

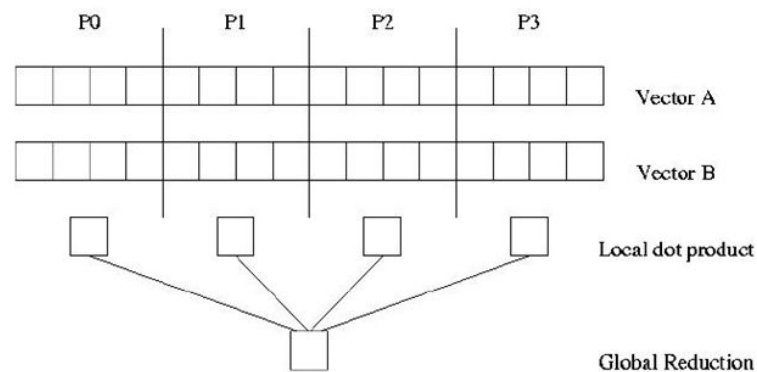
Dot product method:

Suppose there are two vectors A and B each with size  $i$ . Then if we are to compute the dot product of these vectors we have to iterate through 0 to  $i-1$  as store in the array with 0-indexing and multiply the  $a[i]$  and  $b[i]$  while adding to the result.

```
Result = 0; //initialize
Loop from 0 to i-1
    result = result + a[i]*b[i];
end loop
```

parallelization:

Now to parallelize the code we can divide the vector part by part with respect to the process available and then parallelly compute the dot product at locally at each process and then add the local sum to get the result:



method:

1. divide the array to each process so that each process gets  $n/p$  local small array;
2. Now parallelly compute the dot product of the sub arrays.
3. compute the global sum by adding the local values.