

readme.md for @push.rocks/smartfm

The `@push.rocks/smartfm` module handles frontmatter data in markdown and other text files. The module allows easy parsing, stringification, and extraction of frontmatter data, using YAML or JSON format. It leverages the `gray-matter` library for advanced functionality with a simple API.

Install

To use `@push.rocks/smartfm`, you first need to install it via npm. Make sure you have Node.js installed, and run the following command in your terminal:

```
npm install @push.rocks/smartfm
```

This will add the module as a dependency to your project.

Usage

Once the module is installed, you can start using its capabilities by importing and initializing the `Smartfm` class in your TypeScript or JavaScript projects. The following sections provide comprehensive examples of the module's functionality:

Importing the Module

To get started with the module, use the following import statement:

```
import { Smartfm } from '@push.rocks/smartfm';
```

The module exports the `Smartfm` class, which you will use to manipulate frontmatter in your files.

Initializing the `Smartfm` Class

The `Smartfm` class requires an options object to be passed during initialization. The options object specifies the type of frontmatter format you are working with, which can either be `'yaml'` or `'json'`. Here's how you can initialize the class:

```
// Initialize with YAML frontmatter
let smartfm = new Smartfm({ fmType: 'yaml' });

// Initialize with JSON frontmatter
let smartfmJSON = new Smartfm({ fmType: 'json' });
```

The initialized objects can then be used to parse and stringify frontmatter in strings and text files.

Parsing Frontmatter from Strings

To parse frontmatter data from a string that includes frontmatter, use the `parse` method. This function returns an object containing the parsed frontmatter data and the rest of the string:

```
const sampleString = `---
title: Test Document
author: John Doe
---
This is the body content of the file.`;

let parsedContent = smartfm.parse(sampleString);
console.log(parsedContent.data); // Outputs the frontmatter data as a JavaScript object
console.log(parsedContent.content); // Outputs "This is the body content of the file."
```

The `parse` method will recognize and extract the frontmatter block, returning it as a JavaScript object while preserving the original content of the string.

Stringifying a String with Frontmatter

If you have a string and frontmatter data that you want to combine into a correctly formatted frontmatter block in a string, you can use the `stringify` method:

```
const bodyContent = "This is some markdown content.";
const frontmatterData = {
  date: "2023-01-01",
  tags: ["example", "frontmatter"]
};
```

```
let combinedString = smartfm.stringify(bodyContent, frontmatterData);
console.log(combinedString);
// Outputs a string with the frontmatter serialized at the top
```

This method appends the serialized frontmatter to the top of the given body content, making it ready for use in typical markdown or frontmatter-supported documents.

Parsing Frontmatter from Commented Sections

Sometimes frontmatter data might be commented out. The `parseFromComments` method allows you to parse such data by providing a comment prefix:

```
const commentedFile = `# ---
# title: Commented Example
# date: 2023-10-15
# ---
Actual file content here...`;

let parsedCommentedContent = smartfm.parseFromComments('# ', commentedFile);
console.log(parsedCommentedContent.data); // Outputs { title: "Commented Example", date:
"2023-10-15" }
```

The `parseFromComments` method strips the comment prefixes before parsing the frontmatter, enabling easy extraction of data listed in commented sections.

Using the Module for Complex Scenarios

Beyond these basic operations, the `@push.rocks/smartfm` module can be a crucial part of more complex workflows. For instance, integrating frontmatter management with static site generators, content management systems (CMS), or any situation where content metadata is necessary.

Example Scenario: A Static Site Generator

Imagine a static site generator that uses markdown files with frontmatter as data sources for pages. `@push.rocks/smartfm` can help read, extract, and manipulate these files programmatically:

```

import fs from 'fs';
import path from 'path';

const contentDir = path.join(process.cwd(), 'content');

fs.readdir(contentDir, (err, files) => {
  if (err) throw err;

  files.forEach(file => {
    const filePath = path.join(contentDir, file);
    fs.readFile(filePath, 'utf8', (err, data) => {
      if (err) throw err;

      const smartfmInstance = new Smartfm({ fmType: 'yaml' });
      const parsedPage = smartfmInstance.parse(data);

      console.log('Page Title:', parsedPage.data.title);
      console.log('Markdown Content:', parsedPage.content);

      // Optionally, modify and update frontmatter
      parsedPage.data.title = 'Updated Title';
      const updatedContent = smartfmInstance.stringify(parsedPage.content, parsedPage.data);

      fs.writeFile(filePath, updatedContent, (err) => {
        if (err) throw err;
        console.log('File updated successfully.');
      });
    });
  });
});

```

In this example, we read all markdown files from a directory, parse them to extract frontmatter data, optionally modify the frontmatter, and write the updated content back to the files.

Advanced Use Cases

`@push.rocks/smartfm` is flexible enough to support advanced operations like validating frontmatter, applying transformations, and more. Here are a few ideas to explore:

Frontmatter Validation

You might want to validate the structure of frontmatter data against a schema before processing. Here's a conceptual idea using `@push.rocks/smartfm`:

```
import Ajv from 'ajv';

const ajv = new Ajv();
const schema = {
  type: 'object',
  properties: {
    title: { type: 'string' },
    date: { type: 'string', format: 'date' }
  },
  required: ['title', 'date']
};

const validate = ajv.compile(schema);

const frontmatter = smartfm.parse(sampleString).data;
if (validate(frontmatter)) {
  console.log('Frontmatter is valid.');
```

Using a validation library like Ajv, you can ensure that the parsed frontmatter adheres to a required schema or format, enhancing data integrity in larger applications.

Transformed Output

Suppose you want to output the parsed markdown content in a transformed format, such as HTML. Here's how you could integrate a markdown parsing library:

```
import marked from 'marked';

const parsedResult = smartfm.parse(sampleString);
const htmlContent = marked(parsedResult.content);

console.log('HTML Content:', htmlContent);
```

By combining `@push.rocks/smartfm` with a markdown parsing library like `marked`, you can convert markdown content into other formats while handling the associated frontmatter.

With these examples, you can see how `@push.rocks/smartfm` fits into various workflows involving frontmatter and text processing. The module's simplicity and effectiveness make it a suitable choice for projects that require clean handling of document metadata.

Feel free to explore and extend these examples based on your particular use case. Whether you are building a simple script, a web application, or an extensive content management system, `@push.rocks/smartfm` provides a robust foundation for frontmatter operations. Happy coding!

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