Chrome Packaged Apps are evolving to do more, work seamlessly offline, and give developers more control of their user interface. Join us for a dive into the developer preview of the next evolution of Chrome Apps and learn how you can start doing things you never thought possible using web technologies

About Erik Kay

Erik manages the Chrome Apps, Extensions and Native Client teams. View full profile

About Mihai Parparita

View full profile

Mihai is a Chrome Apps Tech Lead. He joined Google in 2004, and has previously worked on Google AdWords and Google Reader.

The Next Evolution of Chrome Apps

Erik Kay - Engineering Manager
Mihai Parparita - Software Engineer

Google I/O 12

Remember Google I/O 2011?




Ecosystem Is Thriving

Native Client | Amazing Games

Web Store | **750** MILLION APP INSTALLS

Apps Evolution

Breaking Out of the Browser

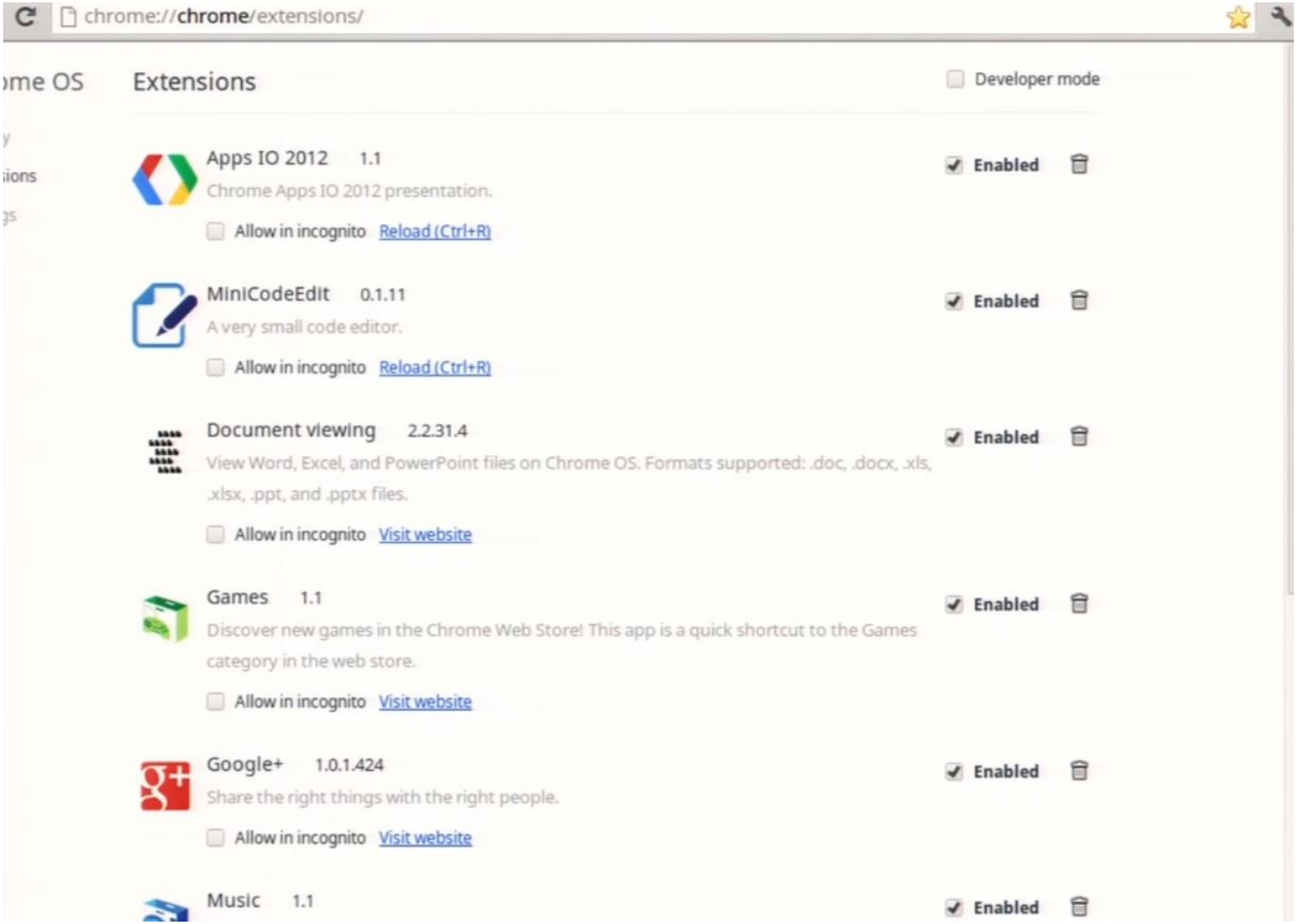
Enhanced User Interface

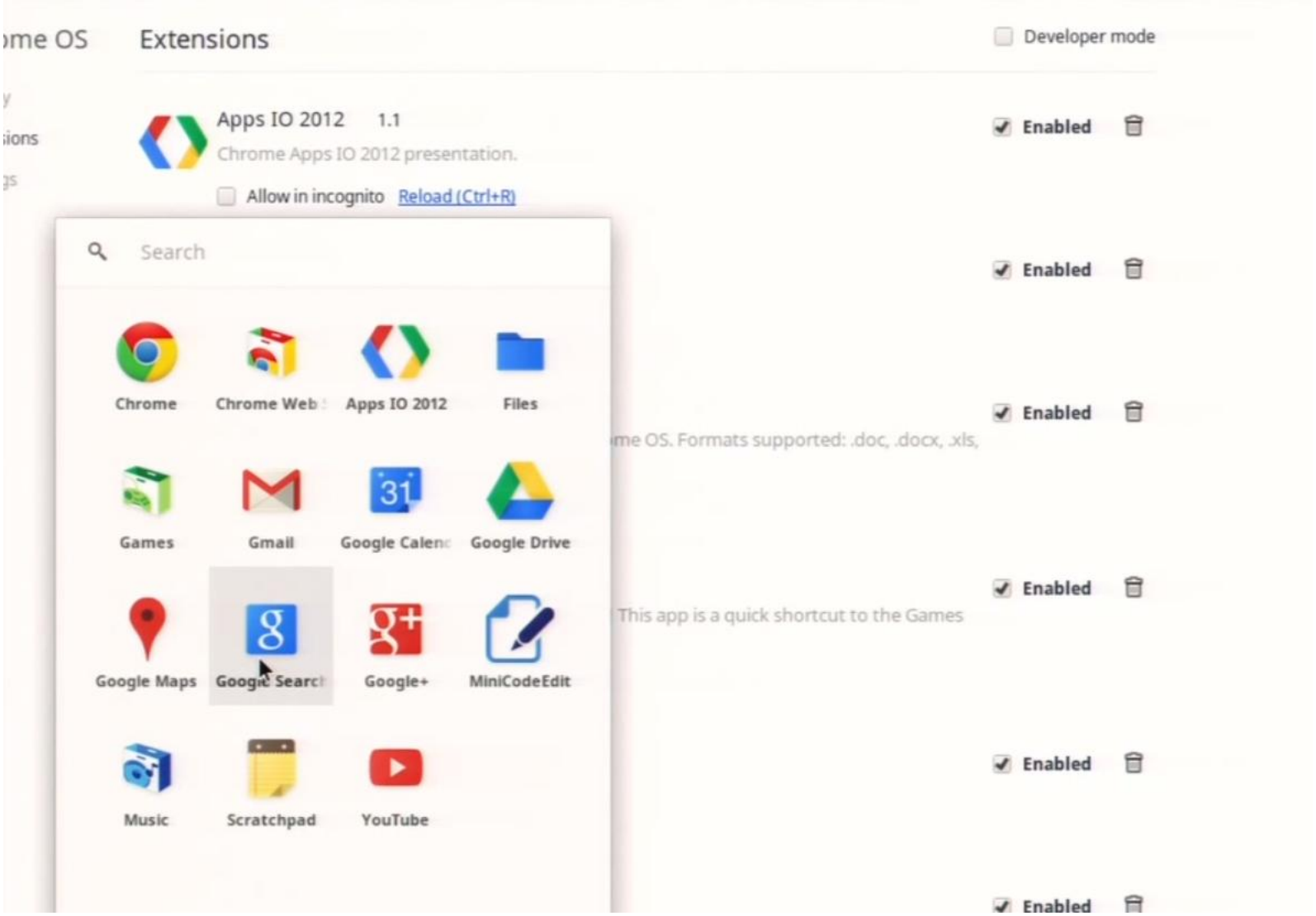
Offline by Default

Breaking Out Of the Browser

- Launch from outside of the browser.
- First class OS windows (alt-tab, etc.)

