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Research Article

JFVEDT: JSON FILE VALIDATION, ENCRYPTION, DECRYPTION TOOL USING NETBEANS

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ABSTRACT

This paper presents JFVEDT, a tool that validates, encrypt and decrypt JSON data file through a graphical user interface. JSON in comparison to XML has the same strength; being a data interchange format, its simple appearance provides humans an advantage of easily reading and writing it. For JSON encryption and decryption a number of licensed and open source tools exist, but this tool being an open source validates, encrypt and decrypt JSON file using graphical user interface, by simply parsing the file.

INTRODUCTION

In the present scenario, the growing technologies like XML, AJAX, .NET, JSON are in practice whether it is over internet or cloud. With the deployment of Web APIs or dynamic websites based on ASP, JSP, PHP, ASP.NET etc. the main problem being faced is how to transfer data between different dynamic websites. XML is one such solution, which store plain text base data, being independent of platform. Text base data based on XML can easily be exchanged between different platforms. Transferring data between applications through Remote Procedure Calls and object serialization are the prime uses of XML [1]. As compared to XML, JSON format is much smaller. XML format consists of tags resulting in size increase. JSON eliminates unwanted tags resulting in small size of exchange format as compared to XML [2].

JSON (JavaScript Object Notation) data file being more simple, human readable and can be easily parsed, which reduces translation time, complexity and processing time [3]. JSON is industry standard, which is used for transfer of data over web, and it is less bulky than its counter-part such as XML. JavaScript applications are well supported by JSON [4]. JSON exhibits the feature of lightweight, text-based, language independent data inter-change format [5]. The Web APIs instead of XML for data interchange mostly use JSON for exchanging data between different platforms. JFVEDT (JSON File validator, encryptor and decryptor) tool is a combination of the two major functionalities for creating JSON files. JSON is a de-facto standard in current web technology and requires validating it before deployment of the same at the client side. This tool implements all required and mandatory options for fulfilling such requirements at the user end. The first requirement is to validate the JSON file for its correct creation, which is a foremost important measure before using JSON file. Second requirement relates to the security of the JSON files as they include actual data of the users. There should be facility of encryption and decryption of the different files of JSON, which are supported by JFVEDT tool [5]. In this paper, we present a single tool that validates, encrypt and decrypt JSON file.

Problem and background

A number of tools had been proposed by authors from time to time; but these tools handles single task, such as they handle encryption task or decryption task or validation task at a single time. A tool proposed by Douglas and Zach [6] is the most popular online JSON validator, which accepts JSON code and validates the code through online mode. JSON parser online a tool proposed by Cuenot [7] accepts Mathematical sequences in JSON format and parses the JSON file. JSON Formatter & Validator is a tool that solves the problem by formatting and validating JSON data so that it is easy to read and easy to debug [8]. JSON Web Encryption (JWE) exhibits the contents in encrypted form with the help of JSON-based data structures [8]. These tools perform single task at a time. There is no such

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tool that provides validation, encryption and decryption at a single time. The tool JFVEDT proposed performs all three tasks one by one at a time.

Tool support – JFVEDT

To facilitate the use of JSON file validation, encryption and decryption a parser based tool JFVEDT, developed in Java using Netbeans 8.0 is used to analyze JSON file for validation, encryption and decryption represented in JSON format. The flow of tool can be better understood with the help of use case as shown in Figure. 1., the use case diagram depicts the up-loading of file, validation of file to check whether it is a valid JSON file, encrypting the JSON file. The working of tool is shown in Figure. 2., where a source data file is selected and a JSON file is created and saved in the repository. The JAVA parser helps in parsing the file for its validity, the JSON file is selected from the repository through a GUI interface as shown in Figure.2.

