

Random Number Generator in a Range

MATLAB Implementation

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rand2

Generates a matrix of random numbers between specified lower and upper bounds.

Syntax

```
rand2(a,b)
rand2(a,b,[],typename)
rand2(a,b,[m,n])
rand2(a,b,[m,n],typename)
```

Description

`rand2(a,b)` returns one double-precision floating-point number between a and b .

`rand2(a,b,[],typename)` returns one random number of data type `typename` between a and b . The `typename` input can be 'int' (integers), 'single' (single-precision floating point numbers), or 'double' (double-precision floating point numbers).

`rand2(a,b,[m,n])` returns an $m \times n$ matrix of random double-precision floating-point numbers between a and b .

`rand2(a,b,[m,n],typename)` returns an $m \times n$ matrix of random numbers of data type `typename`. The `typename` input can be 'int' (integers), 'single' (single-precision floating point numbers), or 'double' (double-precision floating point numbers).

Examples

Example 1

Generate one random double between $a = -2.3$ and $b = 5.5$

■ SOLUTION

```
x = rand2(-2,5)

x =

    4.7975
```

Example 2

Generate one random single between $a = -20.1$ and $b = -10$

■ SOLUTION

```
X = rand2(-20.1,-10,[],'single')
X =
    single
   -16.4349
```

Example 3

Generate a 5×1 vector of random integers between $a = -100$ and $b = 100$.

■ SOLUTION

```
X = rand2(-100,100,[5,1],'int')
X =
    19
   -52
    69
    72
    93
```

Example 4

Generate a 10×9 matrix of random double between $a = 37.234$ and $b = 49.5869$.

■ SOLUTION

```
X = rand2(37.234,49.5869,[10,9])
X =
    41.5783    48.9087    48.2243    43.9763    46.7629    47.8149    47.2225
    48.2973    46.3959
    47.1503    46.3074    42.5047    41.7195    46.2046    40.6686    39.8432
    45.5151    47.0909
    46.9132    48.7850    38.0038    47.1557    39.3809    39.4256    43.5242
    48.5833    44.3081
    44.1270    40.5826    43.9497    44.0783    47.0463    40.4757    48.9926
    42.8177    46.7184
    40.8926    43.8141    40.2850    48.5330    38.2767    41.8502    41.9095
    48.3437    41.6195
    45.4862    38.5658    40.4121    47.8212    42.5587    41.1579    38.5179
    38.0642    40.4581
    40.5702    46.3256    41.5839    41.9215    46.0455    48.2024    40.3503
    44.7134    41.4362
    43.0207    44.6218    39.0554    44.0104    46.5951    38.5645    42.3762
    46.8118    44.4298
    42.2302    47.4289    46.2229    41.8135    42.0401    44.5193    41.6703
    40.5628    47.1291
```

43.9246	48.8710	46.2336	44.8508	46.1935	39.7919	40.5256
48.2572	41.1951					

Links

MATLAB® Central's File Exchange:

<https://www.mathworks.com/matlabcentral/fileexchange/85423-random-number-generator-in-a-range-rand2>

GitHub®:

<https://github.com/tamaskis/rand2-MATLAB>