

**MASTER'S PROJECT (SPRING 2018)**

TOPIC: *A Lightweight and Platform-Independent JSON Editor for Creating and Updating Data-Interchange Files*

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ABSTRACT

JSON (JavaScript Object Notation) has been widely used as a text-based and language-independent syntax that supports data-interchange format. Unlike XML format, it is lightweight and human readable, as well as easy to parse and generate on different platforms. However, due to a lack of programming background, many people feel JSON files are difficult to use. In particular, they found that traditional editors such as Notepad, WordPad or any other text-based editors to be too “bare-bone”; while professional IDEs like Adobe Dreamweaver and JetBrains WebStorm are way too complex to use. In this project, we develop a simple, yet powerful and fully-featured editor that can be used to edit the most commonly used data-interchange format, the JSON file format. We designed and implemented a lightweight and platform independent JSON editor using Java Swing. The editor consists of four major components, namely a code editor, a tree panel, a style panel and a preview panel. The code editor allows a user to modify a JSON file directly at the code level. The JSON tree panel offers the options to add, remove or rename JSON nodes in a JSON file. There is also a style panel that allows easy access to the basic styling options, where the style effects can be displayed in the preview panel simultaneously. Furthermore, the editor also provides the needed functionality, such as to import and export a JSON file, and to add proper indentations to comply with the JSON file format. Also, the code is pretty printed in the code preview to increase the readability. To demonstrate the effectiveness of our approach, we adopt the JSON editor to update JSON files used at the Concurrent Software Engineering Laboratory (CSEL) web site. The experiments show that it is a very convenient, reliable and effective JSON editor.