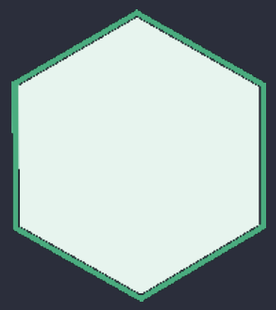
ELECTRON

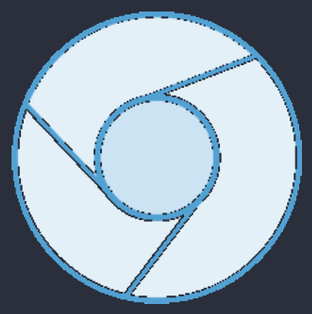
@codebytere

WHAT IS IT?

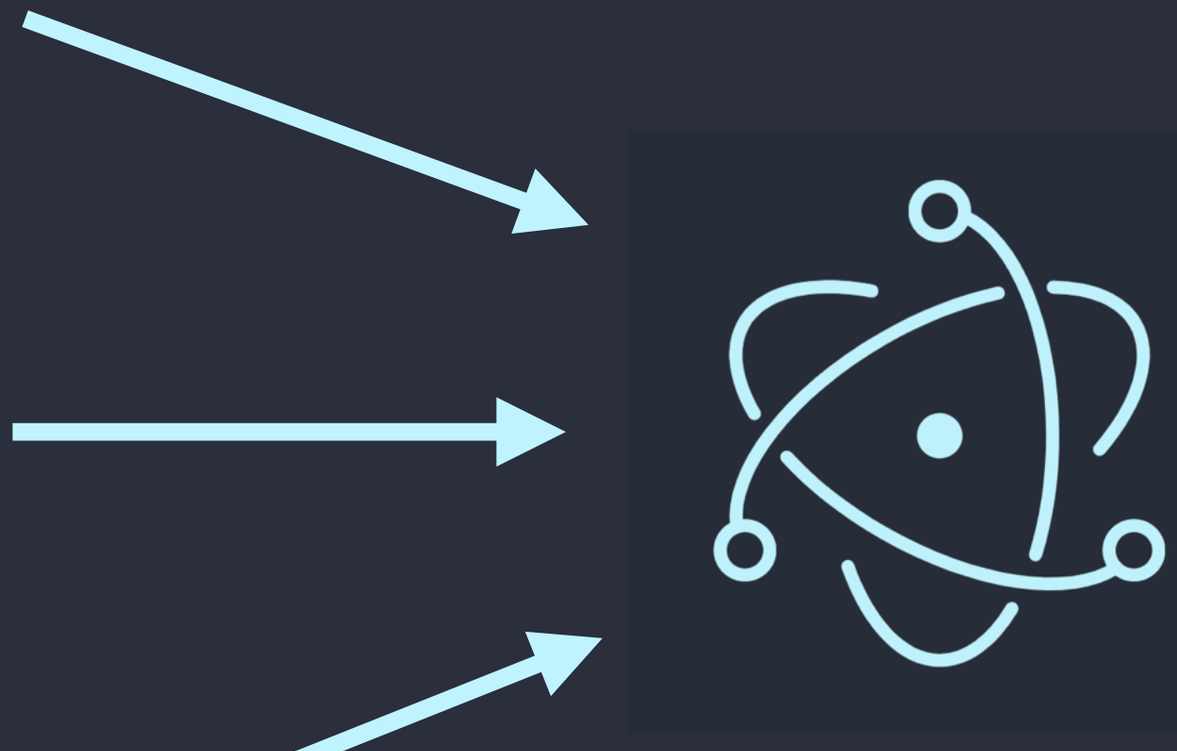
Node.js for filesystems and networks



Chromium for making web pages



Native APIs for three systems



MAIN PROCESS

Node.js APIs

Main Process Modules

main.js

Create Renderer procs

Call native elements

Start/quit

RENDERER PROCESS

Node.js APIs

DOM APIs

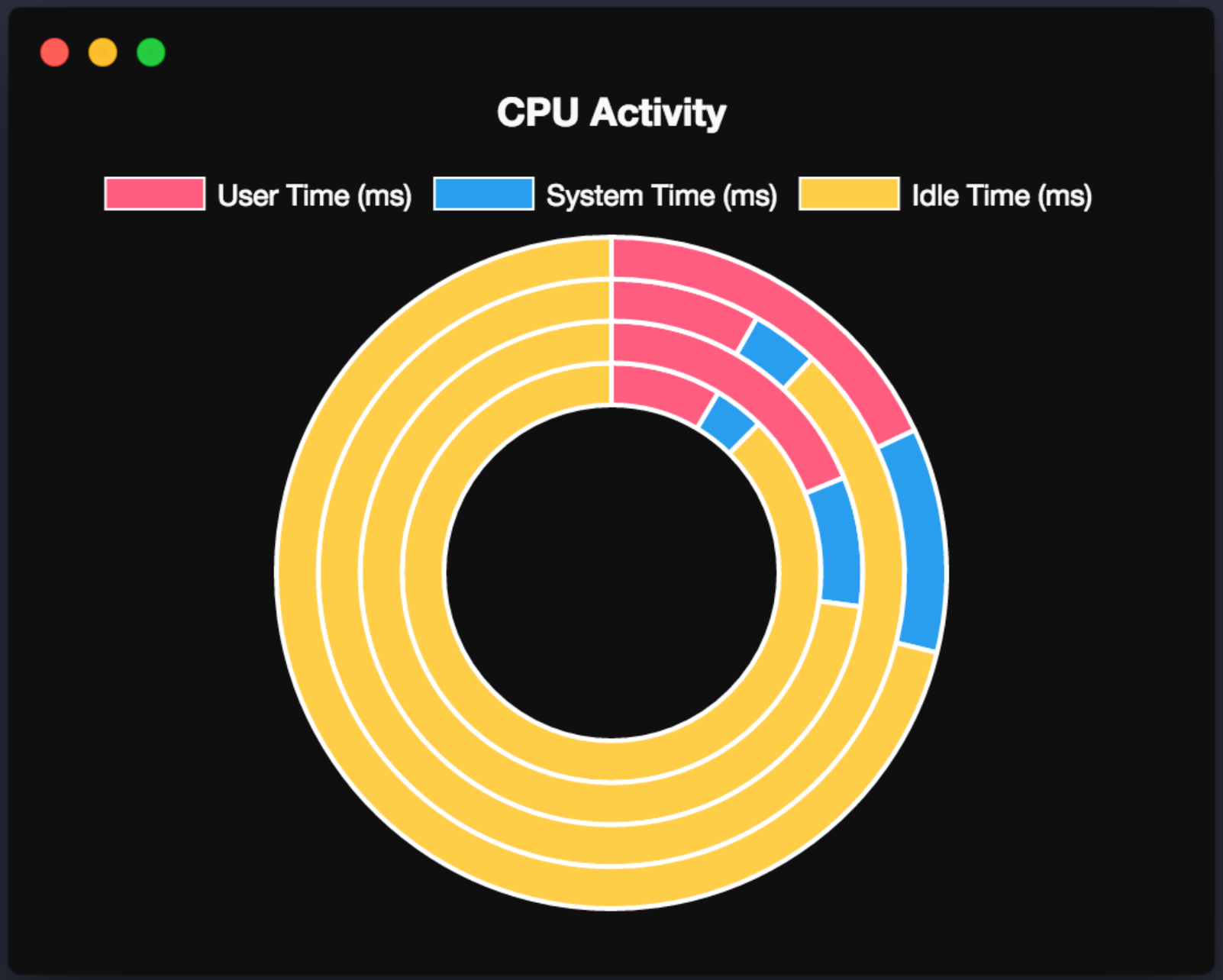
Renderer Modules

index.html

JS page interactions

Design pages with HTML & CSS

ACTIVITY MONITOR



CREATING THE DIRECTORY

`MKDIR` CREATES A DIRECTORY IN THE CURRENT DIRECTORY

codebytere@codebytere: ~/activity-monitor

```
codebytere ~ ❯ mkdir activity-monitor                    9:53PM
codebytere ~ ❯ cd activity-monitor                       9:54PM
codebytere activity-monitor ❯                            9:55PM
```

