

ROCKING AND TOOLING YOUR GEODEV ENVIRONMENT

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“Always code as if the guy who ends up maintaining your code will be a violent psychopath who knows where you live.”

- Martin Golding

Work faster, smarter, and with quality.



"SOFTWARE CRAFTSMANSHIP"



Javascript and Python are the
Batman and Robin of geo dev.



IDE

TASK AUTOMATION
DEV TOOLS

THEME IT

Seti UI (file icons, clean interface/colors)

index.html - /Users/josh6643/Desktop/devsummit/seti-ui-project - Atom

```
1 <!DOCTYPE html>
2 <html>
3
4   <head>
5     <script src="lib/underscore-min.js"></script>
6   </head>
7
8   <body>
9     <div id="map"></div>
10  </body>
11
12 </html>
13
```

index.html 1,1

14 UTF-8 HTML 1

EXTEND IT

```
16
{ 17   .welcome {
18       color: #52656b;
19       border: 1px solid #ff3b77;
20       background: #cdf000;
} 21   }
22
```

ColorHighlighter

Supports variables!

```
3
4   $winter: #52656b;
5   $spring: #ff3b77;
6   $summer: #cdf000;
7
{ 8   .welcome {
9       color: $winter;
10      border: 1px solid $spring;
11      background: $summer;
} 12  }
13
```



```
+ 20 <!-- Custom CSS Rules -jp -->
+ 21 <style type="text/css">
+ 22   .highlight {
+ 23     font-size: 3em;
+ 24     color: #cff370;
+ 25   }
+ 26 </style>
+ 27
```

GitGutter for repo comparison

Emmet for text expansion

```
32
33 ul>li.item$*5|
34
35 <ul>
36   <li class="item1"></li>
37   <li class="item2"></li>
38   <li class="item3"></li>
39   <li class="item4"></li>
40   <li class="item5"></li>
41 </ul>
42
```



```
.editorconfig  x
1 # http://editorconfig.org
2 root = true
3
4 [*]
5 indent_style = space
6 indent_size = 2
7 charset = utf-8
8 trim_trailing_whitespace = true
9 insert_final_newline = true
10
11 [*.md]
12 trim_trailing_whitespace = false
13

.jshintrc  x
1 {
2   "browser": true,
3   "curly": true,
4   "dojo": true,
5   "eqeqeq": true,
6   "esnext": true,
7   "evil": true,
8   "immed": true,
9   "indent": 2,
10  "jquery": true,
11  "latedef": true,
12  "newcap": true,
13  "noarg": true,
14  "quotmark": "single",
15  "regexdash": true,
16  "regexp": true,
17  "smarttabs": true,
18  "sub": true,
19  "trailing": true,
20  "undef": true,
21  "globals": {
22    "Backbone": false,
23    "_": false,
24    "console": false
25  }
26 }
27

.gitignore  x
1 node_modules
2 bower_components
3 dist
```

Protip: *project-specific configs*

The image shows a screenshot of the Anaconda IDE interface. The main window displays a Python file named 'TestJob.py' with the following code:

```
1 import arcpy
2 import Log
3
4
5 class TestJob:
6     def __init__(self, id):
7         # class props
8         self.id = id
9         self.log = Log.Log()
10
11     def testFunction(self):
12         try:
13             return True
14         except Exception as ex:
15             self.log.echo(ex)
16
```

A search bar is visible in the top right corner of the IDE, containing the text 'autoform'. Below the search bar, a tooltip displays 'Anaconda: **Autoform** at PEP8 Errors' and the keyboard shortcut 'Ctrl+Alt+R'.

Anaconda for Python


```
TestJob.py
1 import arcpy
2 import Log
3
4
5 class TestJob:
6     def __init__(self, id):
7         # class props
8         self.id = id
9         self.log = Log.Log()
10
11     def testFunction(self):
12         try:
13             arcpy.MakeF
14             return MakeFeatureLayer_management function
15         except Ex MakeParcelFabricLayer_fabric function
16             self. MakeClosestFacilityLayer_na function
17                 MakeParcelFabricTableView_fabric function
18                 MakeNetCDFFeatureLayer_md function
19                 MakeNetCDFRasterLayer_md function
20                 MakeNetCDFTableView_md function
```

