

Behind the Scenes of CodeSlide

CodeSlide

npm:codeslide-cli v0.12.4

Features

- CodeSlide makes a slideshow for code snippets
- Its applications:
 - [CodeSlide CLI](#)

Dependencies

- It uses [esbuild](#) as module bundler
- It uses [gray-matter](#) as YAML Front Matter parser
- It uses [Commander.js](#) as CLI framework
- It uses [Eta](#) as HTML template engine
- It uses [Highlight.js](#) as syntax highlighter
- It uses [Marked](#) as Markdown renderer
- It uses [Node Fetch](#) as resource fetcher
- It uses [Puppeteer](#) as PDF printer
- It uses [TypeScript](#) as the main programming language
- It uses [Zod](#) as JSON schema validator

Documents

- See [Reference](#) for more usage information
- See [Change Log](#) for more version information

Creator

- [AsherJingkongChen](#)

The abstract process

1. Build a **Renderer** form
 2. Render the HTML template and CSS with the built renderer
 3. Print that slideshow to the output
-

Build a Renderer form

```
export * from './Format';
export * from './Layout';
export * from './PageSize';
export * from './Renderer';
```

Renderer

```
import { z } from 'zod';
import { isFormat } from './Format';
import { isLayout } from './Layout';
import { isPageSize } from './PageSize';
import { render as renderEta } from 'eta';
import { Stylesheets, Template } from './slides';

export type Renderer = z.infer<typeof _Renderer>;

export namespace Renderer {
  export const parse = (
    raw: object
  ): Renderer => _Renderer.parse(raw);

  export const render = (
    renderer: Renderer
  ): string => renderEta(
    Template,
    {
      layout: renderer.layout,
      slides: renderer.slides,
      style: `
<style>
${
    [
      Stylesheets['github'],
      Stylesheets[renderer.layout],
      ...renderer.styles,
      `code, .hljs { font-family: ${renderer.fontFamily}; }`,
      `#slides { font-size: ${renderer.fontSize}; }`,
      `#slides { font-weight: ${renderer.fontWeight}; }`,
    ].join('\n')
  }
</style>`,
    },
    {
      autoTrim: false,
      tags: ['{%', '%}'],
    }
  );
}

export const _Renderer = z.object({
  fontFamily: z
```

```

    .string()
    .default('')
    .transform((arg) => `
${arg ? `${arg}`, ` : ''}ui-monospace, SFMono-Regular, \
SF Mono, Menlo, Consolas, Liberation Mono, monospace`
    ),
    fontSize: z
    .string()
    .default('large'),
    fontWeight: z
    .string()
    .default('normal'),
    format: z
    .string()
    .refine(isFormat)
    .default('html'),
    layout: z
    .string()
    .refine(isLayout)
    .default('horizontal'),
    pageSize: z
    .string()
    .refine(isPageSize)
    .default('A4'),
    slides: z
    .array(z.string())
    .default([]),
    styles: z
    .array(z.string())
    .default([]),
  })
  .transform((arg) => {
    if (
      arg.layout === 'horizontal' &&
      arg.format === 'pdf'
    ) {
      arg.layout = 'vertical';
    }
    return arg;
  });

```

Build a Renderer form

Options

- Export slideshow file as HTML or PDF format

```

export type Format = keyof typeof Format;

export const Format = {
  html: true,
  pdf: true,

```

```
} as const;

export const isFormat = (
  raw: string
): raw is Format => raw in Format;
```

- Specify page size for PDF format

```
export type PageSize = keyof typeof PageSize;

export const PageSize = {
  letter: true,
  legal: true,
  tabloid: true,
  ledger: true,
  A0: true,
  A1: true,
  A2: true,
  A3: true,
  A4: true,
  A5: true,
  A6: true,
} as const;

export const isPageSize = (
  raw: string
): raw is PageSize => raw in PageSize;
```

- Present the slideshow in horizontal or vertical layout

```
export type Layout = keyof typeof Layout;

export const Layout = {
  'horizontal': true,
  'vertical': true,
} as const;

export const isLayout = (
  raw: string
): raw is Layout => raw in Layout;
```

The HTML template

CodeSlide uses [Eta](#) to render {% and %} are interpolation symbols

```
<!DOCTYPE HTML>
<html class="hljs">
<head>
  <meta
```

```

    name="viewport"
    charset="utf-8"
    content="width=device-width, initial-scale=1, user-scalable=no">
    {%~ it.style %}
</head>
<body class="hljs">
  <div id="slides">
    {%_ for (const [index, slide] of it.slides.entries()) { %}
      <div class="slide" id="slide_{{~ index %}}">
        {%_ if (index !== 0 && it.layout === 'vertical') { %}
          <hr>
        {%_ } %}
        {%~ slide %}
      </div>
    {%_ } %}
  </div>
</body>
</html>