Demo


chrome://chrome/extensions/
ome OS
Extensions
Developer mode
Apps IO 2012 1.1
Chrome Apps IO 2012 presentation.
Allow in incognito Reload (Ctrl+R)
Enabled
MiniCodeEdit 0.1.11
A very small code editor.
Allow in incognito Reload (Ctrl+R)
Enabled
Document viewing 2.2.31.4
View Word, Excel, and PowerPoint files on Chrome OS. Formats supported: .doc, .docx, .xls, .xlsx, .ppt, and .pptx files.
Allow in incognito Visit website
Enabled
Games 1.1
Discover new games in the Chrome Web Store! This app is a quick shortcut to the Games category in the web store.
Allow in incognito Visit website
Enabled
Google+ 1.0.1.424
Share the right things with the right people.
Allow in incognito Visit website
Enabled
Music 1.1
Enabled

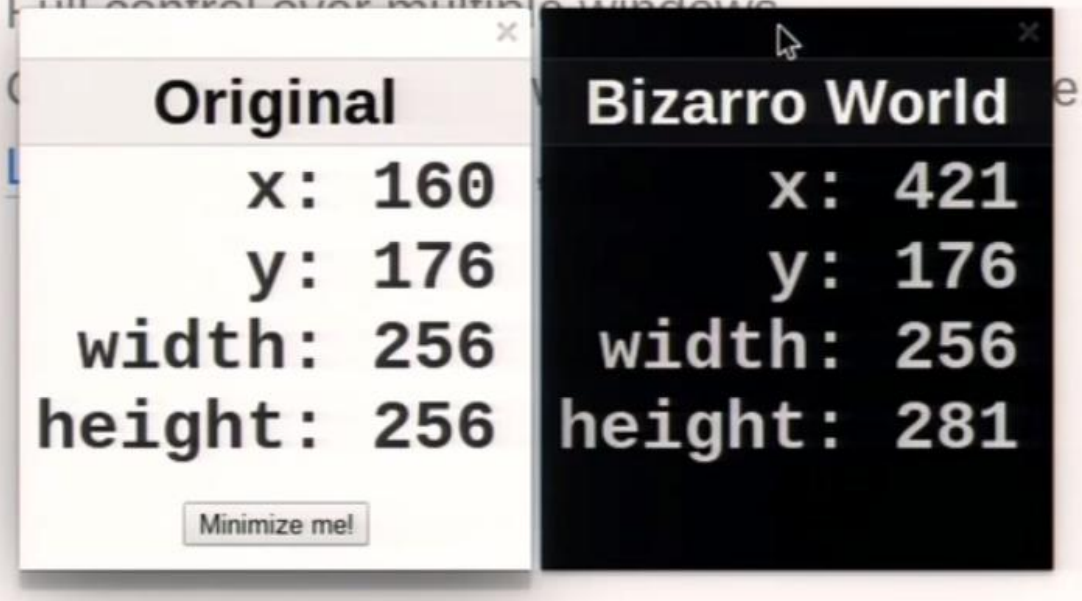

ome OS
Extensions
Developer mode
Apps IO 2012 1.1
Chrome Apps IO 2012 presentation.
Allow in incognito
Reload (Ctrl+R)
Enabled
Search
Chrome
Chrome Web
Apps IO 2012
Files
Games
Gmail
Google Drive
Google Maps
Google+
MiniCodeEdit
Music
Scratchpad
YouTube
me OS. Formats supported: .doc, .docx, .xls,
This app is a quick shortcut to the Games

Enhanced User Interface

- Full control over multiple windows.
- Custom window frame without browser chrome.

Enhanced User Interface

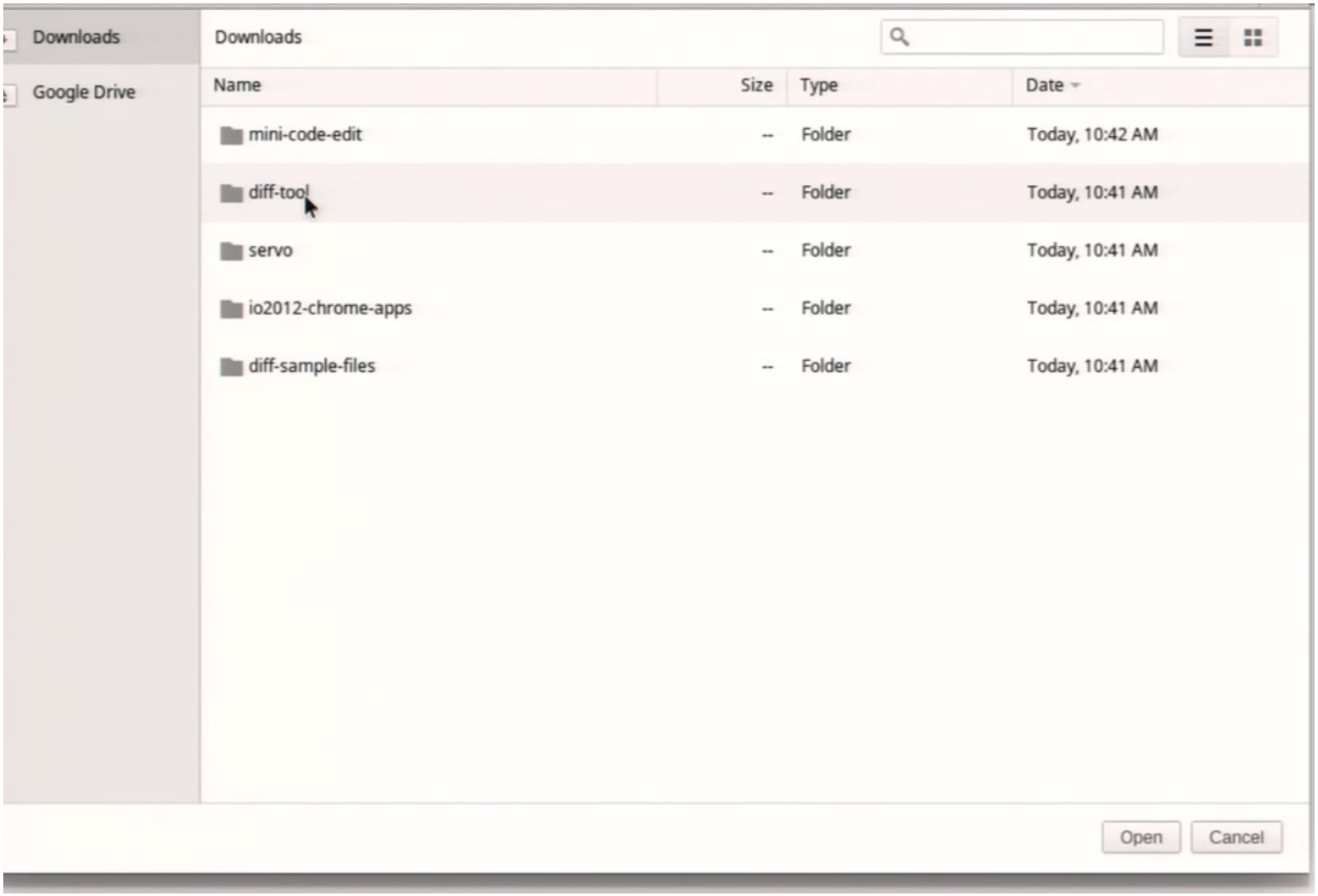
- Full control over multiple windows
- C… …e.
- L…

