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**Scalar product****P71310\_en**

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The scalar product of two vectors  $u = (u_0, \dots, u_{n-1})$  and  $v = (v_0, \dots, v_{n-1})$  is  $\sum_{i=0}^{n-1} u_i v_i$ .

Write a function that returns the scalar product of  $u$  and  $v$ .

**Interface**

C++	<b>double</b> <i>scalar_product</i> ( <b>const</b> <b>vector</b> < <b>double</b> >& $u$ , <b>const</b> <b>vector</b> < <b>double</b> >& $v$ );
C	<b>double</b> <i>scalar_product</i> ( <b>int</b> $n$ , <b>double</b> $u[n]$ , <b>double</b> $v[n]$ );
Java	<b>public static double</b> <i>scalarProduct</i> ( <b>double</b> [] $u$ , <b>double</b> [] $v$ );
Python	<i>scalar_product</i> ( $u$ , $v$ ) # returns float
MyPy	<i>scalar_product</i> ( $u$ : list [ float ], $v$ : list [ float ]) $\rightarrow$ float

**Precondition**

The vectors  $u$  and  $v$  have the same size.

**Observation**

You only need to submit the required procedure; your main program will be ignored.

**Problem information**

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