Roll: P19-0033 Name: M. Istafa Malik

Parallel & Distributed Computing

Assignment

Amdahl's Law:-

It is named after computer scientist Gene Amdahl (a computer architect from joint computer Conference in 1967. It is also know as Amdahl's Argument.

Basically it is a formula which gives the theoratical speedup in latency of the execution of a task at a fixed workload that can be expected of a system whose resources are improved. In other words, it is a formula used to find the maximum improvement possible by just improving a particular part of a system. It is often used in parallel computing to predict the theoritical speedup when using multiple processors.

Speedup is defined as the ratio of performance for the entire task using the enhancement and performance for the entire task without using the enhancement.

Formula:

T = Total time of serial execution
B = Total time of non-parallelizable Part
T-B = Total time of parallelizable Part

$$T = B + (T - B)$$

$$\Rightarrow T(n) = B + (T - B)/N$$