

LIBOCON19

Using Makefile and m4 to bundle Javascript

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Collabora Productivity

Overview

- Jakefile
- Makefile
- M4
- `loleaflet.html.m4`



leaflet version

package.json

```
1 {  
2   "name": "leaflet",  
3   "version": "0.8.0-dev",  
4   "description": "JavaScript library for mobile-friendly interactive maps",  
5   "devDependencies": {  
-   "..."
```



leaflet bundling

Jakefile.js

```
35 desc('Combine and compress Leaflet source files');
36 task('build', {async: true}, function (compsBase32, buildName) {
37     var v;
38
39     jake.exec('git log -1 --pretty=format:"%h"', {breakOnError: false}, function () {
40         build.build(complete, v, compsBase32, buildName);
41
42     }).on('stdout', function (data) {
43         v = version + ' (' + data.toString() + ')';
44     }).on('error', function () {
45         v = version;
46     });
47 });
```



leaflet bundling

build.js

```
84 exports.build = function (callback, version, compsBase32, buildName) {
85
86     var files = getFiles(compsBase32);
87
88     console.log('Concatenating and compressing ' + files.length + ' files...');
89
90     var copy = fs.readFileSync('src/copyright.js', 'utf8').replace('{VERSION}', version)
91     intro = '(function (window, document, undefined) {';
92     outro = '}(window, document));';
93     newSrc = copy + intro + combineFiles(files) + outro,
94
95     pathPart = 'dist/leaflet' + (buildName ? '-' + buildName : ''),
96     srcPath = pathPart + '-src.js',
97
98     oldSrc = loadSilently(srcPath),
99     srcDelta = getSizeDelta(newSrc, oldSrc, true);
```



leaflet source files

dep.js

```
1 var deps = {  
2     Core: {  
3         src: ['Leaflet.js',  
4             'core/Util.js',  
5             'core/Class.js',  
6             'core/Events.js',  
7             'core/Browser.js',  
8             'geometry/Point.js',  
9             'geometry/Bounds.js',  
10            'geometry/Transformation.js',  
11            'dom/DomUtil.js',  
12            'geo/LatLng.js',  
13            'geo/LatLngBounds.js',  
14            'geo/projection/Projection.LonLat.js',  
15            'geo/projection/Projection.SphericalMercator.js',  
16            'geo/crs/CRS.js',  
17            'geo/crs/CRS.Simple.js',
```



leaflet debugging

debug/map/map.html

```
<html>
<head>
  <title>Leaflet debug page</title>

  <link rel="stylesheet" href="../../dist/leaflet.css" />

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <link rel="stylesheet" href="../css/screen.css" />

  <script type="text/javascript" src="../../build/deps.js"></script>
  <script src="../leaflet-include.js"></script>
</head>
```




leaflet debugging

Browser inspect elements

```
▼ <head>
  <title>Leaflet debug page</title>
  <link rel="stylesheet" href="../../dist/leaflet.css">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="../../css/screen.css">
  <script type="text/javascript" src="../../build/deps.js"></script>
  <script src="../../leaflet-include.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/Leaflet.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/core/Util.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/core/Class.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/core/Events.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/core/Browser.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geometry/Point.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geometry/Bounds.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geometry/Transformation.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/dom/DomUtil.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geo/LatLng.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geo/LatLngBounds.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geo/projection/Projection.LonLat.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geo/projection/Projection.SphericalMercator.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geo/crs/CRS.js"></script>
  <script src="file:///tmp/git-leaflet/debug/./src/geo/crs/CRS.Simple.js"></script>
```



