QUIRKS

kintsugi (金継ぎ) for the Web

Karl Dubost - WebKit Contributors Meeting - October 25, 2023
Website is broken. User Experience is bad!

- Website/JS library targeting a specific browser
- New feature breaking a site
- Removing an old feature
- Fixing a bug sites rely on
- (Tracking Prevention)
How to fix it?

- UA override
- C++ Quirks
- Hot fix websites
History:

Opera (Presto) BrowserJS
https://github.com/srinivasarao549/browserjs/blob/master/desktop/browserjs-12.00.js

Firefox Site Interventions
https://github.com/mozilla-extensions/webcompat-addon

Safari Quirks (let’s talk about it)
• Mostly true/false
• Based on domain name and simple heuristics
• Quirks logic is elsewhere in the C++ code base
Example: Quirks::shouldDisableLazyImageLoading()

<table>
<thead>
<tr>
<th>Reported</th>
<th>Oct 27, 2022</th>
<th>Since when?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis</td>
<td>Nov 7, 2022</td>
<td></td>
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<tr>
<td>Outreach</td>
<td>Nov 8, 2022</td>
<td><a href="https://github.com/webcompat/web-bugs/issues/113635">https://github.com/webcompat/web-bugs/issues/113635</a></td>
</tr>
<tr>
<td>Quirk Added</td>
<td>Nov 18, 2022</td>
<td>Brandon Stewart – <a href="https://github.com/WebKit/WebKit/pull/6595">https://github.com/WebKit/WebKit/pull/6595</a></td>
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```cpp
if (RegistrableDomain(m_document->url()).string() != "ikea.com"_s)
  return false;

auto* metaElement = m_document->getElementsByTagName("meta"_s)->namedItem("generator"_s);
if (metaElement && metaElement->getAttribute("content"_s) == "Gatsby 4.24.1"_s)
  m_shouldDisableLazyImageLoadingQuirk = true;
```

<table>
<thead>
<tr>
<th>Safari Release</th>
<th>Jan 24, 2023</th>
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</thead>
<tbody>
<tr>
<td>Fixed by Ikea</td>
<td>Apr 18, 2023</td>
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<tr>
<td>Quirk Removed</td>
<td>May 18, 2023</td>
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<tr>
<td>Safari Release</td>
<td>TODAY!</td>
</tr>
</tbody>
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UA overrides: HTTP User-Agent + navigator.userAgent

- GTK Source WebCore/platform/glib/UserAgentQuirks.cpp
- Firefox iOS
- Safari has its mechanism (needs to be in WebKit)
  - WebKit User Agent Overrides API
  - See https://bugs.webkit.org/show_bug.cgi?id=263619
Issues!

- Quirks often requires modifying the C++ Code base
- All or nothing. Disable Site Specific Hacks.
- Coding Quirks vs Release time (Users have a broken site in the meantime)
- Outreach takes time
- Websites are being blocked by the Quirk when they want to change
- We do not always know the site has been fixed.
- Is the Quirk still needed?
Ideas to minimize users pain

- Simpler configuration (plist? JSON? Declarative?)
- Special power primitives for Webpages
- Dynamic Quirks and UA Overrides (deactivate atomically)
- Usable by others? WebKit GTK. Firefox iOS. etc.
- Not only domain names
- Out of releases update mechanism (Opera BrowserJS)
- Manual QA/Test suites for removing Quirks (Firefox/Opera ex)
Questions?

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