Fetch Modes

## Stale While Revalidate



# Service Worker Fetch Modes

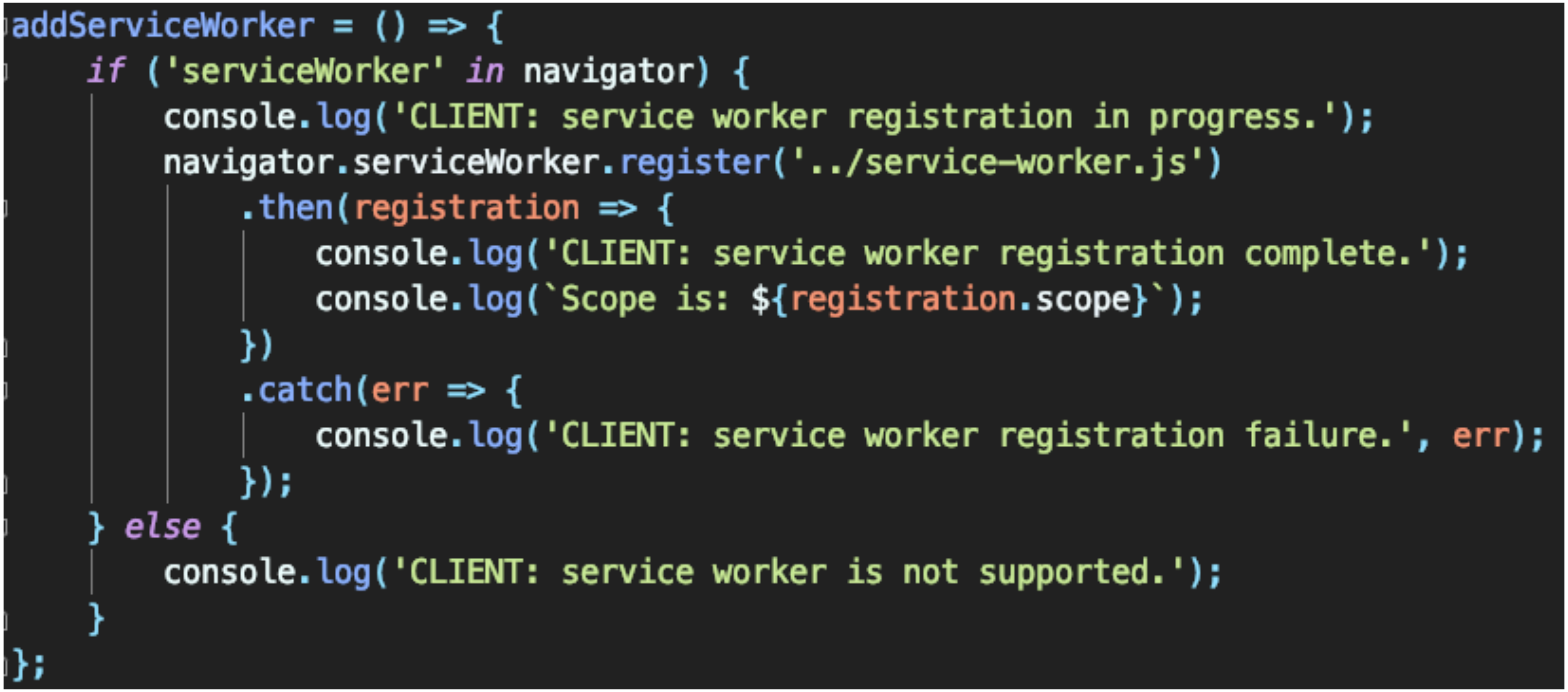
## Generic Fallback



# Service Worker Notes