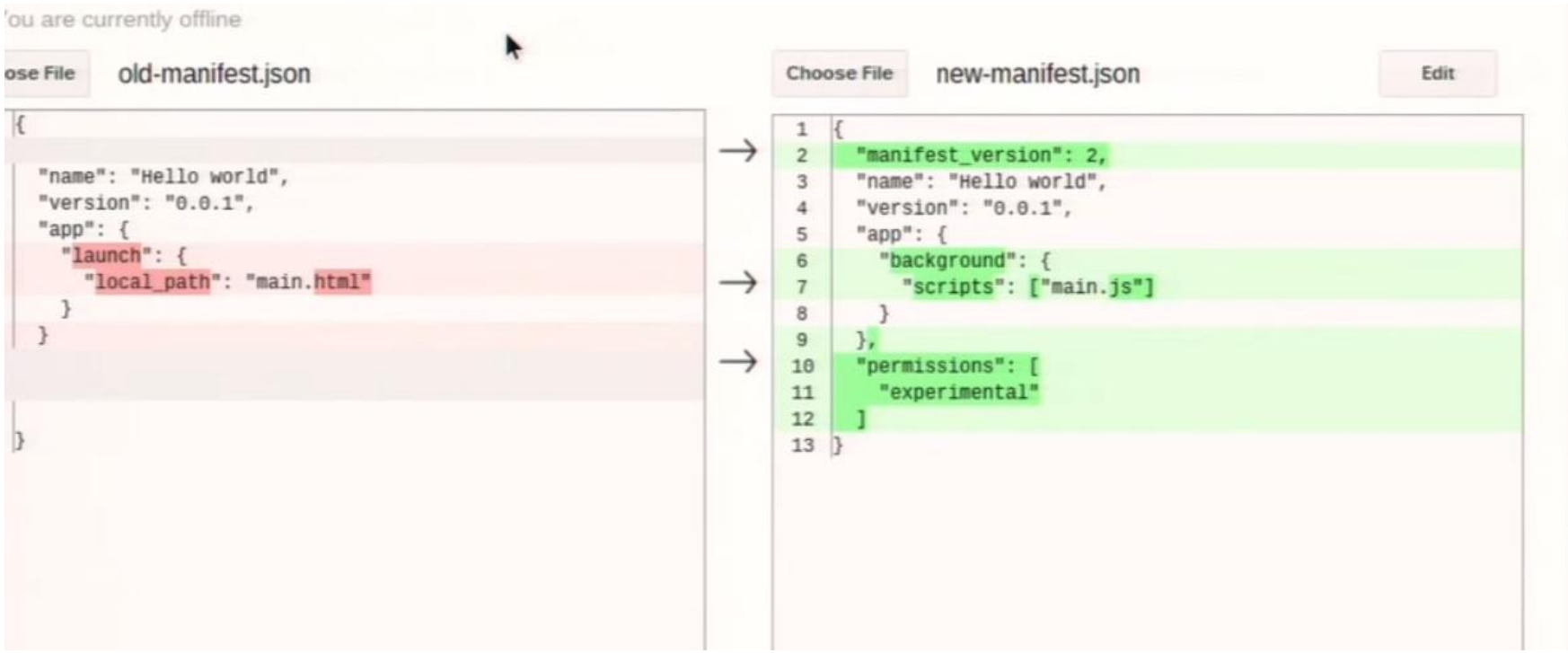


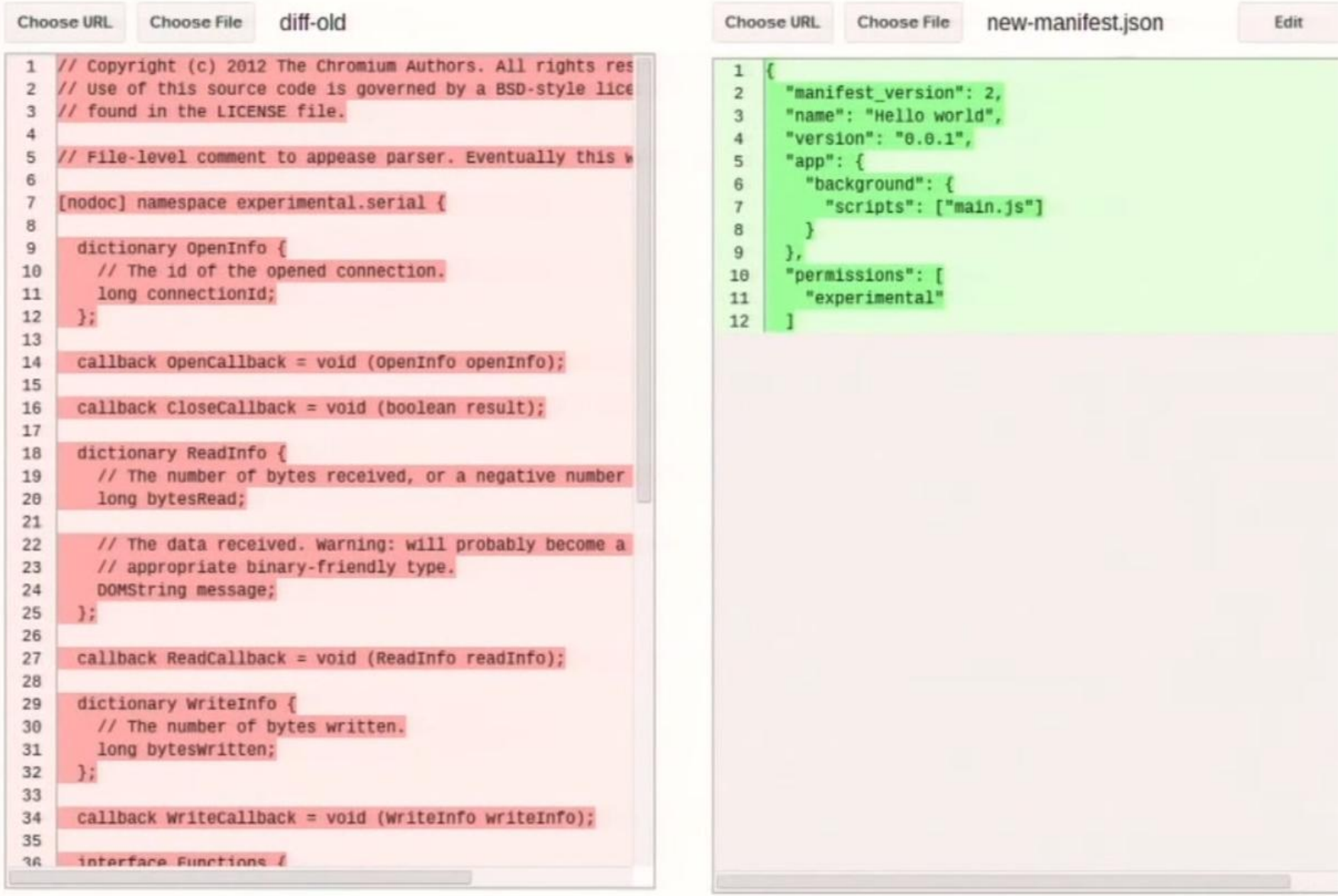
Demo

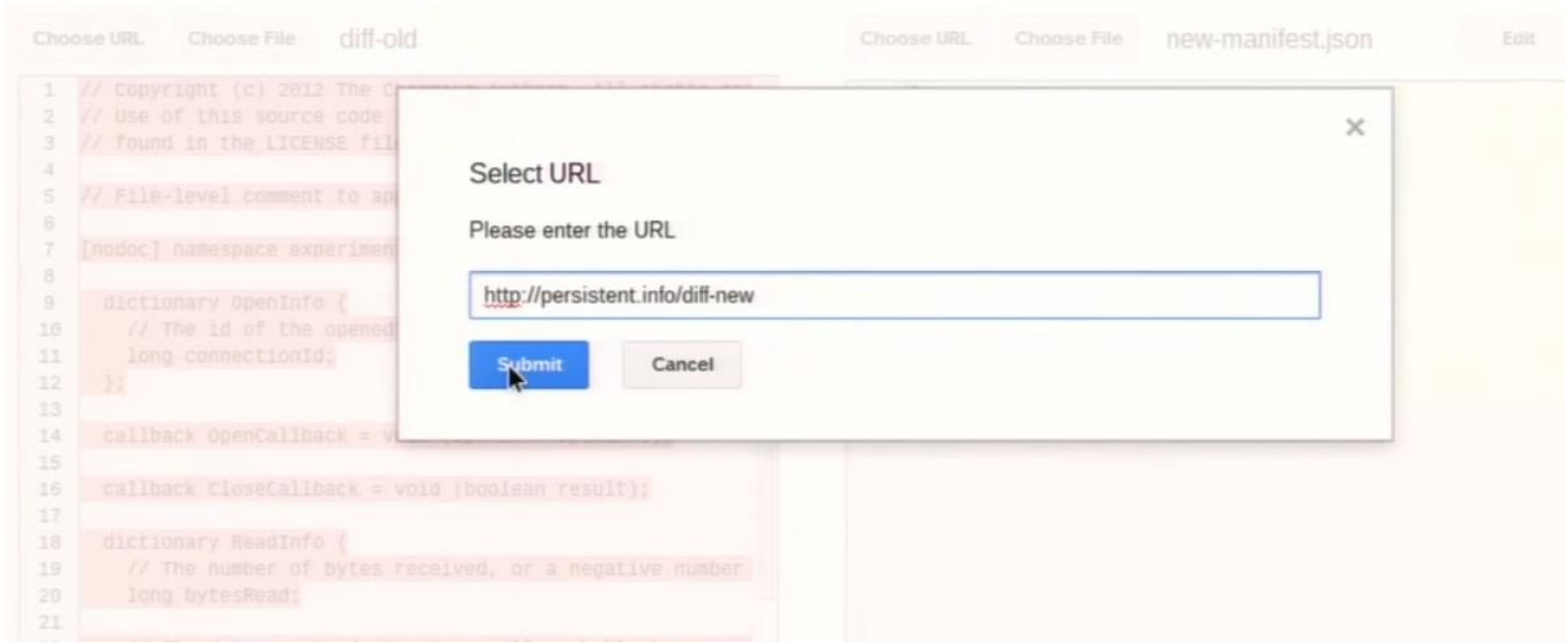
Offline by Default

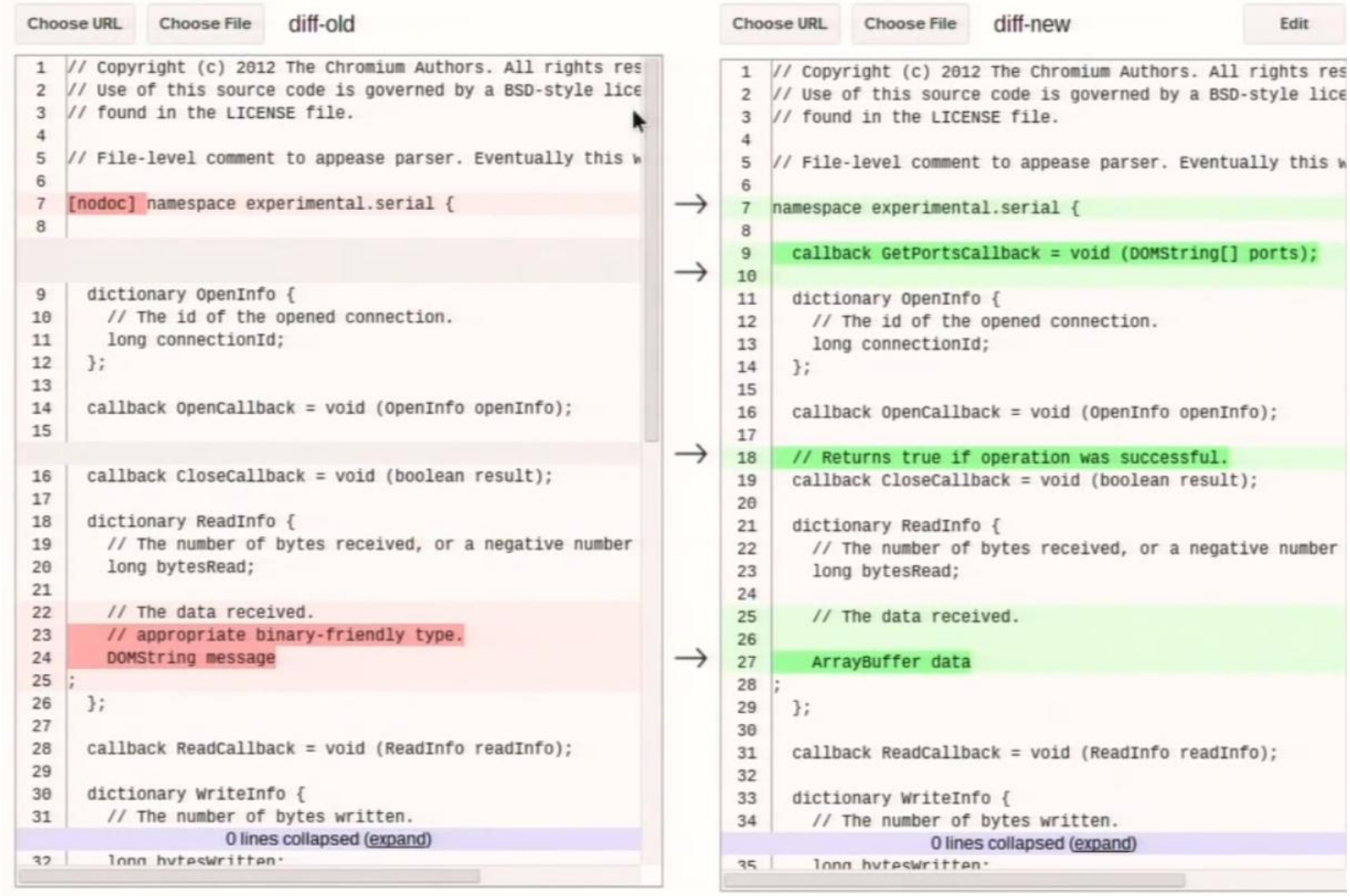
- Packaged app UI and logic is loaded and run locally.
- Enforced separation of client UI and data.
- APIs degrade gracefully when offline.
- Apps are launched from outside of the browser.


Downloads
Google Drive
Downloads
Name
Size
Type
Date
mini-code-edit
--
Folder
Today, 10:42 AM
diff-tool
--
Folder
Today, 10:41 AM
servo
--
Folder
Today, 10:41 AM
io2012-chrome-apps
--
Folder
Today, 10:41 AM
diff-sample-files
--
Folder
Today, 10:41 AM
Open
Cancel


You are currently offline
ose File
old-manifest.json
{
"name": "Hello world",
"version": "0.0.1",
"app": {
"launch": {
"local_path": "main.html"
}
}
}
Choose File
new-manifest.json
Edit
1 {
2 "manifest_version": 2,
3 "name": "Hello world",
4 "version": "0.0.1",
5 "app": {
6 "background": {
7 "scripts": ["main.js"]
8 }
9 },
10 "permissions": [
11 "experimental"
12]
13 }

