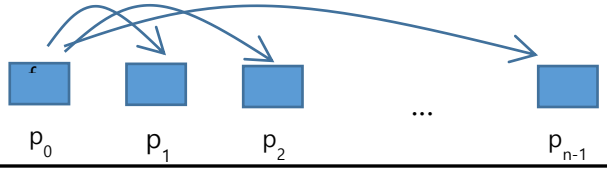
Lab8 – MPI(collective)

e.g.1 Broadcasting(MPI_Bcast)

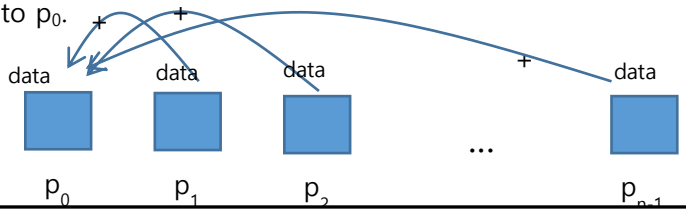
Complete the following MPI program to broadcast a data from p_0 to all other processes




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

main(int argc, char* argv[])
{
    int np, pid, tag = 0;
    float data;
    MPI_Status status;

    MPI_Init(&argc, &argv);
    MPI_Comm_size(MPI_COMM_WORLD, &np);
    MPI_Comm_rank(MPI_COMM_WORLD, &pid);

    if (pid == 0) data = 100.0;
    ____________________________

    printf("%f₩n", pid+data);
    MPI_Finalize();
}
```

e.g.2 Reduction(MPI_Reduce)

Complete the following MPI program to reduce(with addition) data from all other processes to p_0.




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

main(int argc, char* argv[])
{
    int np, pid, tag = 0;
    float data;
    MPI_Status status;
    ...
    data = pid + 100.0;
    ____________________________

    if (pid == 0) printf("%f₩n", data);
    MPI_Finalize();
}
```

ex. Redo homework#4(area.c) using MPI_Reduce() and submit it.