NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA SURATHKAL
DEPARTMENT OF INFORMATION TECHNOLOGY

IT 301 Parallel Computing LAB

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MPI_Wtime(): PI includes the routine `MPI_Wtime()`which returns elapsed wall clock time in second

```
#include <stdio.h>
#include <mpi.h>

//NOTE: The MPI_Wtime calls can be placed anywhere between the MPI_Init and MPI_Finalize calls

main(int argc, char **argv)
{
   int node;
   double start,end,mytime;

   MPI_Init(&argc,&argv);
   start = MPI_Wtime();  //get the time just before task to be timed
   MPI_Comm_rank(MPI_COMM_WORLD, &rank);

   printf("Hello World from Node %d\n",node);

   end = MPI_Wtime() ; //get the time just after task is done  and take the difference

   mytime=end-start;

   printf("Timing from Process %d is %lf seconds.\n",rank,mytime);

   MPI_Finalize();

 }
```

NOTE: To find the average time you should be using MPI_Reduce on mytime variable and store the avearge time in Process 0 and then display it. Similary you can get minimum and maximum value also.

It is better to use MPI_Barrier() before recording the time inorder to synchronize the processes at the beginning of the task and end of the task.