Utility: nagdmc_tab2

Purpose

nagdmc_tab2 cross-tabulates data values in two arrays containing classifications.

Declaration

```
#include <nagdmc.h>
void nagdmc_tab2(long n, long ncat, long bcat, long array1[], long array2[],
                 long counts[], long *ndiff, int *info);
```

Parameters

1: **n** – `long` *Input*

On entry: the number of classifications to compare.

Constraint: $\mathbf{n} \geq 1$.

2: **ncat** – `long` *Input*

On entry: the number of categories (classes) in the arrays.

Constraint: $\mathbf{ncat} > 1$.

3: **bcat** – `long` *Input*

On entry: the base category value for the categories in **array1** and **array2**. **bcat** should be set so that the lowest category value minus **bcat** equals zero.

4: **array1**[**n**] – `long` *Input*

On entry: the integer values for the first classification.

Constraint: $0 \leq \mathbf{array1}[i] - \mathbf{bcat} < \mathbf{ncat}$, for $i = 0, 1, \ldots, \mathbf{n} - 1$.

5: **array2**[**n**] – `long` *Input*

On entry: the integer values for the second classification.

Constraint: $0 \leq \mathbf{array2}[i] - \mathbf{bcat} < \mathbf{ncat}$, for $i = 0, 1, \ldots, \mathbf{n} - 1$.

6: **counts**[**ncat**∗**ncat**] – `long` *Output*

On exit: $\mathbf{counts}[i * \mathbf{ncat} + j]$ is the value of the cross-tabulation between the ith variable in **array2** and the jth variable in **array1**.

7: **ndiff** – `long *` *Output*

On exit: the sum of the off-diagonal elements in **counts**, i.e., the number of disagreements between the classifications in **array1** and **array2**.

8: **info** – `int *` *Output*

On exit: **info** gives information on the success of the function call:

0: the function successfully completed its task.

i; $i = 1, 2, 4, 5$: the specification of the ith formal parameter was incorrect.

Notation

n	number of classifications, n.
ncat	number of categories, k.
bcat	base level category value, h.
array1	an array of classifications, say a.
array2	the other array of classifications, b.
ndiff	total number of disagreements between the classifications, p.

Description

Let a and b be two arrays each containing n classifications. The ith value in a and b may be any one of k category labels $h+l$, for $l = 0, 1 \ldots, k-1$ and a user-supplied integer value h. A cross-tabulation of a (rows) with b (columns) yields:

$$\begin{array}{cccc} c_{11} & c_{12} & \cdots & c_{1k} \\ c_{21} & c_{22} & \cdots & c_{2k} \\ \vdots & \vdots & \vdots & \vdots \\ c_{k1} & c_{k2} & \cdots & c_{kk}. \end{array}$$

The cell c_{ii} gives the number of times the classifications a and b agree for category $h+i-1$. Each off-diagonal cell, c_{ij} with $i \neq j$, contains the number of times a classifies as category $h+i-1$ when b classifies as $h+j-1$. The sum of these off-diagonal cells gives the total number of disagreements, p, between the classifications.

References and Further Reading

None.

See Also

None.