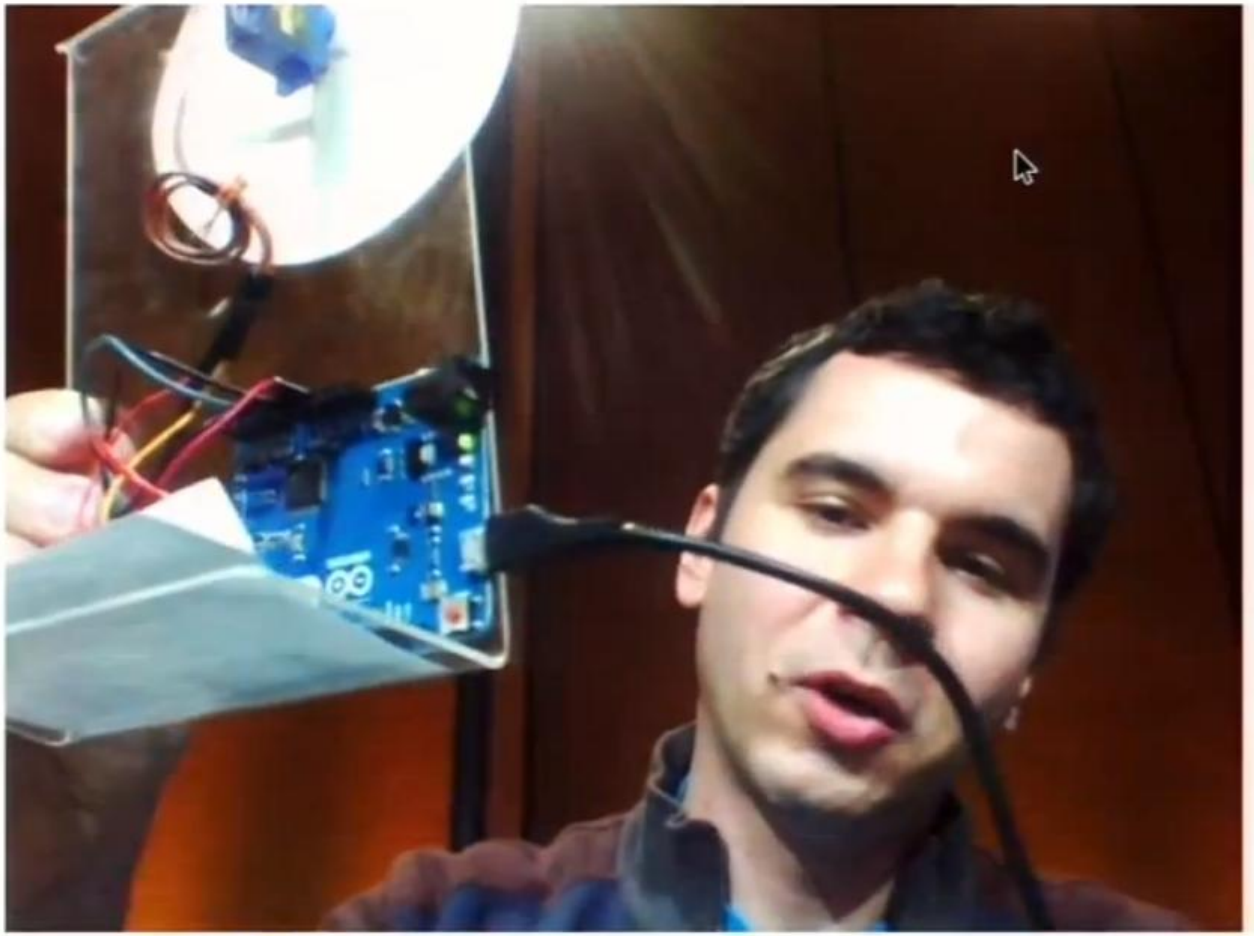

Choose URL
Choose File
diff-old
// Copyright (c) 2012 The Chromium Authors. All rights res
// Use of this source code is governed by a BSD-style lice
// found in the LICENSE file.
// File-level comment to appease parser. Eventually this w
[nodoc] namespace experimental.serial {
dictionary OpenInfo {
// The id of the opened connection.
long connectionId;
};
callback OpenCallback = void (OpenInfo openInfo);
callback CloseCallback = void (boolean result);
dictionary ReadInfo {
// The number of bytes received, or a negative number
long bytesRead;
// The data received. Warning: will probably become a
// appropriate binary-friendly type.
DOMString message;
};
callback ReadCallback = void (ReadInfo readInfo);
dictionary WriteInfo {
// The number of bytes written.
long bytesWritten;
};
callback WriteCallback = void (WriteInfo writeInfo);
interface Functions {
Choose URL
Choose File
new-manifest.json
Edit
{
"manifest_version": 2,
"name": "Hello world",
"version": "0.0.1",
"app": {
"background": {
"scripts": ["main.js"]
}
},
"permissions": [
"experimental"
]


Choose URL
Choose File
diff-old
Choose URL
Choose File
new-manifest.json
Edit
Select URL
Please enter the URL
http://persistent.info/diff-new
Submit
Cancel


Choose URL
Choose File
diff-old
Choose URL
Choose File
diff-new
Edit
// Copyright (c) 2012 The Chromium Authors. All rights res
// Use of this source code is governed by a BSD-style lice
// found in the LICENSE file.
// File-level comment to appease parser. Eventually this w
[nodoc] namespace experimental.serial {
dictionary OpenInfo {
// The id of the opened connection.
long connectionId;
};
callback OpenCallback = void (OpenInfo openInfo);
callback CloseCallback = void (boolean result);
dictionary ReadInfo {
// The number of bytes received, or a negative number
long bytesRead;
// The data received.
// appropriate binary-friendly type.
DOMString message
;
};
callback ReadCallback = void (ReadInfo readInfo);
dictionary WriteInfo {
// The number of bytes written.
0 lines collapsed (expand)
// Copyright (c) 2012 The Chromium Authors. All rights res
// Use of this source code is governed by a BSD-style lice
// found in the LICENSE file.
// File-level comment to appease parser. Eventually this w
namespace experimental.serial {
callback GetPortsCallback = void (DOMString[] ports);
dictionary OpenInfo {
// The id of the opened connection.
long connectionId;
};
callback OpenCallback = void (OpenInfo openInfo);
// Returns true if operation was successful.
callback CloseCallback = void (boolean result);
dictionary ReadInfo {
// The number of bytes received, or a negative number
long bytesRead;
// The data received.
ArrayBuffer data
;
};
callback ReadCallback = void (ReadInfo readInfo);
dictionary WriteInfo {
// The number of bytes written.
0 lines collapsed (expand)

