Parallel Processing Lab

1. Write a program to multiply K different matrices A of dimension MxN with matrices B of dimension NxP dimension matrices. Where K is the number of matrices.

K \* M \* N <= 10^6; K \* N \* P<= 10^6; K \* M \* P <= 10^6;

**(a).** Using MPI

**(b).** Using CUDA

**Input:** K, M, N, P

**Output:** Time taken for multiplication

1. Write a program to count the words in a **file** and sort it in descending order of frequency of words i.e., highest occurring word must come first and the least occurring word must come last.

**(a).** Using MPI

**(b).** Using CUDA

**Input:** No. of processes, (Text input from file)

**Output:** Total time, top 10 occurrences

1. A phonebook is given as a file. Write a program to search for all the contacts matching a name.

**(a).** Using MPI

**(b).** Using CUDA

**Input:** No. of processes, (phonebook from file)

**Output:** Total time, Matching names and contact numbers

1. Given a paragraph and a pattern like **%x%**, write a program to find out the number of occurrences of the given pattern inside the text.

**(a).** Using MPI

**(b).** Using CUDA

**Input:** No. of processes, (paragraph from file)

**Output:** Total time, No. of occurrences of the pattern