```

CSS (Horizontal layout)

```

/*! CodeSlide slides.horizontal.css */
html, body {
  margin: 0;
  -webkit-print-color-adjust: exact;
  print-color-adjust: exact;
  overflow: hidden;
  overscroll-behavior: none;
  scrollbar-width: none;
}
body::-webkit-scrollbar {
  display: none;
}
pre {
  margin: 0;
  white-space: pre-wrap;
  word-break: break-word;
}
p:empty {
  display: none;
}
#slides {
  display: flex;
  flex-direction: row;
  position: absolute; /* fix height on mobile */
  width: 100vw;
  height: 100vh;
  overflow-x: scroll;
  scroll-behavior: smooth;
  scroll-snap-type: x mandatory;
}
.slide {

```

```

display: flex;
flex-direction: column;
min-width: calc(100vw - 4em);
height: calc(100vh - 2em);
overflow-y: scroll;
scroll-snap-align: start;
scroll-snap-stop: always;
scrollbar-width: none;
padding: 1em 2em;
}
@media only screen and (max-width: 768px) {
  .slide {
    height: calc(100dvh - 2em);
  }
}
.slide::-webkit-scrollbar {
  display: none;
}
@page {
  margin: 0;
  size: auto;
}
@media print {
  #slides {
    width: auto;
    height: auto;
  }
}

```

CSS (Vertical layout)

```

/*! CodeSlide slides.vertical.css */
html, body {
  margin: 0;
  -webkit-print-color-adjust: exact;
  print-color-adjust: exact;
  overflow: hidden;
  overscroll-behavior: none;
}
pre {
  margin: 0;
  white-space: pre-wrap;
  word-break: break-word;
}
p:empty {
  display: none;
}
#slides {
  display: flex;
  flex-direction: column;
  position: absolute; /* fix height on mobile */
  width: 100vw;

```

```
height: 100vh;
overflow-y: scroll;
scroll-behavior: smooth;
}
.slide {
padding: 1em 2em;
}
@page {
margin: 0;
size: auto;
}
@media print {
#slides {
width: auto;
height: auto;
}
}
```

The HTML template and CSS are imported as text in the program

```
declare module '*.css' {
  const _: string;
  export default _;
}
declare module '*.html' {
  const _: string;
  export default _;
}

import GithubDarkDimmed from './github-dark-dimmed.css';
import HorizontalStylesheet from './slides.horizontal.css';
import VerticalStylesheet from './slides.vertical.css';
import Template from './slides.html';

const Stylesheets = {
  horizontal: HorizontalStylesheet,
  vertical: VerticalStylesheet,
  github: GithubDarkDimmed,
};

export { Stylesheets, Template };
```

Print the slideshow to the output

Applications

The print process runs in an application, the list of all applications is here:

1. CodeSlide CLI

CodeSlide CLI

npm v0.12.4

Usage demo

```
<yilan time=11:11:24 dir="cli/examples/rustlings" /> |
```

See also [Example usages](#)

Installation

1. Prepare Node.js runtime and NPM package manager
2. Run `npm install -g codeslide-cli` on the command line

Features

- It is an application of [CodeSlide](#)
- It allows you to easily make awesome slideshows for code snippets on command lines
- It is a Node.js Command Line Interface (CLI)

Documents

- See [Reference](#) for more information

Creator

- [AsherJingkongChen](#)

CLI entrypoint

```
import { program } from 'commander';
import { readFileSync } from 'fs';
import { stdin, stdout } from 'process';
import { version, homepage, name } from '../package.json';
import { CLIOptions } from './CLIOptions';
import { parse } from './parse';
import { render } from './print';
```

```
program
```

```
  .name(name)
```

```
  .description(`\
```

```
Example: ${name} -m ./manifest.md -o ./output.html
```

Make a slideshow (HTML/PDF file) for code snippets
with a manifest (Markdown file).

Go to home page for more information: \${homepage}

```
` )
```

```
  .version(version, '-v, --version', `
```

```
Check the version number.`
```

```
)
```

```
  .helpOption('-h, --help', `
```

```
Check all options and their description.`
```

```
)
```

```
  .option('-o, --output [local_path]', `
```

```
The "output file path" of slideshow.
```

```
By default it writes the output to stdout.`
```

```
)
```

```
  .option('-m, --manifest [local_path]', `
```

```
The "manifest file path" of slideshow.
```

```
By default it reads manifest from stdin.`
```

```
)
```

```
  .action(async (options: CLIOptions) => {
```

```
    let { output, manifest } = CLIOptions.parse(options);
```

```
    if (manifest) {
```

```
      manifest = readFileSync(manifest, 'utf8');
```

```
      await render(output ?? stdout.fd, await parse(manifest));
```

```
    } else {
```

```
      let data = Buffer.alloc(0);
```

```
      stdin
```

```
        .on('data', (d) => {
```

```
          data = Buffer.concat([data, d]);
```

```
        })
```

```
        .once('end', async () => {
```

```
          manifest = data.toString('utf8');
```

```
        await render(output ?? stdout.fd, await parse(manifest));
    });
}
})
.parseAsync();
```

