Call XMP program from a program using MPI

● Implement following functions (which are defined in xmp.h)

Language	Return Value Type	Function	Description
XMP/C	void	xmp_init(MPI_Comm)	Initialize XMP environment
XMP/F	(None)	xmp_init(Integer)	
XMP/C	void	xmp_finalize(void)	Finalize XMP environment
XMP/F	(None)	xmp_finalize()	

A program using MPI (mpi.c)

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

int main(int argc, char **argv){
  MPI_Init(&argc, &argv);

  xmp_init(MPI_COMM_WORLD);
  call_xmp();
  xmp_finalize();
```

XMP program (xmp.c)

```
void call_xmp(){
#pragma xmp nodes p[3]
     :
```

```
$ xmpcc xmp.c -c
$ mpicc mpi.c -c
$ xmpcc xmp.o mpi.o -o a.out
$ mpirun -np 3 a.out
```

Call a program using MPI from XMP program

● Implement following functions (which are defined in xmp.h)

Language	Return Value Type	Function	Description
XMP/C XMP/F	void (None)	xmp_init_mpi(int*, char***) xmp_init_mpi()	Initialize MPI environment
XMP/C XMP/F	MPI_Comm Integer	xmp_get_mpi_comm(void) xmp_get_mpi_comm()	Create MPI communicator from XMP node set
XMP/C XMP/F	void (None)	xmp_finalize_mpi(void) xmp_finalize_mpi()	Finalize MPI environment

XMP program (xmp.c)

```
#include <xmp.h>
#include <mpi.h>
#pragma xmp nodes p[3]

int main(int argc, char **argv){
  xmp_init_mpi(&argc, &argv);
  MPI_Comm comm = xmp_get_mpi_comm();
  call_mpi(comm);
  xmp_finalize_mpi();
```

A program using MPI (mpi.c)

```
#include <mpi.h>

void call_mpi(MPI_Comm comm){
  int rank, size;
  MPI_Comm_rank(comm, &rank);
  MPI_Comm_size(comm, &size);
```

```
$ xmpcc xmp.c -c
$ mpicc mpi.c -c
$ xmpcc xmp.o mpi.o -o a.out
$ mpirun -np 3 a.out
```