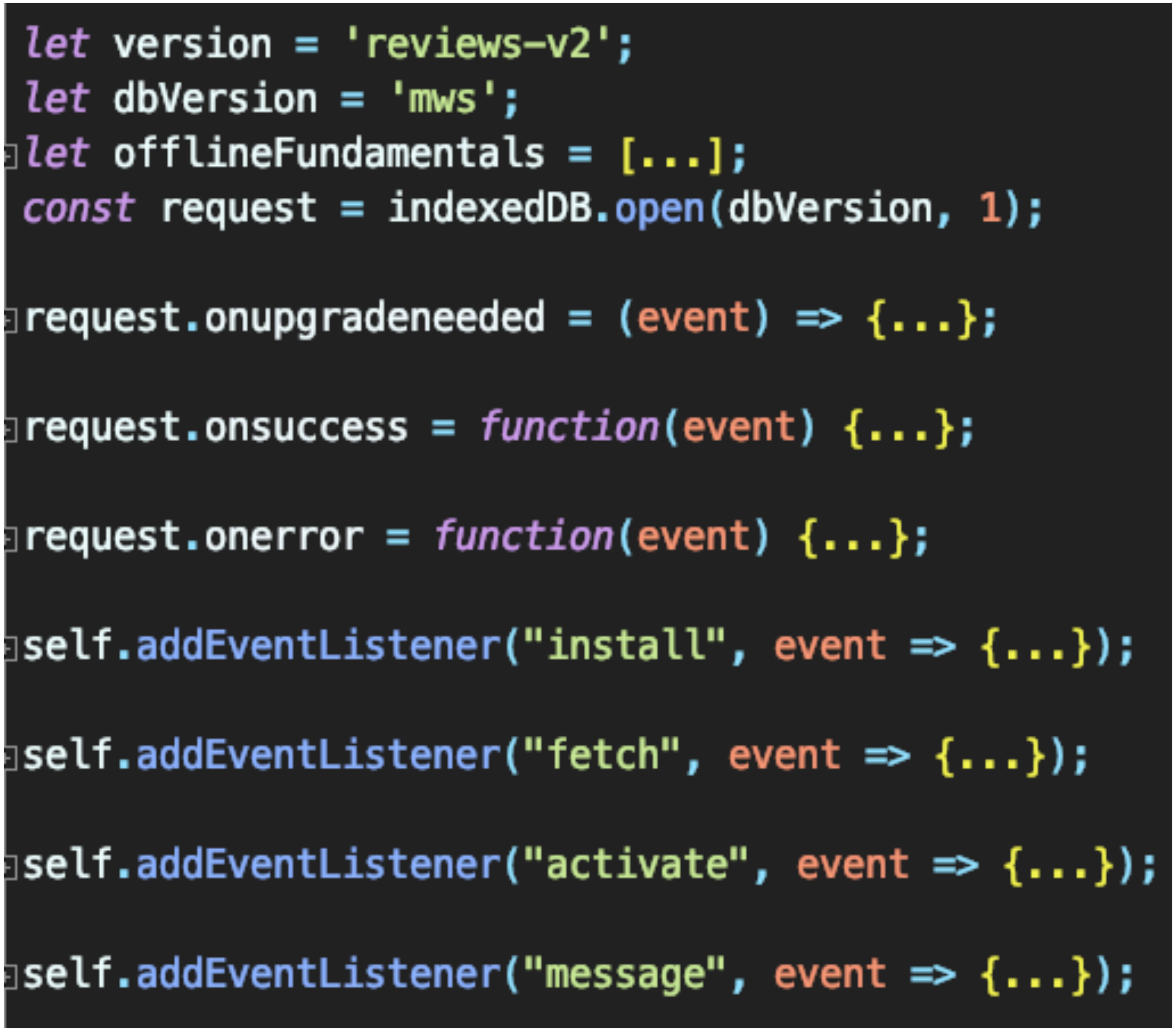
- Works on HTTPS only, or localhost
- Has controlled scopes
- Runs in background, in a separate thread
- Only one SW activated at a time