`CD` MOVES INTO THE SPECIFIED DIRECTORY

CREATING PACKAGE.JSON

CREATE PACKAGE.JSON WITH THE NODE PACKAGE MANAGER

```
npm init

codebytere activity-monitor ❯ npm init                              10:08PM
This utility will walk you through creating a package.json file.
It only covers the most common items, and tries to guess sensible defau
lts.

See `npm help json` for definitive documentation on these fields
and exactly what they do.

Use `npm install <pkg>` afterwards to install a package and
save it as a dependency in the package.json file.

Press ^C at any time to quit.
package name: (activity-monitor)
version: (1.0.0) 0.1.0
description: see a cpu donut!
entry point: (index.js) app.js
test command:
git repository:
keywords:
author: Shelley Vohr
license: (ISC) MIT
```

FILL IN INFORMATION ABOUT YOUR APPLICATION - ENTER LEAVES THE FIELD DEFAULT

INSTALLING ELECTRON

`I` IS SHORTHAND FOR `INSTALL`

`--SAVE` SAVES ELECTRON INTO PACKAGE.JSON

```
codebytere@codebytere: ~/activity-monitor

codebytere activity-monitor ❯ npm i electron --save                10:15PM

> electron@1.7.9 postinstall /Users/codebytere/activity-monitor/node_mo
dules/electron
> node install.js

npm notice created a lockfile as package-lock.json. You should commit t
his file.
npm WARN activity-monitor@0.1.0 No repository field.

+ electron@1.7.9
added 155 packages in 8.105s
codebytere activity-monitor ❯                                      10:16PM
```

NPM RUNS THE INSTALLATION PROCESS

CREATING FILES

CREATE JAVASCRIPT FILES WITH TOUCH

```
codebytere@codebytere: ~/activity-monitor

codebytere activity-monitor ❯ touch app.js window.js                10:25PM
codebytere activity-monitor ❯ touch style.css index.html            10:25PM
codebytere activity-monitor ❯ ls                                    10:25PM
app.js              package-lock.json window.js
index.html          package.json
node_modules        style.css
codebytere activity-monitor ❯                                       10:25PM
```

CREATE STYLESHEET AND INDEX HTML FILE

SEE FILES IN YOUR CURRENT DIRECTORY WITH `LS`

APP.JS CODE

app.js — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
1   const {app, BrowserWindow} = require('electron')
2   const path = require('path')
3   const url = require('url')
4
5   let window = null
6
7   // Wait until the app is ready
8   app.once('ready', () => {
9     // Create a new window
10
11    // load index.html into the window
12
13    // show the window once it's ready
14  })
15
```

WAIT UNTIL THE APP IS READY BY WAITING FOR `READY` EVENT

WHAT ELSE DO WE NEED TO DO?

Python app.js 0 0 0 10:1 LF UTF-8 JavaScript master 4 files 10 updates

APP.JS CODE

app.js — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
1  const {app, BrowserWindow} = require('electron')
2  const path = require('path')
3  const url = require('url')
4
5  let window = null
6
7  // Wait until the app is ready
8  app.once('ready', () => {
9    // Create a new window
10   window = new BrowserWindow({
11     width: 500, // Set the initial width to 500px
12     height: 400, // Set the initial height to 400px
13     titleBarStyle: 'hidden-inset', // set the title bar style
14     backgroundColor: "#111", // set the background color to black
15     show: false // Don't show the window until it's ready
16   })
17
18   // load url into the window
19
20   // show the window once it's ready
21 })
22
```

