LAB ASSIGNMENT – 1

Matrix Addition using Mapreduce

Let the matrix A having i rows and j columns and matrix B having m rows and n columns be the input matrices.

Let the matrix C be the output matrix which is the sum of matrices A and B.

Function Mapreduce(A,B,C)

{

get A[i][j];

get B[m][n];

if(i!=m && j!=n)

Matrix addition not possible;

Else

{

function map( Matrix A, Matrix B)

{

i=0;

while(i<m)

{for(j=0;j<n;j++)

{for each element A[i][j]

{Emit(key k, A[i][j]);

j++;

}

for each element B[i][j]

{Emit(key k, B[i][j]);

i++;

}

i++;

}

}

}

function reduce(key k,A[i][j], B[i][j])

{

// k is the unique identifier key used to sync the matrix values and elements from A and B

For each key k mapped to A[i][j] and B[i][j]

{For each value in the corresponding key value pair

{If key k has a next KeyValue Pair

{C[i][j]=A[i][j]+B[i][j];

Emit(k, C[i][j]);

}

}

}

}