

## **Assignment on MPI**

1. Implement a parallel Branch-and-Bound program for the Wandering Salesman Problem (WSP), using MPI.
2. Write a MPI program to find the sum of all the elements of an array A of size n. Elements of an array can be divided into two equals groups. The first  $\lfloor n/2 \rfloor$  elements are added by the first processor, P0, and last  $\lfloor n/2 \rfloor$  elements the by second processor, P1. The two sums then are added to get the final result.
3. Write a MPI program to find the sum of all the elements of an array A of size n using m number of processors. The two sums then are added to get the final result.
4. Write MPI program for Matrix multiplication.
5. Write MPI program to find the prime number.
6. Write MPI program to calculates  $\pi$ -number by integrating  $f(x) = 4 / (1+x^2)$  . Area under the curve is divided into rectangles and the rectangles are distributed to the processors.
7. Write MPI program to solve a two-dimensional Laplace equation using the point Jacobi iteration method over a rectangular domain.