

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 número 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,
26 MPI_COMM_WORLD);
27             }
28             else
29             {
30                 MPI_Recv(y, 1, MPI_INT, receber, 0,
31 MPI_COMM_WORLD, MPI_ANY_SOURCE);
32             }
33         }
34     }
35     printf( "Quantidade de números primos: %d\n", receber );
36     MPI_Finalize();
37 }
```

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 }

```