B_cast (one to all)
MPI_BCase(void*buffer,int count,MPI_Data type data type,int root,MPI_Comm comm);

Reduce (all to one)
MPI_Reduce(void*sendbuff,void*revbuf,intcount,MPI_Datatype datatype,MPI_op op,int root,MPI_comm comm)

Scan (often used for operations like computing cumulative sums or other associative operations where each process's data depends on the results of previous processes)
MPI_Scan (void sendbuf , void recvbuf , int count,MPI_Datatype datatype, MPI_Op op,MPI_Comm comm)

ALL Reduce (reduction operation on data across all processes within a communicator,All processes collect data from all others and perform an operation (e.g., sum, min, max) on the data)
MPI_Allreduce(void*sendbuf,void*recvbuff,intcout,MPI_Datatype datatype,MPI_op op,MPI_comm comm)

Gather (collecting data from all processes)
MPI_Gather(void*sendbuf,int sendcnt,MPI_Datatype sendtype,void*recvbuf,intrecv cnt,MPI_Datatype recvtype,introot,MPI_Comm comm)

Scatter (scatters data from the root process to all other processes)
MPI_Scatter(void*sendbuf,int sendcnt,MPI_Datatype sendtype,void *recvbuf,int revcnt,MPI_Datatype_recvtype,introot,MPI_Comm comm)

ALLgather (gathers data from all processes to all other processes within a communicator)
MPI_ALLgather(void*sendbuf,intsendcnt,MPI_Datatype sendtype,void*recvbuff,int recvcnt,MPI_Datatype recvtype,MPI_comm comm)

ALL TO ALL (used when processes need to exchange data with every other process in the communicator)
MPI_ALLtoall(void*sendbuf,int sendcnt,MPI_Datatype sendtype,void*recvbuf,intrecv cnt,MPI_Datatype recvtype,MPI_Comm comm)