

Solution 7

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

int main (int argc, char* argv[]){

    int my_id, num_procs, inserted_num,modified_num;

    MPI_Init(&argc, &argv);      /* starts MPI */
    MPI_Comm_rank (MPI_COMM_WORLD, &my_id);      /* get current process id */
    MPI_Comm_size (MPI_COMM_WORLD, &num_procs); /* get number of processes */

    printf("my_id is %d and modified_num before broadcast is %d\n", my_id,modified_num); /* not initialized value!!! */

    if(my_id == 0) {
        /* printf("Insert an integer value: \n");      In case of interactive run */
        /* scanf("%d", &inserted_num);*/
        inserted_num=57;
        printf("Inserted num is :%d\n", inserted_num);
        modified_num = inserted_num*inserted_num ;
    }

    else {
        inserted_num=0;
        modified_num=0;
    }

    MPI_Bcast(&modified_num, 1, MPI_INT, 0, MPI_COMM_WORLD);

    printf("my_id is %d ,inserted_num is %d and modified_num is %d\n", my_id,inserted_num,modified_num);
```

```
MPI_Finalize();  
return 0;  
}
```

FORTRAN

```
PROGRAM main  
  
IMPLICIT NONE  
  
include 'mpif.h'  
  
INTEGER :: ierr, my_id, num_procs, inserted_num, modified_num, buffer  
  
CALL MPI_INIT( ierr )  
CALL MPI_COMM_RANK( MPI_COMM_WORLD, my_id, ierr )  
CALL MPI_Comm_size ( MPI_COMM_WORLD, num_procs, ierr )  
  
IF( my_id == 0 ) THEN  
! WRITE(*,*) "Insert an integer value : " ! In case of interactive run  
! READ(*,*) inserted_num  
inserted_num = 57  
modified_num = inserted_num*inserted_num  
ELSE  
inserted_num = 0  
modified_num = 0  
ENDIF  
  
CALL MPI_BCAST(modified_num, 1, MPI_INTEGER, 0, MPI_COMM_WORLD, ierr)  
  
WRITE(*,*) "my_id", my_id, "inserted_num", inserted_num, "modified_num", modified_num  
  
CALL MPI_FINALIZE(ierr)  
  
END PROGRAM main
```

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