

Assignment 2

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Problem statement - To develop any distributed application using Message Passing Interface (MPI).

Code:

```
import mpi.*;
import java.util.*;
import java.io.File;
import java.io.FileWriter;
public class Assign2{
    public static void main(String args[]) throws Exception{
        MPI.Init(args);
        int id = MPI.COMM_WORLD.Rank()+1, token1;
        int size = MPI.COMM_WORLD.Size();
        Random rand = new Random();
        List<Integer> temp = new ArrayList<Integer>();

        Scanner inFile1 = new Scanner(new File("file"+id+".txt"));
        Scanner ansFile = new Scanner(new File("ansFile.txt"));
        //Thread.sleep(200);
        Thread.sleep(rand.nextInt(200));
        while (inFile1.hasNext()) {

            token1 = Integer.parseInt(inFile1.next());
            temp.add(token1);
        }
        inFile1.close();
        //Thread.sleep(200);
        token1 = Integer.parseInt(ansFile.next());
        int ans = token1 + temp.get(0) + temp.get(1);

        FileWriter fileWrite = new FileWriter("ansFile.txt");

        fileWrite.write(ans+" ");

        fileWrite.close();
    }
}
```

```
        System.out.println("Process ID "+ id + " Added " +  
temp.get(0) + "," + temp.get(1));  
  
        System.out.println("");  
        System.out.println(ans);  
  
        MPI.Finalize();  
  
    }  
}
```

//Commands::
//export MPJ_HOME=[Path of mj express folder]
//javac -cp \$MPJ_HOME/lib/mpj.jar Assign2.java
//\$MPJ_HOME/bin/mpjrun.sh -np [no. of machines to be created]
Assign2

HELPER FILES :

File1.txt

10 20

File2.txt

30 40

File3.txt

50 60

File4.txt

70 80

Ansfile.txt

360

OUTPUT:

```
onkar@ubuntu:~/Downloads/MPI$ export MPJ_HOME=/home/onkar/Downloads/MPI/mpj-v0_44
onkar@ubuntu:~/Downloads/MPI$ javac -cp $MPJ_HOME/lib/mpj.jar Assign2.java
onkar@ubuntu:~/Downloads/MPI$ $MPJ_HOME/bin/mpjrun.sh -np 4 Assign2
MPJ Express (0.44) is started in the multithread configuration
Process ID 3 Added 50,60
1190
Process ID 2 Added 30,40
1260
Process ID 1 Added 10,20
1290
Process ID 4 Added 70,80
1440
onkar@ubuntu:~/Downloads/MPI$
```