Autocomplete - Even for **Arcpy!**

IDE

TASK AUTOMATION

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GRUNT



npm to install plugins

```
JPeterson-Mac:~ josh6643$ npm install grunt-contrib-clean --save-dev
```

package.json to manage them

```
6
7   "devDependencies": {
8     "grunt-contrib-clean": "^0.6.0",
9     "grunt-contrib-copy": "~0.4.1",
10    "grunt-contrib-jshint": "^0.10.0",
11    "grunt-contrib-sass": "^0.8.1",
12    "grunt-contrib-watch": "~0.5.3",
13    "grunt-shell": "^1.1.1",
14    "load-grunt-tasks": "^0.6.0",
15    "grunt": "~0.4.2",
16    "jshint-stylish": "^1.0.0"
17  },
18
```


Configure tasks in **Gruntfile.js**

```
106 → jshint: {
107     options: {
108         jshintrc: '.jshintrc',
109         reporter: require('jshint-stylish')
110     },
111     all: [
112         'js/**/*.js',
113         '!js/libs/**',
114         '!js/components/**'
115     ]
116 },
117
118 → clean: ['dist'],
119
120 → shell: {
121     bowerInstall: {
122         command: 'bower install'
123     }
124 },
125
126 → watch: {
127     css: {
128         files: ['styles/*.scss',
129             'js/components/smartmap-ui/src/styles/*.scss'],
130         tasks: ['sass:dev']
131     },
132     js: {
133         files: [
134             'js/**/*.js',
135             '!js/libs/**',
136             '!js/components/smartmap-ui/**'
137         ],
138         tasks: ['jshint']
139     }
140 }
```

grunt.registerTask

```
162
163 // All CSS
164 grunt.registerTask('css', ['sass', 'autoprefixer', 'cssmin']);
165
166 // Package presentation to archive
167 grunt.registerTask('package', ['default', 'zip']);
168
169 // Serve presentation locally
170 grunt.registerTask('serve', ['connect', 'watch']);
171
172 // Run tests
173 grunt.registerTask('test', ['jshint', 'qunit']);
174
175 };
```

Chain tasks for common workflows

grunt-contrib-connect

```
95
96   connect: {
97     server: {
98       options: {
99         port: 9001,
100        base: 'www-root'
101      }
102    }
103  },
104
```

start a web server

grunt-concurrent

```
138
139   concurrent: {
140     step1: ['jshint', 'qunit', 'sass'],
141     step2: ['cssmin', 'uglify'],
142     step3: ['copy'],
143     step4: ['zip']
144   },
145
```

run tasks concurrently

grunt-autoprefixer

```
55
56     autoprefixer: {
57       dist: {
58         src: 'css/reveal.css'
59       }
60     },
61
```

add vendor prefixes

grunt-uncss

```
138
139     uncss: {
140       dist: {
141         files: {
142           'dist/css/main.css': ['app/index.html', 'app/about.html']
143         }
144       }
145     }
146
```

remove unused CSS

grunt-shell

```
119
120   shell: {
121     bowerInstall: {
122       command: 'bower install'
123     }
124   },
125
```