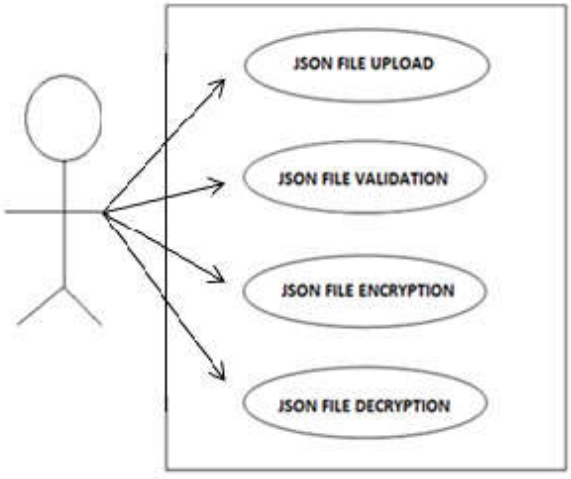

Figure 1 Use Case diagram for JFVEDT tool

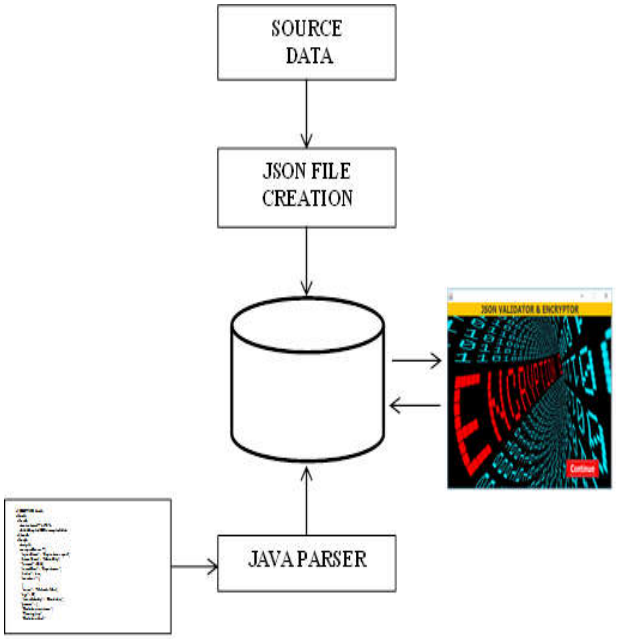

Fig 2 Working of JFVEDT tool

Fig 3 Main GUI for Validation, Encryption & Decryption for JSON File

Implementation of the proposed methodology (JFVEDT)

A GUI interface is provided, where the background of encryption wallpaper has been taken [9], for validation, encryption and decryption of JSON file as shown in Figure.3. As a first step a valid JSON file is uploaded using a dialog box as shown in Fig. 4.

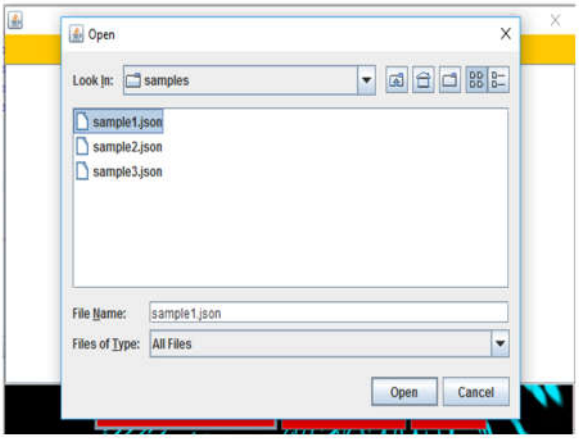

Fig 4 GUI for selecting a JSON File

The JSON file is selected for performing validation, a GUI interface is provided in Figure.5. Once the JSON file validation is successful, a message is displayed as shown in Figure.5.