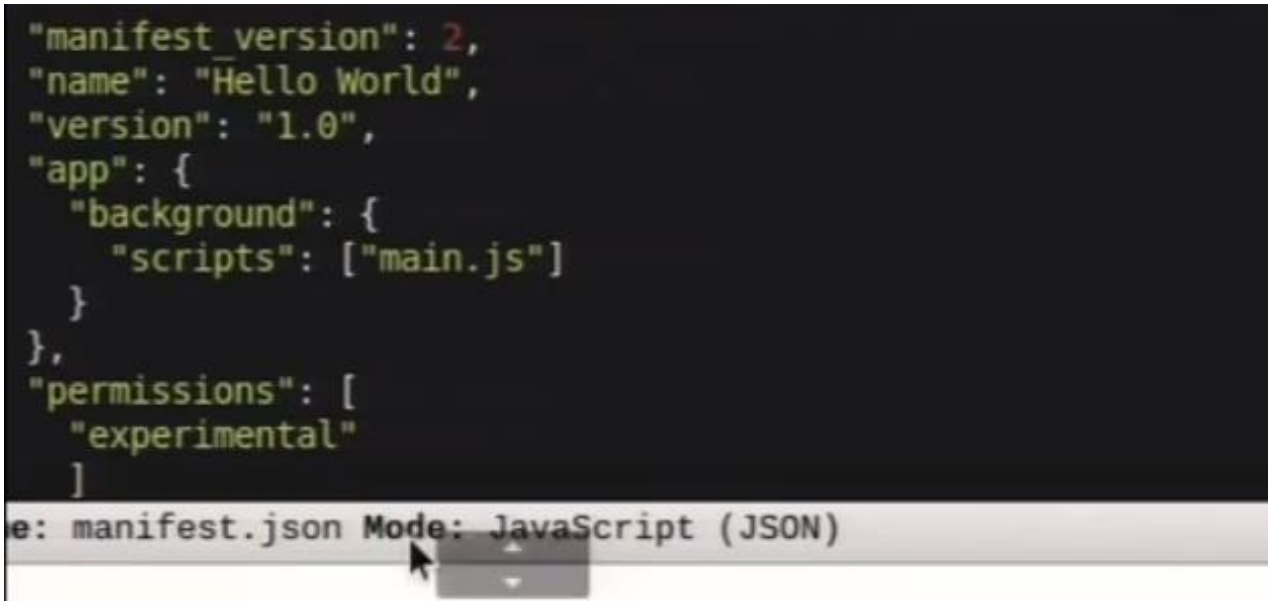
New APIs

- System
- Shared Data
- Services

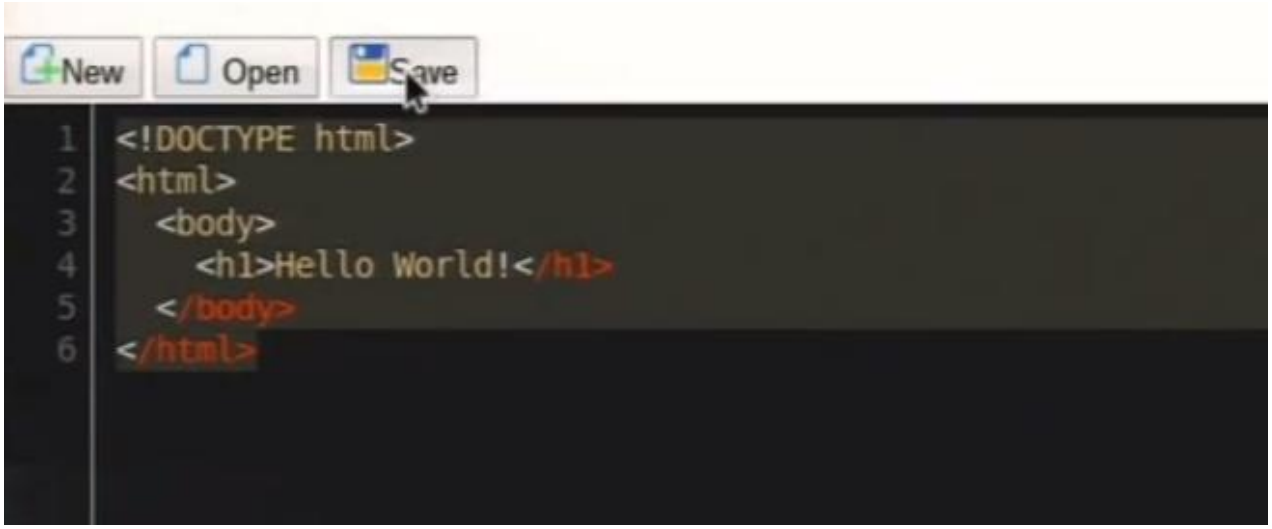


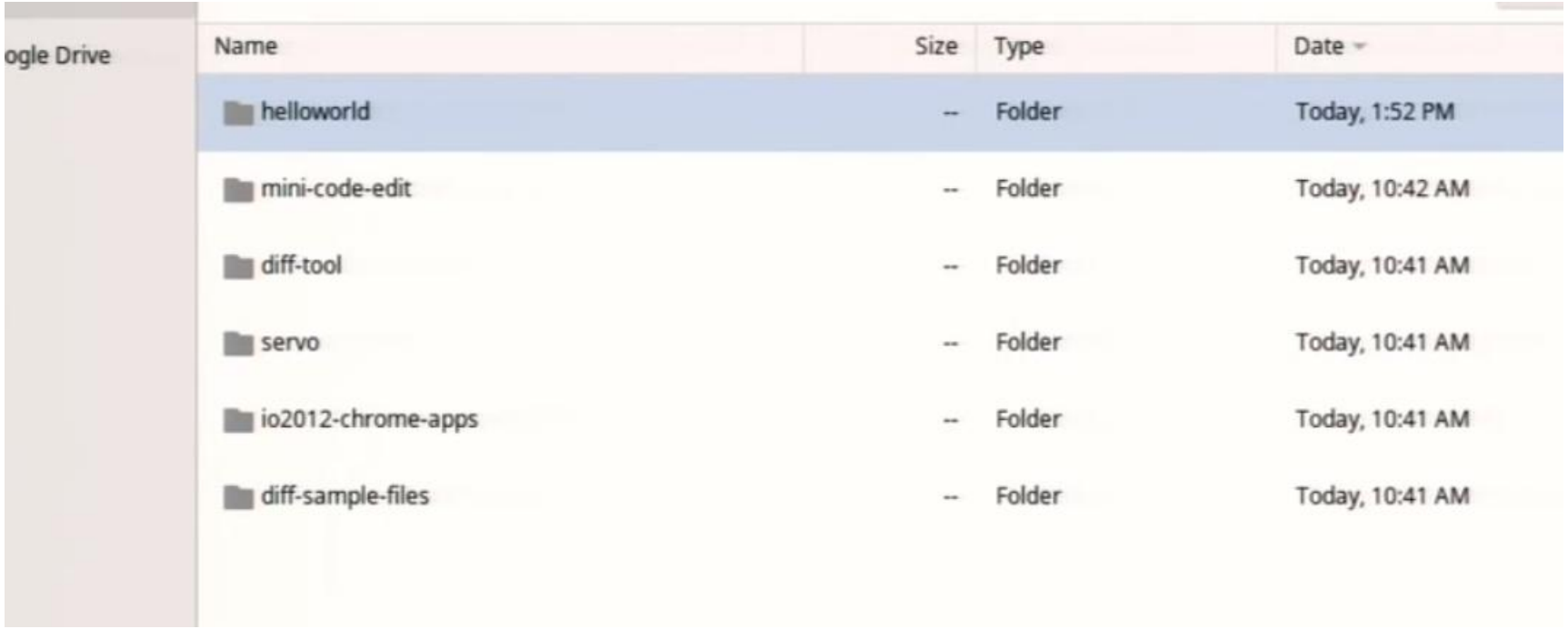
The Programming Model

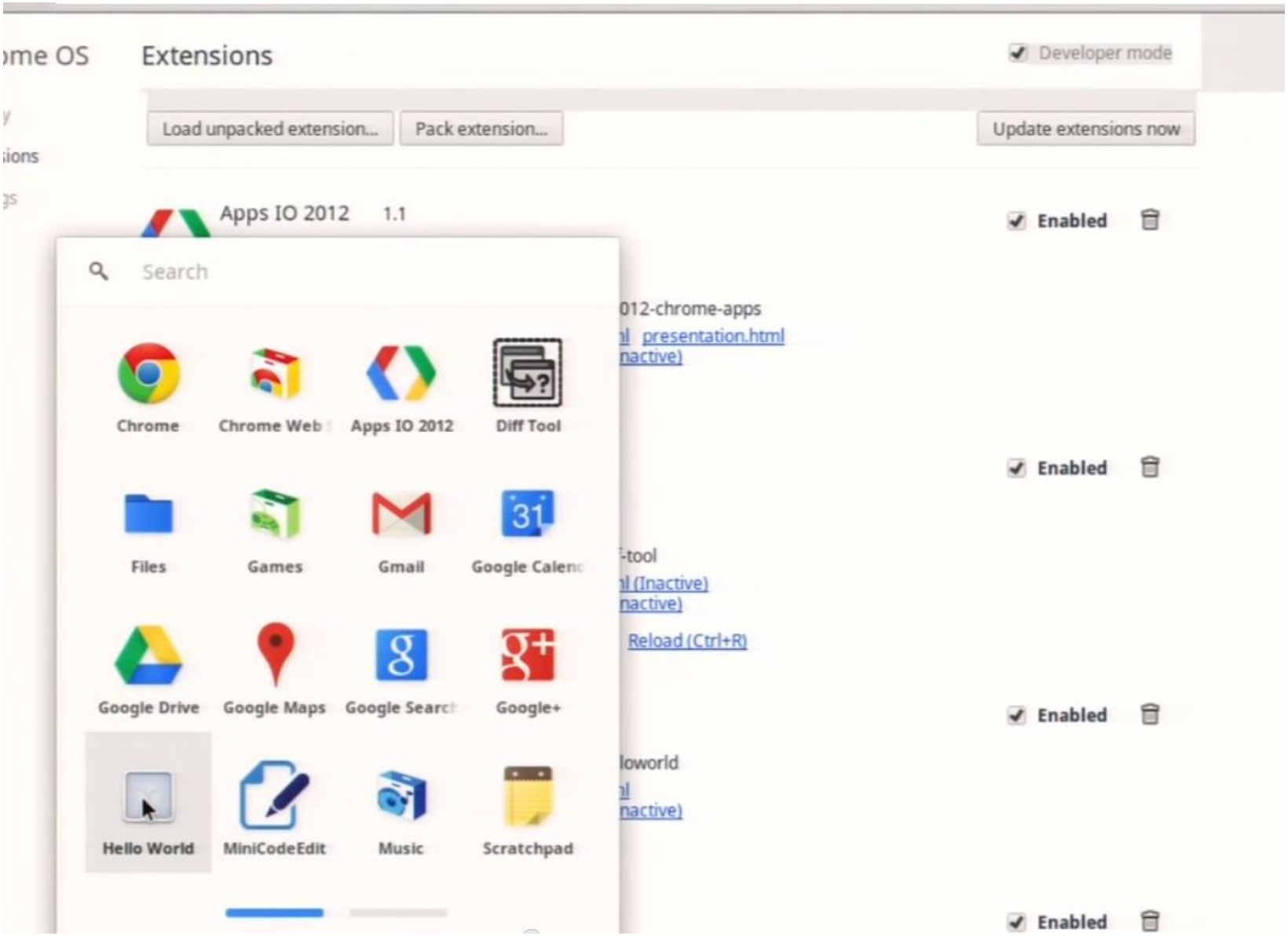
- Packaged apps.

