ALGORITHMS VISUALIZER

MINOR PROJECT SYNOPSIS

Bachelor of technology

Information Technology

Submitted by

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1 Introduction

Data is the hottest commodity of the IT industry. All the large co-operations are vying to collect as much data as possible. While data collection is desired, the collection and storage of such data are time-consuming and costly. Yet, the benefits of having data collection outweigh them in the long run. Data are important to understand the performance, accuracy, approval,etc. of the product and it helps businesses analyse them and improve their productivity and shortcomings. Examples of data collected by companies can be information on the fitness tracker, internet browsing history, IP address, time, and frequency of using an app or device, etc. As important it is to collect and store data, it is also important to organize the data in a meaningful manner. Organization of data includes sorting of data, it provides proper structure to the data that makes it analysable,comparable to another set of data, and accessible as fast as possible. Thus, sorting is an indispensable part of data organization.

The project focuses on various such sorting algorithms that can be used to sort a set of random numbers as a data set and visualize the sorting process using a web application.We have learnt sorting algorithms like bubble sort, selection sort, insertion sort, quick sort. But often we fail to understand the core idea of a particular algorithm maybe because we are unable to visualize how they work. So the most important thing to understand about these algorithms is visualization. That's why we are making this project to let everyone understand how these algorithms work. This web application will be created using HTML, CSS and modern Javascript technology like React to visualize how various sorting algorithms work.

2 Objectives

1. To create an web application that will visualize the flow and logic of various algorithms.

3 Feasibility Study

Technical feasibility: Technical feasibility also involves the evaluation of the hardware, software, and other technical requirements of the proposed system. The project is evaluated to be technically feasible as technology to be used is easily available and open source.

Economic feasibility: The project is economically feasible in the sense that the software used to develop the proposed application are open source and free to use.

Market feasibility: The application software is market feasible as this application is in demand. Although many on-line visualizers are available , but they do not provide that much depth understanding and accessibility of all algorithms at one place.

Time feasibility: The proposed system is time feasible as the development of system is on schedule and will be finished as per schedule.

4 Methodology/ Planning of work

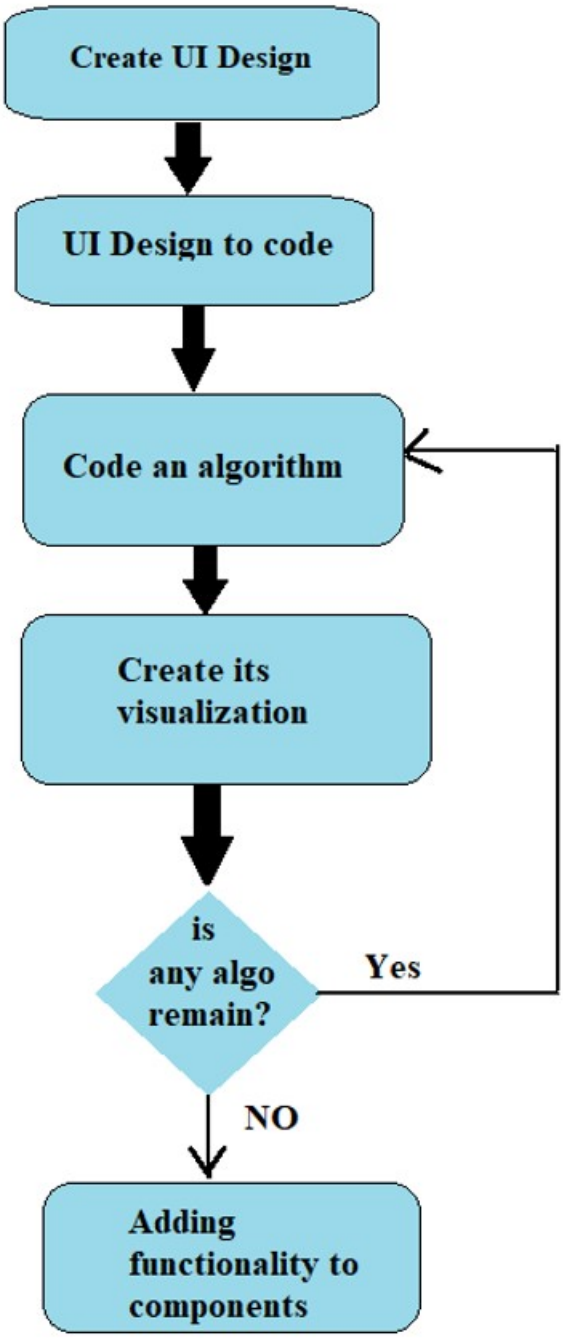

Figure 1: Methodology

5 Facilities required for proposed work

Minimum System and software requirements for developing this project are:

SOFTWARE REQUIREMENT:

- Visual studio Code
- Git
- Node.js
- Node Package Manager(npm)
- Operating System supporting modern browsers like chrome, edge, firefox.

HARDWARE REQUIREMENTS:

- Processor: 1.9 gigahertz (GHz) x86- or x64-bit dual core processor
- Memory : 4GB or above

References

[1] React:A JavaScript library.[Online] Available:
https://reactjs.org/docs/getting-started.html

[2] CSS: Cascading Style Sheets. [Online] Available:
https://developer.mozilla.org/en-US/docs/Web/CSS

[3] JavaScript. [Online] Available:
https://developer.mozilla.org/en-US/docs/Web/JavaScript