run shell commands

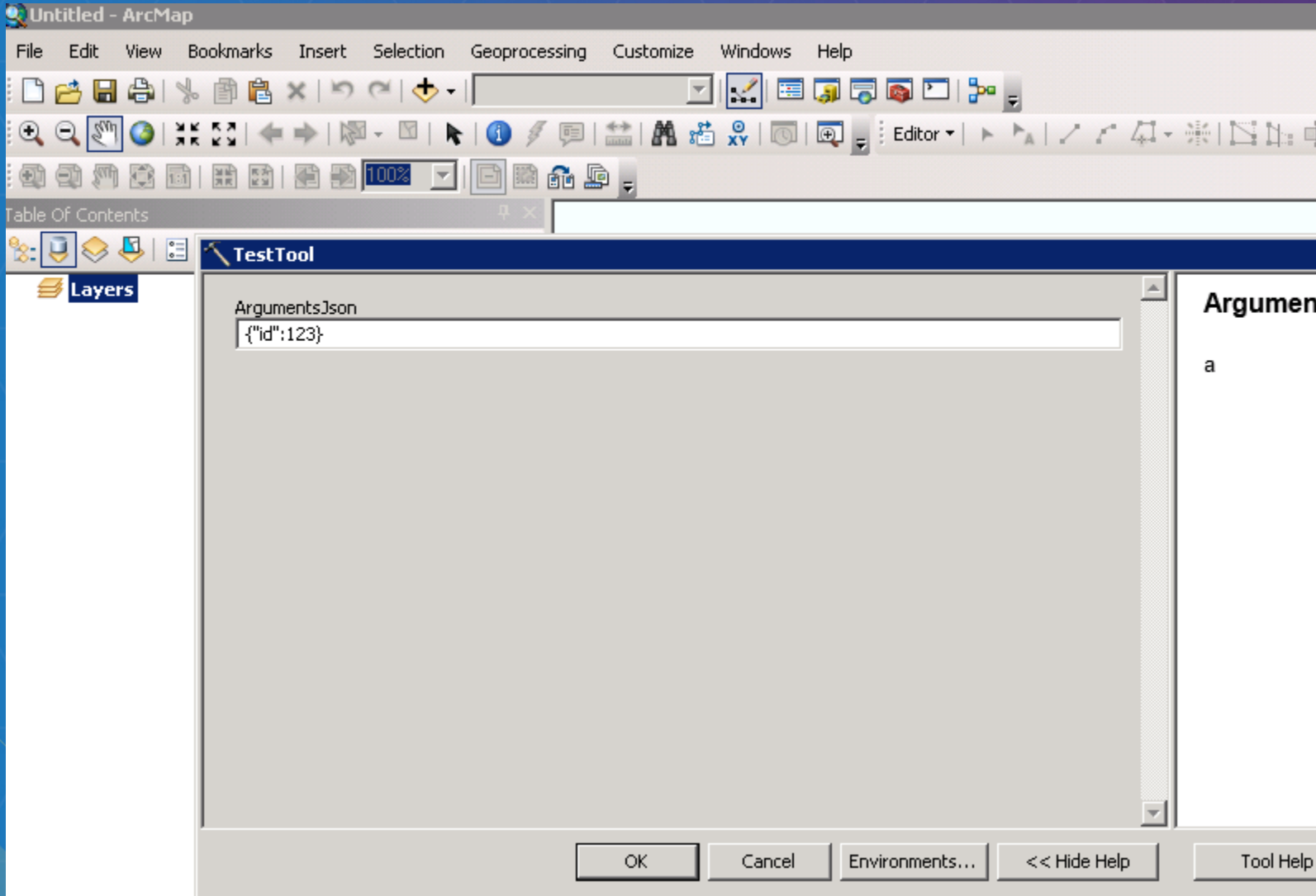
grunt-zip

```
105
106   zip: {
107     'reveal-js-presentation.zip': [
108       'index.html',
109       'css/**',
110       'js/**',
111       'lib/**',
112       'images/**',
113       'plugin/**'
114     ]
115   },
116
```

zip and unzip files

AUTOMATION FOR PYTHON





THE PLAN*

1. Use Python Toolbox
2. Grunt task to copy files from working directory to:

`arcgissystem\arcgisinput\[folder]\[tool name].GPServer\extracted\v101\`

3. Grunt task to restart ArcGIS Server: `grunt-ags-admin`

* Use for development only, and at your own risk!

Task: TestTool

psstdemo1.esri.com/arcgis/rest/services/test/TestTool/GPService/TestTool

ArcGIS REST Services Directory [Login](#) | [Get Token](#)

[Home](#) > [services](#) > [test](#) > [TestTool \(GPService\)](#) > [TestTool](#) [Help](#) | [API Reference](#)

[JSON](#)

Task: TestTool

Display Name: TestTool

Description: A test tool

Category:

Help URL: http://psstdemo1.esri.com/arcgis/rest/directories/arcgisoutput/test/TestTool_GPService/test_TestTool/TestTool.htm

Execution Type: esriExecutionTypeAsynchronous

Parameters:

Parameter: WebMapAsJson
Data Type: GPString
Display Name: WebMapAsJson
Description: WebMapAsJson
Direction: esriGPParameterDirectionInput
Default Value: {"operationalLayers": [], "baseMap": {"baseMapLayers": [{"id": "defaultBasemap", "opacity": 1, "visibility": true, "url": "http://services.arcgisonline.com/ArcGIS/rest/services/World_Topo_Map/MapServer"}, {"title": "Topographic"}], "dpi": 300, "outputSize": [1280, 1024]}, "mapOptions": {"extent": {"xmin": -1.2933906537E7, "ymin": 3993856.886, "xmax": -1.2933371998E7, "ymax": 3994375.189, "spatialReference": {"wkid": 102100}}, "scale": 1234.5, "rotation": -45, "spatialReference": {"wkid": 102100}, "time": [1199145600000, 1230768000000]}}

Parameter Type: esriGPParameterTypeRequired
Category:

Parameter: ResultTiff
Data Type: GPDataFile
Display Name: ResultTiff
Description:
Direction: esriGPParameterDirectionOutput
Default Value:

2:23

Task: TestTool - Google



IDE
TASK AUTOMATION
DEV TOOLS

All modern browsers have dev tools

Chrome

Firefox

Safari



Internet Explorer

Basics are boring, let's see some
advanced techniques...

THANK YOU!

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 /gavinr
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