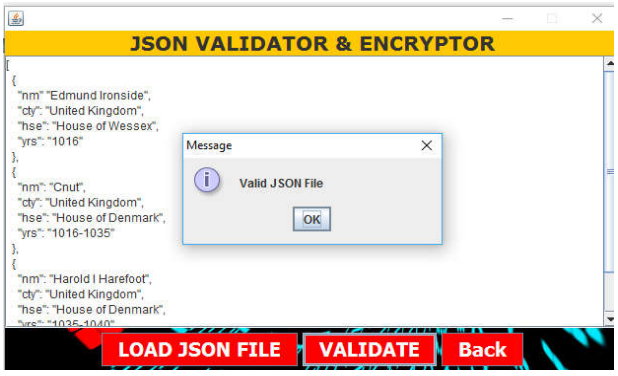

Fig 5 GUI displaying a message for "Valid JSON File"

After successful validation, the JSON file is saved and is selected for encryption as shown through GUI in Figure.6.

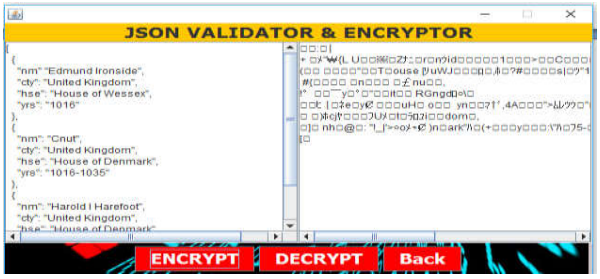

Fig 6 GUI Displaying JSON Encrypted file

Finally the JSON file is decrypted as shown through GUI in Figure.7.

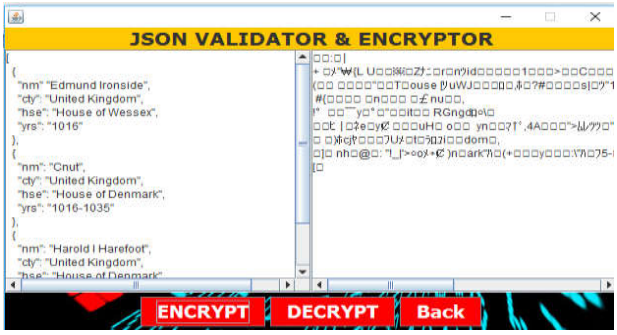

Fig 7 GUI displaying JSON Decrypted File

CONCLUSION AND FUTURE WORK

This tool has the ability to validate the JSON files being in its required format. Our tool can be used generally for encrypting and decrypting the details of JSON files, where security matters most. The tool can be used as a library by creating *JAR* file, which can be used by other Research persons being an open source tool. Software developers and Data analysts may use JFVEDT for encryption and decryption as shown through snapshots presented in this paper. Our tool can be modified to validate, encrypt and decrypt other data files being used over web, but that will be implemented in a future version.

References

1. N. Nurseitov *et al*., 2009. Comparison of JSON and XML Data Interchange Formats: A Case Study. *https://www.semanticscholar.org/, last accessed:20-10-2017. pp:1-6.*
2. Z.U. Haq, G.F. Khan, T. Hussain, 2012. A Comprehensive analysis of XML and JSON web technologies. New Developments in Circuits, Systems, Signal Processing, Communications and Computers., 2012, pp:102-109.
3. A.A. Abd El-Aziz; A. Kannan, 2014.JSON Encryption. International Conference on Computer Communication and Informatics (ICCCI-2014), Jan. 03-05, 2014, pp:1-6.
4. S. Klarr, 2007. Javascript: What is json? javascriptwhat-isjson, last accessed: 16-09-2017.
5. A. Kereshmeh; E.M. Charles; C.L. Daniel, 2016.JavaScript Object Notation (JSON) data serialization for IFC schema in web-based BIM data exchange. Elsevier - Automation in Construction, 77 (2017), 24-51.
6. C. Douglas and Carter, Z., 2017. The JSON Validator, https://jsonlint.com, last accessed: 16-09-2017.
7. Cuhenot, O., 2017. JSON Parser Online, last accessed: 18-09-2017.
8. C. Douglas, 2017. JSON Formatter and Validator, last accessed: 26-09-2017.
9. https://www.ecommercetimes.com/article_images/story_graphics_xlarge/xl-2016-encryption-1.jpg, last accessed: 02-11-2017.

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