CREATE A NEW BROWSERWINDOW

Python app.js 0 0 0 20:3 LF UTF-8 JavaScript master 4 files 10 updates

APP.JS CODE

app.js — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
1  const {app, BrowserWindow} = require('electron')
2  const path = require('path')
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5  let window = null
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9    // Create a new window
10   window = new BrowserWindow({
11     width: 500, // Set the initial width to 500px
12     height: 400, // Set the initial height to 400px
13     titleBarStyle: 'hidden-inset', // set the title bar style
14     backgroundColor: "#111", // set the background color to black
15     show: false // Don't show the window until it's ready
16   })
17
18   // load url into the window
19   window.loadURL(url.format({
20     pathname: path.join(__dirname, 'index.html'),
21     protocol: 'file:',
22     slashes: true
23   }))
24
25   // show the window once it's ready
26 })
27
```

LOAD INDEX.HTML INTO THE WINDOW WE JUST CREATED

Python app.js 0 0 0 19:3(LF UTF-8 JavaScript master 4 files 10 updates

APP.JS CODE

app.js — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
1   const {app, BrowserWindow} = require('electron')
2   const path = require('path')
3   const url = require('url')
4
5   let window = null
6
7   // Wait until the app is ready
8   app.once('ready', () => {
9     // Create a new window
10    window = new BrowserWindow({
11      width: 500, // Set the initial width to 500px
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13      titleBarStyle: 'hidden-inset', // set the title bar style
14      backgroundColor: "#111", // set the background color to black
15      show: false // Don't show the window until it's ready
16    })
17
18    // load url into the window
19    window.loadURL(url.format({
20      pathname: path.join(__dirname, 'index.html'),
21      protocol: 'file:',
22      slashes: true
23    }))
24
25    // show the window once it's ready
26    window.once('ready-to-show', () => window.show())
27  })
```

SHOW THE WINDOW ONCE IT'S READY

Python app.js 0 0 0 19:3(LF UTF-8 JavaScript master 4 files 10 updates

WINDOW.JS CODE

window.js — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
1   $(() => {
2     const os = require('os')
3
4     const datasets = []
5     const cpus = os.cpus()
6
7     for (let i = 0; i < cpus.length; i++) {
8       const cpu = cpus[i]
9       const cpuData = {
10        data: [
11          cpu.times.user,
12          cpu.times.sys,
13          cpu.times.idle,
14        ],
15        backgroundColor: [
16          'rgba(255, 99, 132, 1)',
17          'rgba(54, 162, 235, 1)',
18          'rgba(255, 206, 86, 1)'
19        ]
20      }
21      datasets.push(cpuData)
22    }
23
24    var chart = new Chart($('.chart'), {
25      type: 'doughnut',
26      data: {
27        labels: [
```

USING NODE API TO ACCESS NATIVE SYSTEM

GET SYSTEM DATA

ADD TO DATASET

Python | window.js | 0 0 0 | LF | UTF-8 | JavaScript | master | 4 files | 10 updates

WINDOW.JS CODE

window.js — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
22    }
23
24    var chart = new Chart($('.chart'), {
25      type: 'doughnut',
26      data: {
27        labels: [
28          'User Time (ms)',
29          'System Time (ms)',
30          'Idle Time (ms)'
31        ],
32        datasets: datasets
33      },
34      options: {
35        maintainAspectRatio: false,
36        title: {
37          display: true,
38          text: 'CPU Activity',
39          fontColor: 'rgb(250, 250, 250)',
40          fontSize: 16
41        },
42        legend: {
43          display: true,
44          labels: {
45            fontColor: 'rgb(250, 250, 250)',
46            fontSize: 12
47          }
48        }
49      }
50    })
51  })
```

