

Web Worker



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Submitted by:

Saleem Malik 2021-CS-32

Supervised To:

Mr.Aatif Hussain

Department of Computer Science
University of Engineering and Technology Lahore
Pakistan

1 Web Worker

This report presents an overview of the Web Worker project, including its purpose, implementation details, and features.

2 Introduction

Web Workers are a valuable tool in web development for offloading CPU-intensive tasks to separate background threads, improving the responsiveness and performance of web applications. The purpose of this project is to demonstrate the usage of Web Workers in a web application context, specifically for generating a random array and calculating its sum.

3 Implementation Details

The project consists of the following components:

- **Random Array Generator Worker:** A Web Worker responsible for generating a random array of specified length.
- **Sum Calculator Worker:** A Web Worker responsible for calculating the sum of the elements in the generated array.
- **Main Application:** The main application interface built with React, which allows users to trigger the random array generation and sum calculation tasks.

4 Features

The Web Worker project offers the following features:

- ****Asynchronous Processing**:** Utilizes Web Workers to perform array generation and sum calculation tasks asynchronously, preventing UI blocking and enhancing user experience.
- ****Dynamic UI Updates**:** Dynamically updates the user interface to display the progress of array generation and sum calculation tasks, providing real-time feedback to the user.
- ****Efficient Resource Utilization**:** Offloads CPU-intensive tasks to separate background threads, ensuring smooth application performance even for large datasets.

5 Conclusion

The Web Worker project demonstrates the effectiveness of using Web Workers to improve the performance and responsiveness of web applications. By leveraging separate background threads for CPU-intensive tasks, the project achieves efficient resource utilization and enhances the user experience. Moving forward, the project can be extended to incorporate additional features and optimizations, further leveraging the capabilities of Web Workers in web development.

6 Live Demo

To view the live demo of the Web Worker project, please visit <https://web-workers-one.vercel.app>.