Trabalho de Seminários II

## Terceiro Trabalho

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1.

1 #include <stdio.h>  
 2 #include <conio.h>  
 3 #include <mpi.h>  
 4 int main( )  
 5 {   
 6 int x;  
 7 int i;  
 8 int y = 0;  
 9 int myrank, nprocs;  
10   
11 MPI\_Init(NULL,NULL);  
12 MPI\_Comm\_rank(MPI\_COMM\_WORLD, &myrank);  
13 MPI\_Comm\_size(MPI\_COMM\_WORLD, &nprocs);  
14   
15 printf( "Digite um nÃºmero inteiro: " );  
16 scanf( "%d",&x);  
17 int receber = myrank + 1;  
18   
19 if( x > 0 )  
20 {  
21 for( i = 0; i > x; i++ )  
22 {  
23 if( i % 2 != 0 )  
24 {  
25 MPI\_Send(y, 1, MPI\_INT, receber, 0, MPI\_COMM\_WORLD);  
26 }  
27 else  
28 {  
29 MPI\_Recv(y, 1, MPI\_INT, receber, 0, MPI\_COMM\_WORLD, MPI\_ANY\_SOURCE);  
30 }  
31 }  
32 }  
33 printf( "Quantidade de números primos: %d\n",receber );  
34 MPI\_Finalize();  
35 }

2.

1 #include <mpi.h>   
 2 #include <math.h>  
 3   
 4 int main(argc,argv)   
 5 int argc;   
 6 char \*argv[];   
 7 {   
 8 int done = 0, n, ID, proc, i, rc;   
 9 double pis = 3.141592653589793238462643;   
10 double mainpi, pi, h, sum, x, a;  
11   
12 MPI\_Init(&argc,&argv);   
13 MPI\_Comm\_size(MPI\_COMM\_WORLD,&proc);   
14 MPI\_Comm\_rank(MPI\_COMM\_WORLD,&ID);  
15   
16 while (!done)   
17 {   
18 if (myid == 0) {   
19 printf("Entrar com números de intervalos: (0 quits) ");   
20 scanf("%d",&n);   
21 }   
22 MPI\_Bcast(&n, 1, MPI\_INT, 0, MPI\_COMM\_WORLD);   
23 if (n == 0) break;   
24   
25 h = 1.0 / (double) n;   
26 sum = 0.0;   
27 for (i = mainpi + 1; i <= n; i += proc) {   
28 x = h \* ((double)i - 0.5);   
29 sum += 4.0 / (1.0 + x\*x);   
30 }   
31 mainpi = h \* sum;  
32 MPI\_Reduce(&mainpi, &pi, 1, MPI\_DOUBLE, MPI\_SUM, 0, MPI\_COMM\_WORLD);  
33 if (ID == 0)   
34 printf("pi é aproximadamente %.16f, Error is %.16f\n", pi, fabs(pi - pis));   
35 }   
36 MPI\_Finalize();   
37 }