Validate CLI options

```
import { z } from 'zod';

export type CLIOptions = z.infer<typeof CLIOptions>;

export const CLIOptions = z.object({
  manifest: z.string().optional(),
  output: z.string().optional(),
})
.strict();
```

Build a Renderer form and render with it

```
import hljs from 'highlight.js';
import matter from 'gray-matter';
import fetch from 'node-fetch';
import { marked } from 'marked';
import { Renderer } from '../../src';
import { readFileSync } from 'fs';
import { pathToFileURL } from 'url';

export const parse = async (
  manifest: string
): Promise<Renderer> => {
  manifest = manifest.replace(
    /^[\u200B\u200C\u200D\u200E\u200F\uFEFF]/, ''
  );
  const { content, data } = matter(manifest);
  if (!data.codeslide) {
    throw new Error(
      'Cannot find "codeslide" scalar in the Font Matter section'
    );
  }

  const renderer = Renderer.parse(data.codeslide);

  renderer.slides = await _parse(content)
    .then((html) => html.split('<hr>').map((s) => s.trim()));

  renderer.styles = await Promise.all(
```

```

    renderer.styles.map((path) => _getContent(path))
  );

  // Is raw stylesheet needed?
  // const stylesheet: string | undefined =
  //   data.codeslide.stylesheet;
  // if (stylesheet) {
  //   renderer.styles.push(stylesheet);
  // }

  return renderer;
};

const _parse = async (manifest: string) => (
  marked.parse(manifest, {
    async: true,
    walkTokens: async (token: marked.Token) => {
      if (token.type === 'link') {
        const { href, text, raw } = token;
        if (!text.startsWith(':')) {
          return;
        }
        const [prefix, suffix] = <[string, string | undefined]>
          text.split('.');
        if (prefix === ':slide') {
          token = _toHTMLToken(token);
          token.raw = raw;
          token.text = await _getContent(href)
            .then((content) => _parse(content));
        } else if (prefix === ':code') {
          token = _toHTMLToken(token);
          token.raw = raw;
          const code = await _getContent(href).then((content) => (
            hljs.highlight(content, {
              language: suffix ?? 'plaintext'
            })
          ));
          token.text = `
<pre><code class="${
  code.language ? `language-${code.language}` : ''
}hljs">${
  code.value
}</code></pre>`;
        }
      }
    },
  });

const _toHTMLToken = (
  token: marked.Token
): marked.Tokens.HTML => {
  for (const p in token) {
    if (token.hasOwnProperty(p)) {
      delete token[p as keyof marked.Token];
    }
  }
};

const _toHTMLToken = (
  token: marked.Token
): marked.Tokens.HTML => {
  for (const p in token) {
    if (token.hasOwnProperty(p)) {
      delete token[p as keyof marked.Token];
    }
  }
};

```

```

    }
    token = token as marked.Token;
    token.type = 'html';
    token = token as marked.Tokens.HTML;
    token.pre = false;
    return token;
};

const _parseURL = (path: string): URL => {
    try { return new URL(path); }
    catch (_) { return pathToFileURL(path); }
};

const _getContent = async (
    path: string | URL,
): Promise<string> => {
    if (typeof path === 'string') {
        path = _parseURL(path);
    }
    if (path.protocol === 'file:') {
        return readFileSync(path).toString();
    } else {
        return fetch(path).then(async (r) => {
            if (r.ok) { return r.text(); }
            throw new Error(await r.text());
        });
    }
};

```

Print the slideshow to the output

```

import { PathOrFileDescriptor, writeFile } from 'fs';
import { launch } from 'puppeteer';
import { Renderer } from '../../../src';

export const render = async (
    output: PathOrFileDescriptor,
    renderer: Renderer,
): Promise<void> => {
    if (renderer.format === 'html') {
        writeFile(output, Renderer.render(renderer), 'utf8', (err) => {
            if (err) { throw err; }
        });
    } else if (renderer.format === 'pdf') {
        const browser = await launch();
        const page = await browser.newPage();
        await page.setContent(Renderer.render(renderer));
        const result = await page.pdf({
            printBackground: true,
            format: renderer.pageSize,
        });
        const closeBrowser = browser.close();
    }
};

```

```
    writeFile(output, result, 'base64', (err) => {  
      if (err) { throw err; }  
    });  
    await closeBrowser;  
  }  
};
```

Thanks for your watching!

See other CodeSlide CLI examples [here](#)

The installation guide [here](#)