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| WEB APP SEARCH ENGINE |
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| November 14  A joint paper by JP Tokyo & Co and MRIIRS  Authored by: Sarthak Agrawal Reviewed by: Rajesh Nath, Dr. Madhulika |

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**Introduction**

This white paper is for informational purpose only which is adhered to a web app for displaying search results from product catalogs which relies on a REST API that communicates between the web app and the elastic search by the use of AngularJS as front end and NodeJS as the back end.

In this era of e-commerce, every organization is keen to make an impact online. There are many platforms available for web development in the market. AngularJS has quickly gained popularity and is not going to loose its ground, and because it is developed and maintained by google it is best in class. AngularJS uses MVC architecture for developing a web application. MVC stands for Model View Controller where Model maintains the data, View is responsible for displaying of data and Controller acts as a bridge between the View and the Model. AngularJS also uses two way binding which makes the DOM very easy to manipulate.

Semantic-UI is a modern front-end development framework powered by LESS and jQuery and it gives a great amount of flexibility in a component’s appearance. Semantic means connected with the meaning of words and Semantic-UI follows the same principle and is semantic in naming, defining and describing classes and components.

NodeJS is a JavaScript runtime built on Chrome’s V8 JavaScript engine.

It uses non-blocking and even-driven I/O to remain lightweight and efficient. Node allows us to build fast, scalable network applications, as it’s capable of handling a huge number of simultaneous connections with high throughput which equates to high scalability.

Search engines with huge databases usually face issues such as product information retrieval taking too long. This issue can be solved by Elasticsearch as it provides simplicity in building filters, facets and aggregation. It also has incredibly fast response time, easy to maintain and provides easy analysis of product performance.

ES is a document-oriented database designed to store, retrieve, and manage document-oriented or semi-structured data. Elasticsearch stores data in JSON document form. Elasticsearch uses Lucene StandardAnalyzer for indexing for automatic type guessing and for high precision.

Here we aim to develop a web app that can be used to search products from catalogs that are imported in the elastic search.

The main steps involved in the development of this project are as follows:

1. Develop UI for the web app using Semantic-UI.
2. Develop the MVC architecture for the UI developed using AngularJS.
3. Use the bulit in API for search in Semantic-UI and connect it with elastic search using NodeJS.
4. Get a response from the server and display the search results if any.

**Description**

UI for the web app has been developed using Semantic-UI .

**Platforms and Technologies**

* MANJARO DEEPIN (OS) 17.1.12
* AngularJS 1.3.15
* Semantic-UI 2.4
* NodeJS 10.10
* ElasticSearch 6.4.2

**Findings & Verification**

* For the implementation of UI, official documentation of Semantic-UI was studied and used.
* The functional correctness was verified by using some sample data that was created.

The project was under constant guidance under of our mentors. Updates were provided weekly with the work done to the mentors from MRIIRS and JP Tokyo and co. Also group members reviews were taken into consideration.

# About

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| Contributor- Sarthak Agrawal (www.linkedin.com/in/sarthak-agrawal-0162a3174)IMG_7598“A programming enthusiast, eager for learning more and more in the field of full-stack development and mobile application development” Areas of Interest: Full-Stack Development, Mobile Application Development, Machine Learning  Languages: C++, JAVA, HTML, CSS, JAVASCRIPT, ANGULARJS, NODEJS, REACTJS   * Research paper accepted in ICCS-2018 * Another research paper published in ICCS-2018 ELSVIER   WEB DEVELOPMENT TRAINEE at C-DAC ATC NETCOM, JAIPUR for 2 months (https://foodie-minion.herokuapp.com)   1. Mentors  * Mr. Rajesh Nath - Associate Vice-President of JP Tokyo and co.   rajesh.nath@jptokyo.co.jp   * Dr. Madhulika Bhatia - Associate professor in MRIIRS   madhulika.fet@mriu.edu.in   * JP Tokyo - info@jptokyo.co.jp * MRIIRS - delhi@mrei.ac.in |

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