ABSTRACT

Allocation of resources in a parallel machine will be done thoroughly to do the process that are in the top of queue, this will raises the inefficiency value of parallel machine resource if the problem on the top of queue only require resources in small portion, so the next problem in queue must wait for the first process finished to get resources allocation, so the time that required to finish all process in the queue will be higher.

This final task is created to changes the allocation paradigm of available resource in the parallel machine, so expected that more problems in the queue can be completed in a certain time, a decrease level of time will illustrate that the available resources can be use more efficiently. The Process of resource allocation will be done with modeling it into a graph of cartesian product model where is suitable with available resources of parallel machine, to get the information about parallel machine resource allocation, the graph model will be used in graph coloring process.

Based on the analysis has been done, this parallel machine resource allocation technique cause the decrease of time level that is required to completed a process and this technique is able to provide a efficiency value of parallel machine resource is relatively higher than parallel machine resources allocation technique in use today.

Keywords: parallel machines, f coloring, speed up, efficiency, graph , Cartesian Product.