USE JS LIBRARY TO CREATE CHART

CREATE WITH DATA WE COLLECTED

Python window.js 0 0 0 LF UTF-8 JavaScript master 4 files 10 updates

STYLE.CSS CODE

styles.css — ~/Developer/simple-samples/activity-monitor

app.js | window.js | styles.css | index.html

```
1   html, body, .container-fluid {
2     height: 100%;
3     background-color: #111;
4   }
5
6   html {
7     -webkit-app-region: drag;
8   }
9
10  .container-fluid {
11    padding: 25px;
12  }
13
```

SET BACKGROUND COLOR AND HEIGHT OF CHART CONTAINER

Python styles.css 0 0 0 1:1 LF UTF-8 CSS master 4 files 10 updates

INDEX.HTML CODE

index.html — ~/Developer/simple-samples/activity-monitor

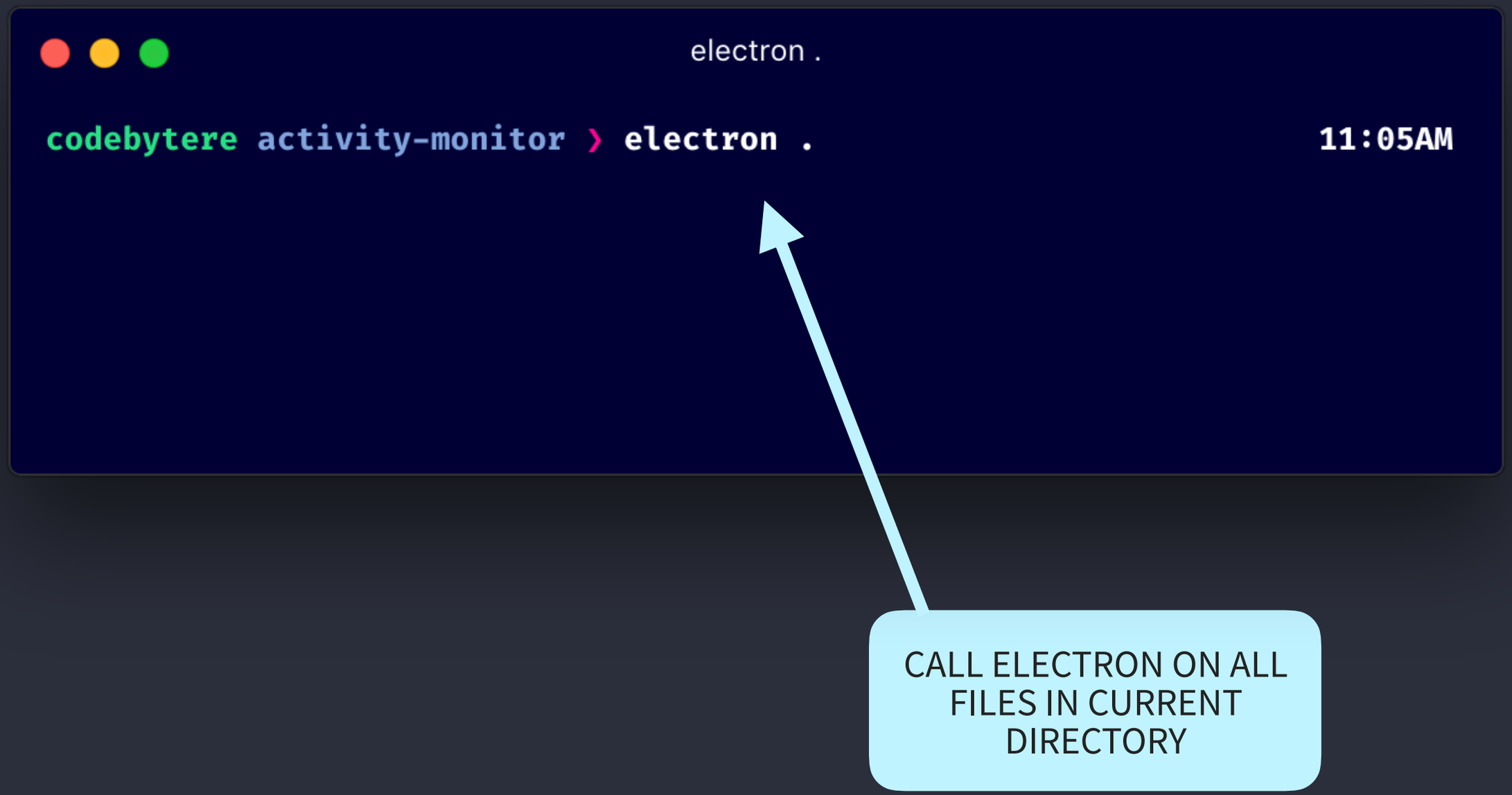
app.js | window.js | styles.css | index.html

```
1   <!DOCTYPE html>
2   <html>
3
4   <head>
5     <meta charset="utf-8">
6     <title>Activity Monitor</title>
7     <!-- Stylesheets -->
8     <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstr
9     <link rel="stylesheet" href="./styles.css">
10    <!-- Scripts -->
11    <script> delete module.exports </script>
12    <script src="https://code.jquery.com/jquery-3.2.1.js"></script>
13    <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></scri
14    <script src="https://cdnjs.cloudflare.com/ajax/libs/Chart.js/2.1.4/Chart.bundle.min.js">
15    <script src="./window.js"></script>
16  </head>
17
18  <body>
19    <div class="container-fluid">
20      <canvas class="chart"></canvas>
21    </div>
22  </body>
23
24  </html>
```