# Registering a SW



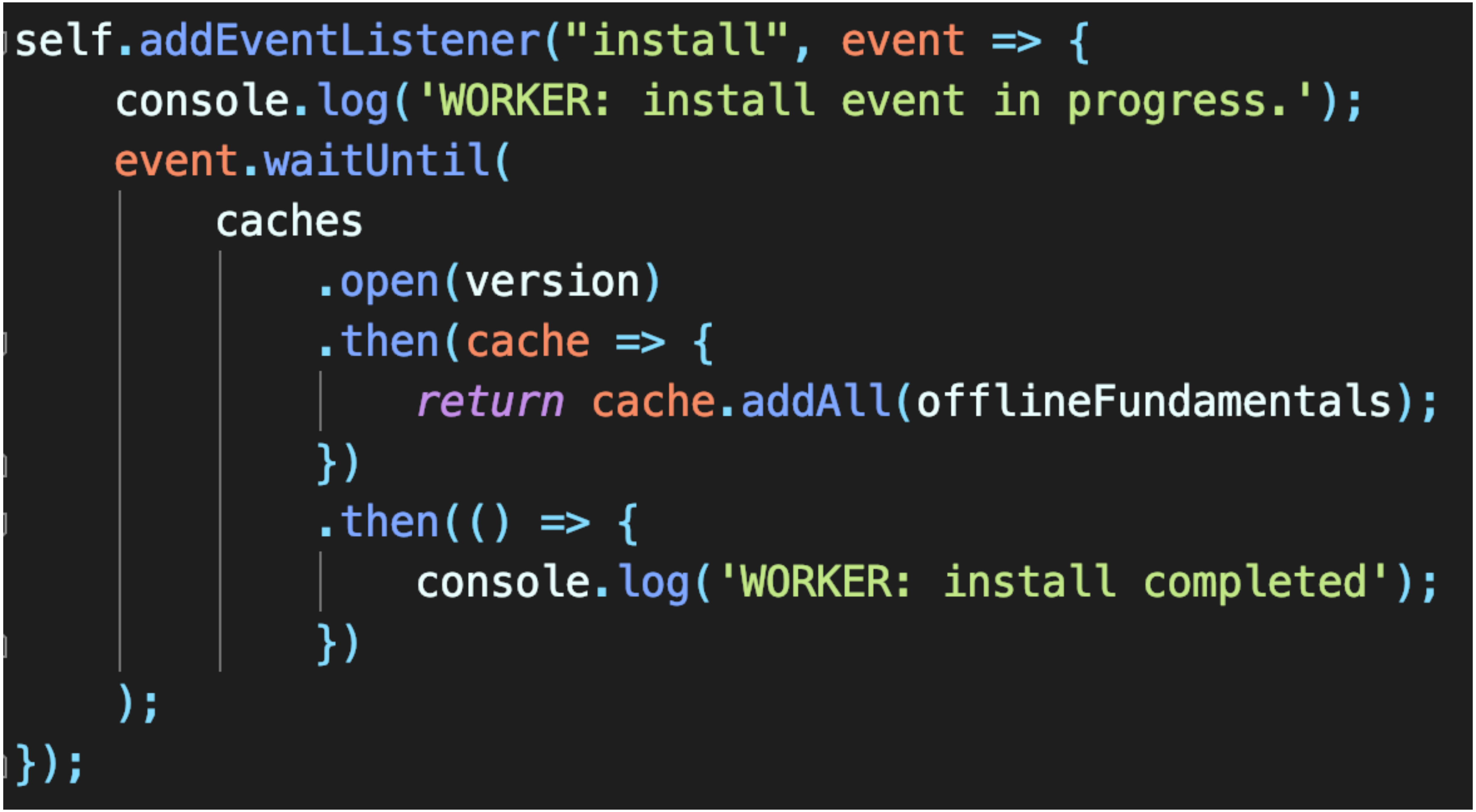
```
addServiceWorker = () => {
    if ('serviceWorker' in navigator) {
        console.log('CLIENT: service worker registration in progress.');
        navigator.serviceWorker.register('../service-worker.js')
            .then(registration => {
                console.log('CLIENT: service worker registration complete.');
                console.log(`Scope is: ${registration.scope}`);
            })
            .catch(err => {
                console.log('CLIENT: service worker registration failure.', err);
            });
    } else {
        console.log('CLIENT: service worker is not supported.');
    }
};
```

# service-worker.js



```
let version = 'reviews-v2';
let dbVersion = 'mws';
let offlineFundamentals = [...];
const request = indexedDB.open(dbVersion, 1);

request.onupgradeneeded = (event) => {...};

request.onsuccess = function(event) {...};

request.onerror = function(event) {...};

self.addEventListener("install", event => {...});

self.addEventListener("fetch", event => {...});

self.addEventListener("activate", event => {...});

self.addEventListener("message", event => {...});
```

# Install Service Worker



```
self.addEventListener("install", event => {
    console.log('WORKER: install event in progress.');
    event.waitUntil(
        caches
            .open(version)
            .then(cache => {
                return cache.addAll(offlineFundamentals);
            })
            .then(() => {
                console.log('WORKER: install completed');
            })
    );
});
```

# fetch

- DEMO