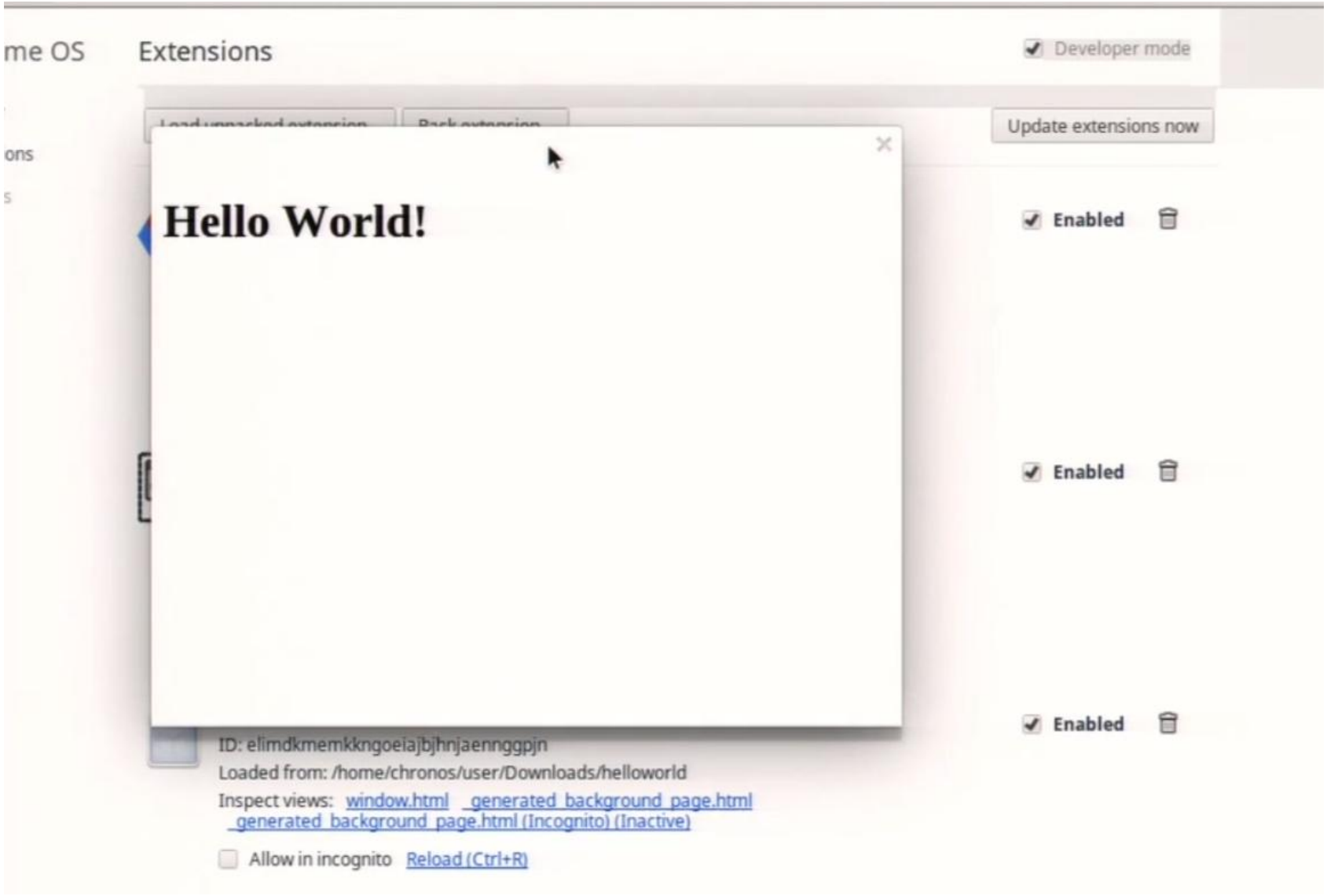

"manifest_version": 2,
"name": "Hello World",
"version": "1.0",
"app": {
"background": {
"scripts": ["main.js"]
}
},
"permissions": [
"experimental"
]
e: manifest.json Mode: JavaScript (JSON)


hrome.experimental.app.onLaunched.addListener(function() {
chrome.appWindow.create('window.html');
);


New
Open
Save
1 <!DOCTYPE html>
2 <html>
3 <body>
4 <h1>Hello World!</h1>
5 </body>
6 </html>


ogle Drive
Name
Size
Type
Date
helloworld
--
Folder
Today, 1:52 PM
mini-code-edit
--
Folder
Today, 10:42 AM
diff-tool
--
Folder
Today, 10:41 AM
servo
--
Folder
Today, 10:41 AM
io2012-chrome-apps
--
Folder
Today, 10:41 AM
diff-sample-files
--
Folder
Today, 10:41 AM


ome OS
Extensions
Developer mode
Load unpacked extension...
Pack extension...
Update extensions now
Apps IO 2012 1.1
Enabled
Search
Chrome
Chrome Web
Apps IO 2012
Diff Tool
Files
Games
Gmail
Google Calen
Google Drive
Google Maps
Google Searc
Google+
Hello World
MiniCodeEdit
Music
Scratchpad
012-chrome-apps
presentation.html
nactive)
Enabled
-tool
l (Inactive)
nactive)
Reload (Ctrl+R)
Enabled
loworld
nactive)
Enabled


me OS
Extensions
Developer mode
Update extensions now
Hello World!
Enabled
Enabled
Enabled
ID: elimdkmemkkngoeiajbjhnjaennggpjn
Loaded from: /home/chronos/user/Downloads/helloworld
Inspect views: window.html _generated_background_page.html
_generated_background_page.html (Incognito) (Inactive)
Allow in incognito
Reload (Ctrl+R)