IMPORT LIBRARIES AND OUR WINDOW CODE

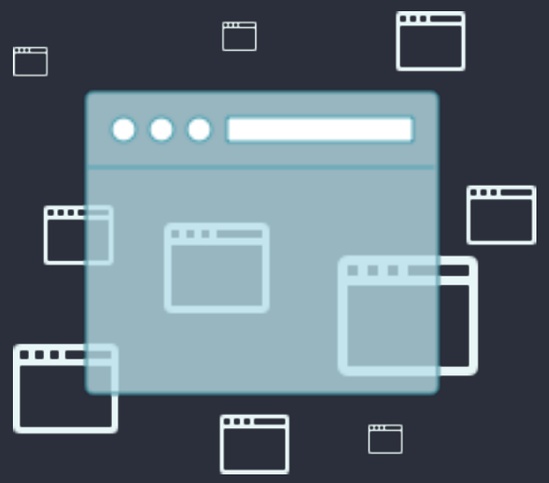
Python index.html 0 0 0 18:7 LF UTF-8 HTML master 4 files 10 updates

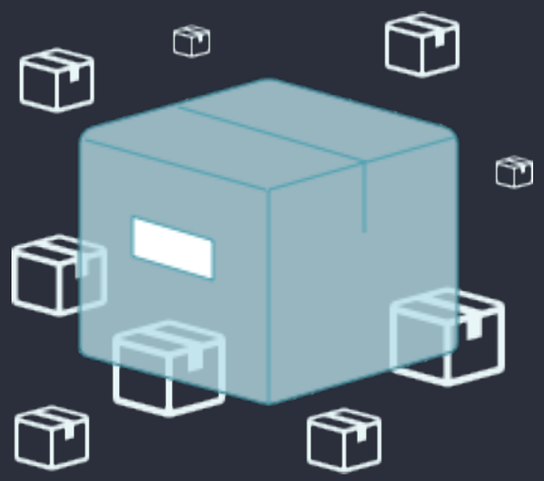
RUNNING YOUR APP



COMPLETE APP

https://github.com/electron/simple-samples/





THANK YOU!