# Parallel Concepts in Internet and web programming

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*This project report is being submitted to Prof. NALINI N by her student AKSHAT SINGHAL as DIGITAL ASSIGNMENT – 1 and detailed content are presented later in the document.*


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# Abstract

Today, the word has been growing up to the level, that all programming languages have their own advantages and specifications. Among them, web programming and Java are most widely used. But, daily researches and discoveries have made it very complex. So, there arises a need to perform tasks very faster. In this paper, an implementation of parallel execution of process in internet and web programming have been demonstrated. Also along with what are the various way, in which we can proceed with further research on how algorithms can be parallelized are mentioned. Some good practices that are being practiced and that needs to be considered are described. Also, there are some other methods other than java for web programming. Their parallelism is also elaborated in the same. Along with that, a proof or analysis is also required in order to test whether the proposed methodology and procedural execution is valid or not.

# Keywords

1. Parallel Programming
2. Algorithms
3. Good Practices
4. Web semantics and strictures
5. High performance computing
6. Framework
7. Libraries
8. P – scripts

# Introduction

Java has turned into a main programming dialect not long after its discharge, particularly in online and disseminated figuring conditions, and it is a rising choice for High Performance Computing. The expanding enthusiasm for Java for parallel figuring depends on its engaging qualities: worked in systems administration and multithreading support, protest introduction, stage autonomy, transportability, type wellbeing, security, it has a broad API and a wide network of designers, lastly, it is the principle preparing dialect for software engineering understudies. Also, execution is not any more a hindrance. The execution hole amongst Java and local dialects has been narrowing for as far back as years, because of the Just-in-Time compiler of the Java Virtual Machine that acquires local execution from Java byte code. Be that as it may, the utilization of Java in HPC is being deferred by the absence of investigation of the current programming alternatives around there

and careful and up and coming assessments of their execution, and in addition the ignorance on ebb and flow explore extends in Java for HPC, whose arrangements are required so as to help its appropriation. As to stages, new arrangements are expanding essentially the quantity of centers introduced keeping in mind the end goal to meet the regularly developing computational power request. This present pattern to multi-center bunches underscores the significance of parallelism and multithreading capacities. In this situation Java speaks to an appealing decision for the improvement of parallel applications as it is a multithreaded dialect and gives worked in systems administration bolster, key highlights for taking full favorable position of cross breed shared/dispersed memory models.

# Literature Survey

## [1] Java in the High Performance Computing arena: Research, practice and experience

This paper analyzes the back and forth movement area of Java for HPC, both for shared and scattered memory programming, presents related research wanders, ultimately, evaluates the execution of rhythmic movement Java HPC courses of action and research headways on two shared memory circumstances and two InfiniBand multi-focus bundles. The essential finishes are that:

1. The enormous energy for Java for HPC has incited the change of different endeavors, yet usually precisely unassuming, which may have kept a higher change of Java in this field.
2. Java can achieve generally similar execution to privately aggregated vernaculars, both for back to back and parallel applications, being a possibility for HPC programming.
3. The progressing propels in the gainful help of Java correspondences on shared memory and low-idleness frameworks are traverse any boundary among Java and privately accumulated applications in HPC. Along these lines, the colossal prospects of Java around there are pulling in the thought of both industry and

the academic network, which can take important good position of Java appointment in HPC.

## [2] Parallel Processing Techniques for High Performance Image Processing Applications

The many-sided quality of many picture preparing applications and their stringent execution prerequisites have gone to a point where they can never again meet the continuous due dates, if actualized on ordinary designs in light of a solitary universally useful processor. Contingent upon the stage on which the application is made, the comparing good procedure is received. A mix of custom equipment and advanced programming instrument would give elite for the computationally concentrated ongoing frameworks.

Some advantages of this paper are –

1. As the image processing in the paper gives high performance.

2. As in many images noise gets reduced but was not able to complete the real time deadline where as in this it provides a great real time processing.
3. The use of many processors and accelerators such as GPU and FPGAs enhance the process.

## [3] Fusion of anatomical and functional images using parallel saliency features

In this paper, a technique is proposed for combination of anatomical and useful pictures by constructing the melded picture through the blend of parallel saliency includes in a multi-scale area. To begin with, the anatomical and practical pictures are disintegrated into a progression of smooth layers and detail layers at various scales by the normal channel. Second, the parallel saliency highlights of both sharp edge and shading subtle element are extricated to acquire the saliency maps. At long last, the intertwined picture is reproduced by the melded smooth layers and the combined detail layers utilizing saliency maps. We exhibit the application of the proposed strategy to a medicinal issue: Alzheimer's ailment.

Some points to be noticed which proved to be perfectly useful are –

1. Application of this algorithm has vast area of usage.

2. This paper properly presents how image can be transmitted without addition of noise

3. Parallel saliency feature reduces the chance of image getting noisy.

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