



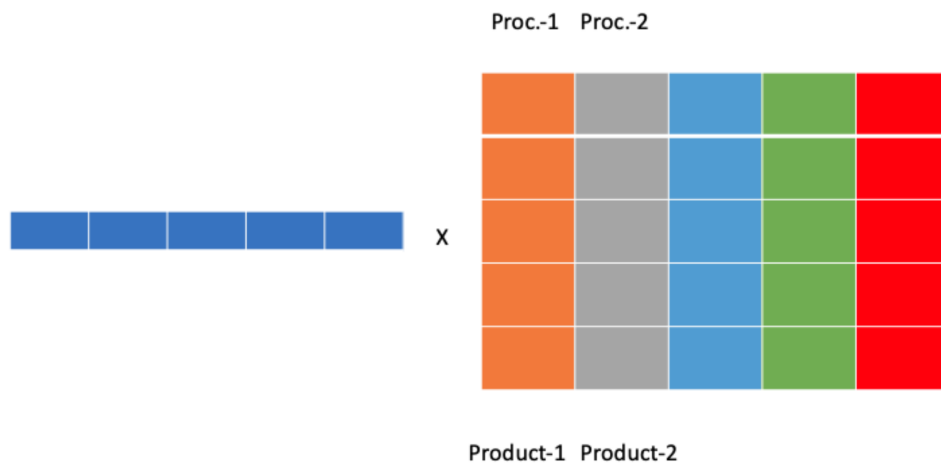
## MPI exercise: array-matrix product

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**total points: 20**

Suppose we want to calculate a large array and matrix production using parallel technique. One simple way to try is to distribute this array to every processor, as the same time divide the matrix into columns and send each processor a column. The array-matrix product simply becomes the array-array product on each processor and the final result of array-matrix production can be constructed from the solution on each processor.

Please design a MPI program to calculate the array-matrix product by using the above strategy. The size and content of the array and matrix can be anything you like.



**Figure 1:** Illustration of MPI strategy for array-matrix product