Assignment 4: Matrix Multiplication using MPI

Problem Description

In this assignment, you are supposed to calculate the product of two matrices A (of size N*32) and B (of size 32*N), which should be an N*N matrix. Specifically, you are supposed to:

- Design a parallel scheme for computing matrix multiplication, including how to:
  - Separate the task into divisions and let each process finish one division
  - Transfer data between processes
  - Form the output matrix using the result of each process.
- Implement the parallel mechanism with any type of communications in MPI (e.g., Blocking communication (MPI_Send/MPI_Recv), or Collective communication).
- Observe the running time of your programs; change some of the parameters to see how it is associated with N and communication type (and number of processes, if available).