

Shape Of

\$ \_ 1 \_

Shape

\$ y yields the shape of y as defined in Section II A. For example, the shape of a 2-by-3 matrix is 2 3, and the shape of the scalar 3 is an empty list (whose shape is 0).

The rank of an argument y is #@ \$ y.  
For example:

```
rank=: #@ $
(rank 3) , (rank ,3)
0 1
(rank 3 4) , (rank i. 2 3 4)
1 3
```

The shape of x\$y is x,siy where siy is the shape of an item of y; x\$y gives a length error if y is empty and x,siy does not contain a zero. For example:

```
y=: 3 4$'abcdefghijkl'
y ; 2 2$ y
```

```
+-----+
|abcd|abcd|
|efgh|efgh|
|ijkl|ijkl|
|    |abcd|
+-----+
```

This example shows how the result is formed from the items of y, the last 1-cell (abcd) showing that the selection is cyclic. The fit conjunction (\$! . f) provides fill specified by the items of f.

Since x \$ y uses items from y, it is sometimes useful to ravel the right argument, as in x \$ ,y. For example (using the y defined above):

```
2 3 $ ,y
abc
def
```

The fit conjunction is often useful for appending zeros or spaces. For example:

```
8 $!.0 (2 3 4)
2 3 4 0 0 0 0 0

]z=: 8$!. '*' 'abc'
abc*****

|. z
*****cba

2 5$!.a: ;: 'zero one two three four five six'
+-----+
|zero|one|two|three|four|
+-----+
|five|six|   |   |   |
+-----+
```