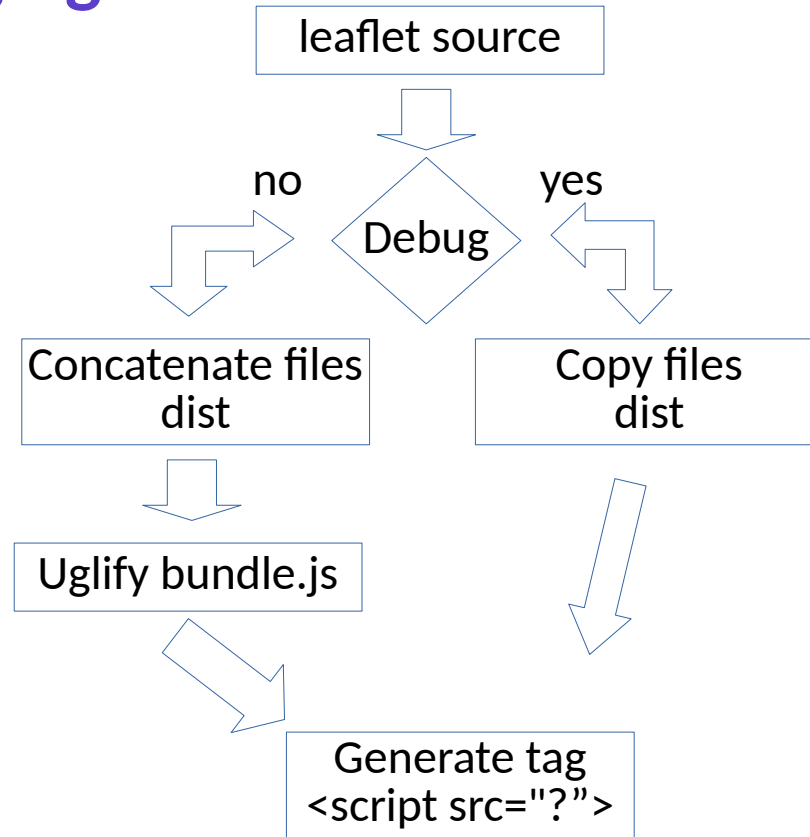

leaflet tools

Node Package Manager (npm)

- Eslint (linting utility for JavaScript)
- Jake (JavaScript build tool)
- Uglify (minifier, compressor and beautifier toolkit)



leaflet debugging





leaflet Makefile

lleaflet/Makefile.am

```
178 if ENABLE_DEBUG
179 $(LOLEAFLET_PREFIX)/dist/lleaflet-src.js: $(LOLEAFLET_JS_DST)
180     @echo "Checking for lleaflet JS errors..."
181     @NODE_PATH=$(abs_builddir)/node_modules $(NODE) node_modules/eslint/bin/eslint.js $(srcdir)/src \
182         $(srcdir)/js --ignore-path $(srcdir)/.eslintignore --config $(srcdir)/.eslintrc
183     @touch $@
184
269 $(builddir)/dist/src/%.js: $(srcdir)/src/%.js
270     @mkdir -p $(dir $@)
271     @if test -z '$(ENABLE_BROWSERSYNC)'; then \
272         `cp $< $@`; \
273     else \
274         `echo $< $@`; \
275         `ln -sf $(abs_srcdir)/$< $@`; \
276     fi
```



leaflet Makefile

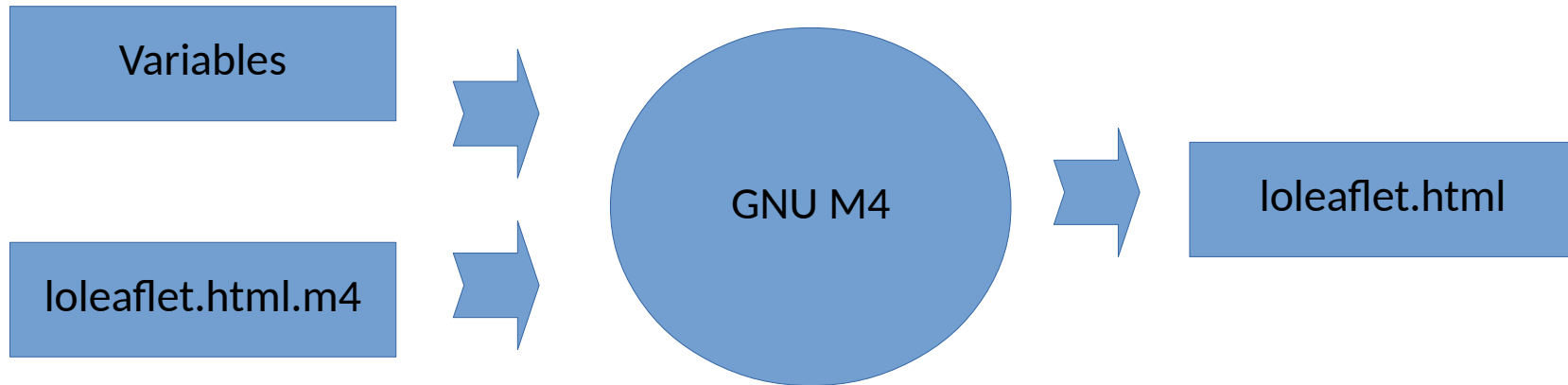
lleaflet/Makefile.am

```
192 else
193 $(LOLEAFLET_PREFIX)/dist/lleaflet-src.js: $(LOLEAFLET_JS_SRC)
194     @mkdir -p $(dir $@)
195     @echo "Checking for lleaflet JS errors..."
196     @NODE_PATH=$(abs_builddir)/node_modules $(NODE) node_modules/eslint/bin/eslint.js $(srcdir)/src \
197         $(srcdir)/js --ignore-path $(srcdir)/.eslintignore --config $(srcdir)/.eslintrc
198     @(cat $(srcdir)/src/copyright.js | sed 's/{VERSION}/$(LOLEAFLET_VERSION)/' - \
199         && echo "(function (window, document, undefined) {" \
200         && awk 'FNR == 1 {print ""} 1' \
201         $(patsubst %.js,$(srcdir)/%.js,$(call LOLEAFLET_JS,$(srcdir)/build/build.js)) \
202         && echo "}(window, document));" > $@
203
```



