iemisc: Additional Examples from GNU Octave size Compatible Functions

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Contents

size Examples (R style)

```
library("iemisc")

import::from(gsubfn, list)
import::from(ramify, mat)
```

```
# Example from GNU Octave ndims function reference

size(matlab::ones(4, 1, 2, 1))
```

```
## [1] 4 1 2
```

```
# Examples from GNU Octave size function reference

object1 <- matrix(c(1, 2, 3, 4, 5, 6), nrow = 3, ncol = 2, byrow = TRUE)

size(object1)
```

```
## [1] 3 2
```

```
list[nr, nc] <- size(matrix(c(1, 2, 3, 4, 5, 6), nrow = 3, ncol = 2, byrow = TRUE))
nr
```

```
## [1] 3
```

```
nc
```

```
## [1] 2
```

```
size(matrix(c(1, 2, 3, 4, 5, 6), nrow = 3, ncol = 2, byrow = TRUE), 2)
```

```
## [1] 2
```

```
# using ramify's mat

size(mat("1, 2; 3, 4; 5, 6"))
```

```
## [1] 3 2
```

```
size(mat("1, 2; 3, 4; 5, 6"), 2)
```

```
## [1] 2
```

```
list[nr, nc] <- size(mat("1, 2; 3, 4; 5, 6"))
nr
```

```
## [1] 3
```

```
nc
```

```
## [1] 2
```

```
size(matlab::ones(4, 3, 4, 8), 4)
```

```
## [1] NA
```

```
size(matlab::ones(4, 3, 4, 5), 3)
```

```
## [1] 4
```

```
## The following can't be done currently with this function:

# list[nr, remainder] <- size(matlab::ones(2, 3, 4, 5)); nr; remainder

## As a work around to get similar results to GNU Octave, do the following:

nr <- size(matlab::ones(2, 3, 4, 5), 1)
nr
```

```
## [1] 2
```

```r
remainder <- size(matlab::ones(2, 3, 4, 5), 2)
remainder
```

```
## [1] 60
```

```r
# Examples from pracma size

size(1:8)
```

```
## [1] 1 8
```

```r
size(matrix(1:8, 2, 4))
```

```
## [1] 2 4
```

```r
size(matrix(1:8, 2, 4), 2)
```

```
## [1] 4
```

```r
size(matrix(1:8, 2, 4), 3)
```

```
## [1] NA
```

```r
ss <- "object"

size(ss)
```

```
## [1] 1 6
```

size Examples (GNU Octave style)

```octave
% check against GNU Octave

% Example from GNU Octave ndims function reference

size(ones(4, 1, 2, 1))


% Examples from GNU Octave size function reference

object1 = [1, 2; 3, 4; 5, 6]

size(object1)


[nr, nc] = size([1, 2; 3, 4; 5, 6])

size([1, 2; 3, 4; 5, 6], 2)

size([1 2; 3 4; 5 6])

size([1 2; 3 4; 5 6], 2)

[nr, nc] = size([1, 2; 3, 4; 5, 6])
```

```
nr
nc

size(ones(2, 3, 4, 5))

[nr, remainder] = size(ones(2, 3, 4, 5))
nr
remainder

size(ones(4, 3, 4, 8), 4)

size(ones(4, 3, 4, 5), 3)




% Examples from pracma size

size(1:8)

object2 = [1 3 5 7; 2 4 6 8]

size(object2)

size(object2, 2)

size(object2, 3)

ss = 'object'

size(ss)



% results

>> % Example from GNU Octave ndims function reference
>>
>> size(ones(4, 1, 2, 1))
ans =

   4   1   2

>>
>>
>> % Examples from GNU Octave size function reference
>>
>> object1 = [1, 2; 3, 4; 5, 6]
object1 =

   1   2
   3   4
   5   6
```

```
>>
>> size(object1)
ans =

   3   2

>>
>>
>> [nr, nc] = size([1, 2; 3, 4; 5, 6])
nr =  3
nc =  2
>>
>> size([1, 2; 3, 4; 5, 6], 2)
ans =  2
>>
>> size([1 2; 3 4; 5 6])
ans =

   3   2

>>
>> size([1 2; 3 4; 5 6], 2)
ans =  2
>>
>> [nr, nc] = size([1, 2; 3, 4; 5, 6])
nr =  3
nc =  2
>> nr
nr =  3
>> nc
nc =  2
>>
>> size(ones(2, 3, 4, 5))
ans =

   2   3   4   5

>>
>> [nr, remainder] = size(ones(2, 3, 4, 5))
nr =  2
remainder =  60
>> nr
nr =  2
>> remainder
remainder =  60
>>
>> size(ones(4, 3, 4, 8), 4)
ans =  8
>>
>> size(ones(4, 3, 4, 5), 3)
ans =  4
>>
>>
```

```
>>
>>
>> % Examples from pracma size
>>
>> size(1:8)
ans =

   1   8

>>
>> object2 = [1 3 5 7; 2 4 6 8]
object2 =

   1   3   5   7
   2   4   6   8

>>
>> size(object2)
ans =

   2   4

>>
>> size(object2, 2)
ans =  4
>>
>> size(object2, 3)
ans =  1
>>
>> ss = 'object'
ss = object
>>
>> size(ss)
ans =

   1   6

>>
```