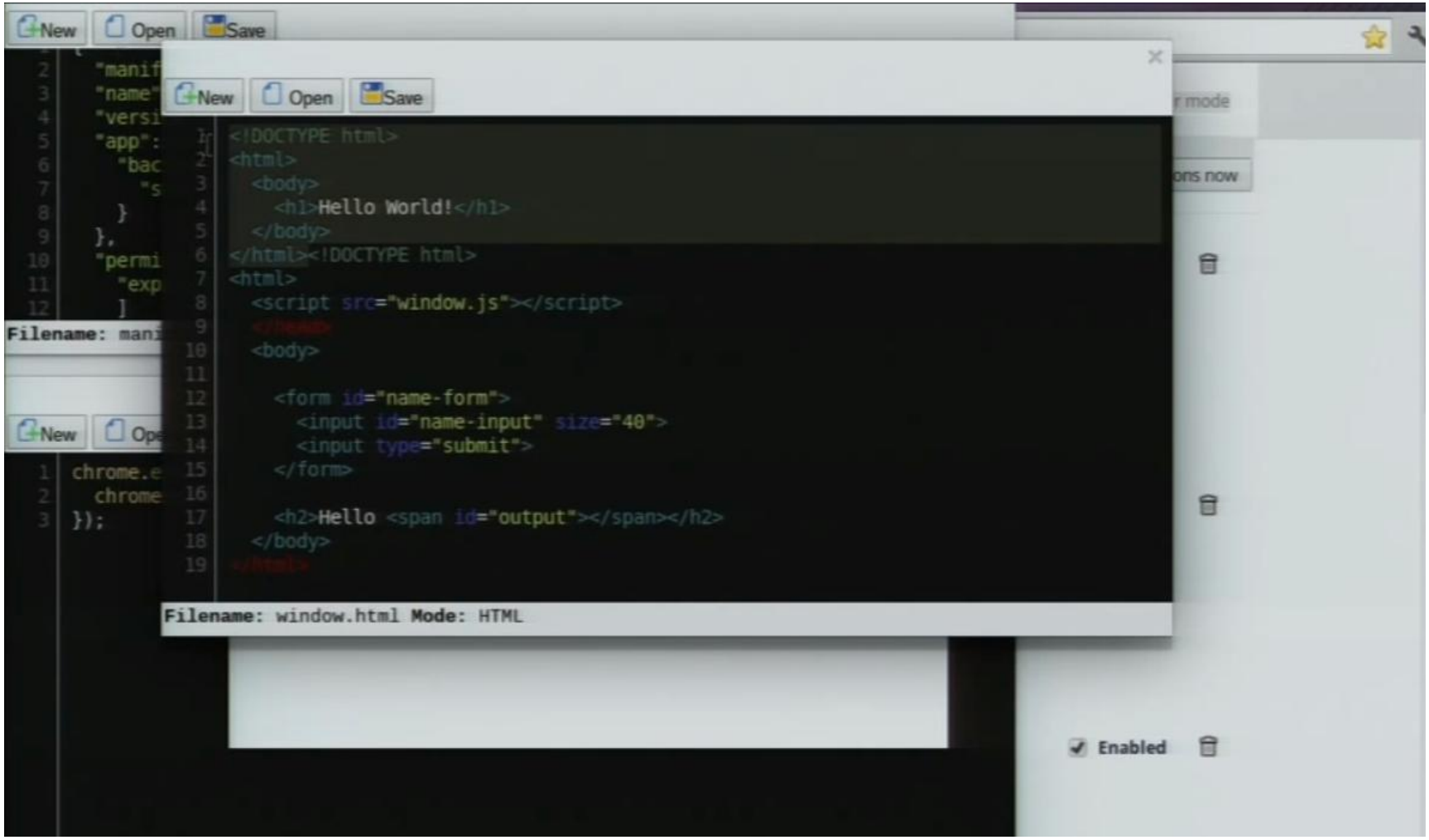
The Programming Model

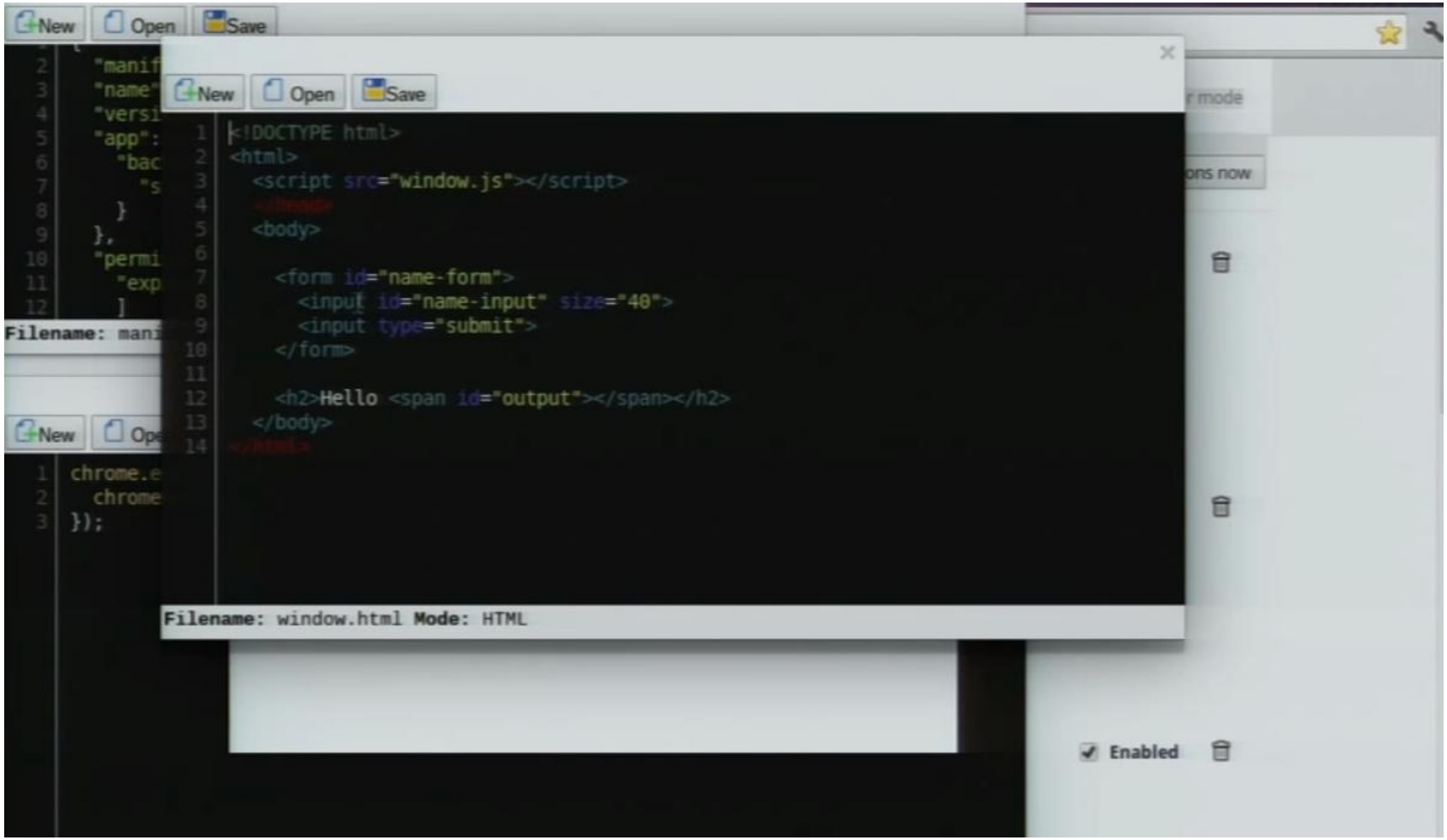
- Packaged apps.
- Background page as the hub.
- App lifetime controlled by runtime; event-driven.
- "Single-page", no navigation.
- Some web features deprecated.

Demo

The Security Model

- Process isolation.
- Sandboxing.
- Permissions model.


New
Open
Save
<!DOCTYPE html>
<html>
<body>
<h1>Hello World!</h1>
</body>
</html><!DOCTYPE html>
<html>
<script src="window.js"></script>
<body>
<form id="name-form">
<input id="name-input" size="40">
<input type="submit">
</form>
<h2>Hello </h2>
</body>
Filename: window.html Mode: HTML
Filename: mani
chrome.e
chrome
});
Enabled


New
Open
Save
<!DOCTYPE html>
<html>
<script src="window.js"></script>
<body>
<form id="name-form">
<input id="name-input" size="40">
<input type="submit">
</form>
<h2>Hello </h2>
</body>
Filename: window.html Mode: HTML
Enabled

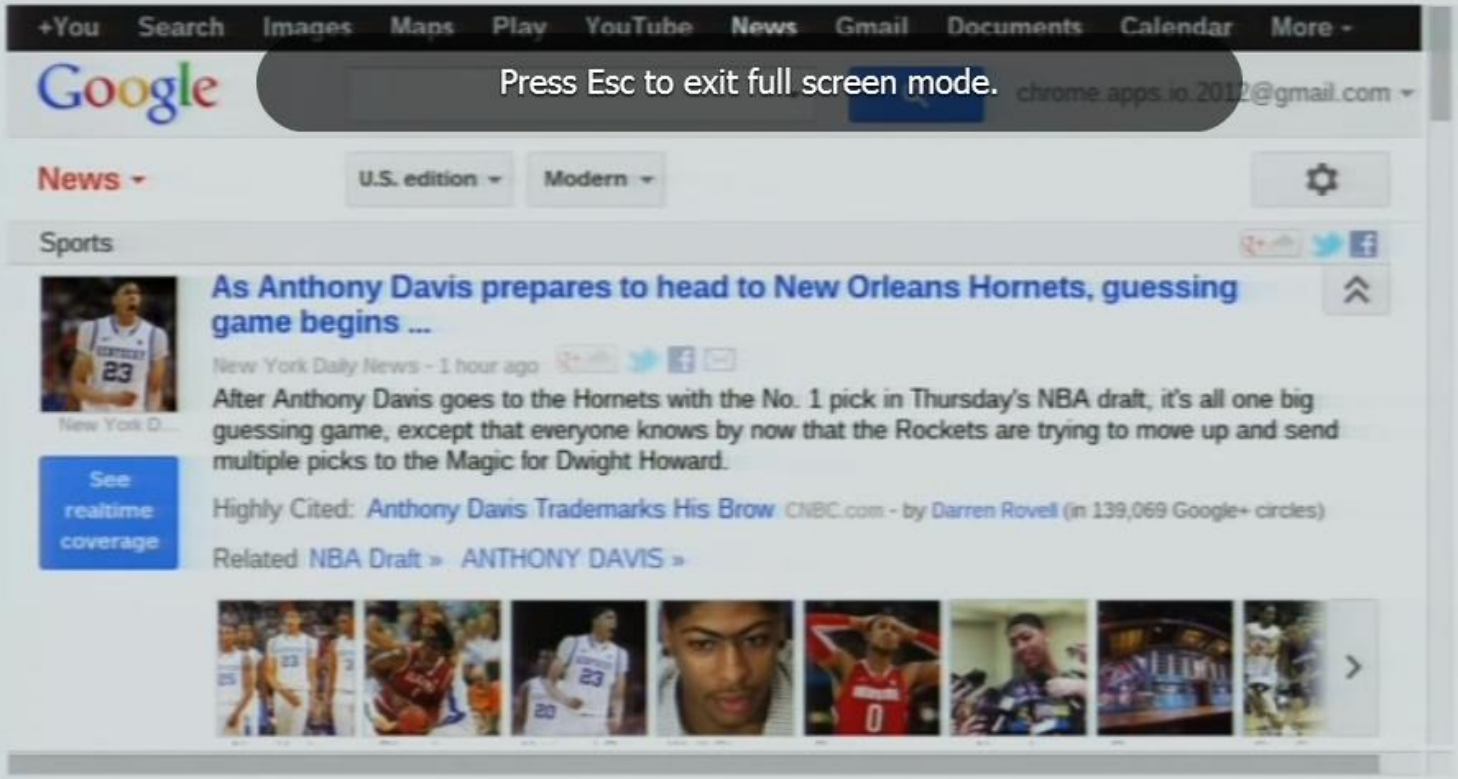
The Security Model

- Process isolation.
- Sandboxing.
- Permissions model.
- Content Security Policy (CSP).
- Storage isolation.
- Explicit shared data APIs.
- No extension APIs.

Demo

<browser>

```
<browser src="http://news.google.com/" width="750" height="300">
```



Take it For a Spin

Demo

New Open Save

```
  };
}

function openSelectedPort() {
  var portPicker = document.getElementById('port-picker');
  var selectedPort = portPicker.options[portPicker.selectedIndex].value;
  chrome.experimental.serial.open(selectedPort, onOpen);
}

onload = function() {
  var tv = document.getElementById('tv');
  navigator.webkitGetUserMedia(
      {video: true},
      function(stream) {
        tv.classList.add('working');
        document.getElementById('camera-output').src =
            webkitURL.createObjectURL(stream);
      },
      function() {
        tv.classList.add('broken');
      });

  document.getElementById('position-input').onchange = function() {
    setPosition(parseInt(this.value, 10));
  };

  chrome.experimental.serial.getPorts(function(ports) {
    buildPortPicker(ports)
    openSelectedPort();
  });
};

```

Filename: servo.js Mode: JavaScript

Apps Evolved

Breaking Out of the Browser | Enhanced User Interface | Offline by Default | New APIs

- Available for testing on Canary
- System Applications working group

Check Out More Demos

- Media player - Sencha
- Photobooth - Kendo UI
- Text Editor - AngularJS (Google)
- "Johnny" - Google
- github.com/GoogleChrome

Thank You!

Try out the developer preview and send us feedback.

developer.chrome.com/apps

chromium-apps@chromium.org

#chromium-apps (freenode)