GNU M4

implementation of the traditional Unix macro processor





leaflet Makefile

lleaflet/Makefile.am

```
224 $(builddir)/dist/lleaflet.html: $(srcdir)/html/lleaflet.html.m4 $(LOLEAFLET_HTML_DST) $(builddir)/dist/bundle.css\  
225     $(builddir)/dist/bundle.css $(builddir)/dist/bundle.js\  
226     @echo "Generating lleaflet.html..."\  
227     @m4 -E -DDEBUG=$(ENABLE_DEBUG) \  
228         -DIOSAPP=$(ENABLE_IOSAPP) \  
229         -DGTKAPP=$(ENABLE_GTKAPP) \  
230         -DANDROIDAPP=$(ENABLE_ANDROIDAPP) \  
231         -DMOBILEAPPNAME="$(APP_NAME)" \  
232         -DLOLEAFLET_CSS="$(subst $(SPACE),$(COMMA),$(LOLEAFLET_CSS_M4))" \  
233         -DBUNDLE_CSS="$(abs_builddir)/dist/bundle.css" \  
234         -DGLOBAL_JS="$(abs_builddir)/dist/global.js" \  
235         -DLOLEAFLET_JS="$(subst $(SPACE),$(COMMA),$(NODE_MODULES_JS) \  
236             $(LOLEAFLET_LIBS_JS) \  
237             $(call LOLEAFLET_JS,$(srcdir)/build/build.js))" \  
238         $(srcdir)/html/lleaflet.html.m4 > $@  
239
```



leaflet.html.m4

lleaflet/html/leaflet.html.m4

```
218 ifelse(MOBILEAPP,[true],
219   ifelse(DEBUG,[true],foreachq([fileJS],[LOLEAFLET_JS],
220     [ <script src="fileJS" defer></script>
221     ]),
222     [ <script src="bundle.js" defer></script>
223     ]),
224   ifelse(DEBUG,[true],foreachq([fileJS],[LOLEAFLET_JS],
225     [ <script src="%SERVICE_ROOT%/lleaflet/%VERSION%/fileJS" defer></script>
226     ]),
227     [ <script src="%SERVICE_ROOT%/lleaflet/%VERSION%/bundle.js" defer></script>
228     ])
229 )dnl
```




debugging

browser

```
<script src="/loleaflet/lb3a2c61b/src/Leaflet.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/errormessages.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/unocommands.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/Log.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/Util.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/LOUtil.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/Class.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/Events.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/Socket.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/core/Browser.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geometry/Point.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geometry/Bounds.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geometry/Transformation.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/dom/DomUtil.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/LatLng.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/LatLngBounds.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/projection/Projection.LonLat.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/projection/Projection.SphericalMercator.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/crs/CRS.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/crs/CRS.Simple.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/crs/CRS.Earth.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/crs/CRS.EPSG3857.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/geo/crs/CRS.EPSG4326.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/map/Map.js" defer></script>
<script src="/loleaflet/lb3a2c61b/src/map/Clipboard.js" defer></script>
```





leaflet tools

Node Package Manager (npm)

- Eslint (linting utility for JavaScript)
- Makefile (controls the generation of executables and other non-source files)
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Thank you

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