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Section: J

**Comparison between Process and Threads using sorting algorithms**

# Introduction:

## Process:

A process is the execution of a program that allows you to perform the appropriate actions specified in a program. It can be defined as an execution unit where a program runs. The OS helps you to create, schedule and terminate processes which is used by CPU. The other processes created by the main process are called child process.

## Threads:

The smallest execution unit within a process is a thread. A process can have multiple threads, all executing at the same time. It is a unit of execution in concurrent programming. A thread is lightweight and can be managed independently by a scheduler.

# Objective:

Compare runtime of three different algorithms (Selection sort, Quick sort, Merge sort) implemented using processes and threads.

# Project description:

Different algorithms are implemented for both processes and threads using different approaches. Data is divided into multiple partitions and sorted using the different approaches. For processes, Inter Process Communication is implemented using unnamed pipes.

# Graphs:

Above implementation didn’t respond for dataset of 500,000

Above implementation didn’t respond for dataset of 5,000, 50,000 and 500,000

Above implementation doesn’t respond for dataset of 500,000

Above implementation doesn’t respond for dataset of 500,000