length_octave Examples (R style)

```
library("iemisc")

import::from(matlab, ones)

# Example from pracma isempty

object1 <- matrix(0, 1, 0)

length_octave(object1)
```

```
## [1] 0
```

```r
object2 <- 2

length_octave(object2)
```

```
## [1] 1
```

```r
object3 <- 1:10

length_octave(object3)
```

```
## [1] 10
```

```r
object4 <- ones(3, 4)

length_octave(object4)
```

```
## [1] 4
```

```r
object5 <- "ss"

length_octave(object5)
```

```
## [1] 2
```

```r
object6 <- list(letters, b <- 2)

length_octave(object6)
```

```
## [1] 2
```

length Examples (GNU Octave style)

```octave
% check against GNU Octave

object1 = [];

length(object1)


object2 = 2;

length(object2)


object3 = 1:10;

length(object3)


object4 = ones(3, 4);
```

```
length(object4)


object5 = 'ss';

length(object5)




%% results

>> object1 = [];
>>
>> length(object1)
ans = 0
>>
>>
>> object2 = 2;
>>
>> length(object2)
ans =  1
>>
>>
>> object3 = 1:10;
>>
>> length(object3)
ans =  10
>>
>>
>> object4 = ones(3, 4);
>>
>> length(object4)
ans =  4
>>
>>
>> object5 = 'ss';
>>
>> length(object5)
ans =  2
```

numel Examples (R style)

```
library("iemisc")

import::from(matlab, ones)

xx <- list(1:26, 1:10)

numel(xx)
```

```
## [1] 2
```

```r
# Examples from GNU Octave numel

a <- 1

b <- ones(2, 3)

numel(a, b)
```

```
## [1] 6
```

```r
a <- 2

b <- ones(2, 3)

c <- ones(3, 4)

numel(a, b)
```

```
## [1] 6
```

```r
numel(a, b, c)
```

```
## [1] 72
```

```r
f <- matrix(c(10, 12, 23, 21, 62, 93), nrow = 2, ncol = 3, byrow = TRUE)

g <- c(2, 4)

numel(f, g)
```

```
## [1] 2
```

numel Examples (GNU Octave style)

```octave
% check against GNU Octave

xx = {1:26, 1:10}


% Examples from GNU Octave numel
a = 1;

b = ones(2, 3);

numel(a, b)


a = 2;

b = ones(2, 3);
```

```
c = ones(3, 4);

numel(a, b)

numel(a, b, c)


f = [10 12 23; 21 62 93];

g = [2 4];

numel(f, g)



% results

>> xx = {1:26, 1:10}
xx =
{
  [1,1] =

   Columns 1 through 15:

      1    2    3    4    5    6    7    8    9   10   11   12   13   14   15

   Columns 16 through 26:

     16   17   18   19   20   21   22   23   24   25   26

  [1,2] =

      1    2    3    4    5    6    7    8    9   10

}
>>
>>
>> % Examples from GNU Octave numel
>> a = 1;
>>
>> b = ones(2, 3);
>>
>> numel(a, b)
ans =  6
>>
>>
>> a = 2;
>>
>> b = ones(2, 3);
>>
>> c = ones(3, 4);
>>
>> numel(a, b)
```

```
ans =  6
>>
>> numel(a, b, c)
ans =  72
>>
>>
>> f = [10 12 23; 21 62 93];
>>
>> g = [2 4];
>>
>> numel(f, g)
ans =  2
>>
```

ndims Examples (R style)

```
library("iemisc")

# Examples from GNU Octave ndims

b <- matlab::ones(c(4, 1, 2, 1))

ndims(b)

## [1] 3
```

ndims Examples (GNU Octave style)

```
% check against GNU Octave

% Example from GNU Octave ndims

ndims(ones(4, 1, 2, 1))


% results

>> ndims(ones(4, 1, 2, 1))
ans =  3
```

isrow Examples (R style)

```
library("iemisc")

# Examples

xx <- ramify::mat("1, 2")
xx
```

1	2

```
isrow(xx)
```

```
## [1] TRUE
```

```
xy <- ramify::mat("1, 2; 3, 4")
xy
```

1	2
3	4

```
isrow(xy)
```

```
## [1] FALSE
```

isrow Examples (GNU Octave style)

```
% check against GNU Octave

isrow([1 2])

isrow([1 2; 3 4])



% results

>> isrow([1 2])
ans = 1
>>
>> isrow([1 2; 3 4])
ans = 0
>>
```

iscolumn Examples (R style)

```
library("iemisc")

# Examples

xxx <- ramify::mat("1, 2")
xxx
```

1	2

```
iscolumn(xxx)
```

```
## [1] FALSE
```

```
xyy <- ramify::mat("1; 2")
xyy
```

1
2

```
iscolumn(xyy)
```

```
## [1] TRUE
```

iscolumn Examples (GNU Octave style)

```
% check against GNU Octave

iscolumn([1 2])

iscolumn([1; 2])



% results

>> iscolumn([1 2])
ans = 0
>>
>> iscolumn([1; 2])
ans = 1
>>
```

Works Cited

John W. Eaton, David Bateman, Søren Hauberg, and Rik Wehbring (November 2022). *GNU Octave: A high-level interactive language for numerical computations*: Edition 7 for Octave version 7.3.0. https://docs.octave.org/octave.pdf. Pages 46-48, 68.

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