Matrix Addition using Map and Reduce

Step1 : Lets take two matrix A and B with order m*n as input to map function

Step2 : In Map function, split the matrix into separate rows in the first step and then into single elements having a key value pairs as **(m*n, A_{m*n}).** In the same way we split the B matrix.
(This can be done with the help of two Nested For loops , One for rows and for columns)

Step3 : In the Reduce function, we add the two matrix and reduce into one matrix and now the key value pairs are (**m*n, $A_{m*n} + B_{m*n}$**).
(This can be done with the help of two nested For loops, one loop representing the rows and other representing the columns.)

Sample Map & Reduce functions

```
Map(int m, int n, A m*n)
{
    for( int i=1, i<=m, i++)
    {
      for (int j=1,j<=n, j++)
      {
        emit (i*j, Ai*j);
      }
    }
}
```

Apply the same for Matrix B

```
Reduce(int m, int n, Am*n, Bm*n)
{
        for( int i=1, i<=m, i++)
    {
      for (int j=1,j<=n, j++)
      {

        emit (i*j, Ai*j+Bi*j);
      }
    }
}
```