
Subject: Re: Randomize array order

Posted by [David Streutker](#) on Thu, 26 Jul 2007 21:27:33 GMT

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On Jul 26, 2:32 pm, hradilv <hrad...@yahoo.com> wrote:

> On Jul 26, 11:57 am, David Streutker <dstreut...@gmail.com> wrote:

>

>

>

>> How about a Knuth shuffle?

>

>> (Disclaimer: I'm not a statistician; I just found it on Wikipedia.)

>

>> function kunsort, array

>> na = n_elements(array)

>> random = randomu(seed,na) * (na - array - 1) + array

>> for i=0L,na-2 do array[i] = array[random[i]]

>> return, array

>> end

>

>> Added to Vince's code (last column):

>

>> 0 100000 0.0619998 0.0780001 0.0320001

>> 1 166810 0.125000 0.125000 0.0780001

>> 2 278256 0.282000 0.218000 0.141000

>> 3 464158 0.547000 0.406000 0.235000

>> 4 774263 1.07800 0.657000 0.390000

>> 5 1291549 1.93700 1.09400 0.703000

>> 6 2154435 3.51500 1.89100 1.20300

>> 7 3593812 6.34400 3.11000 1.98400

>> 8 5994841 11.5470 5.21800 3.36000

>> 9 10000000 20.3750 8.67200 5.60900

>

>> Windows XP, dual 2.66 GHz, 3 GB RAM, IDL 6.3

>

> I'm not sure, but I think that will give you "with replacement".

You're right, I wasn't swapping. Corrected, and in the form of Allan's method:

```
function kunsort, array
```

```
  na = n_elements(array)
```

```
  rarray = array
```

```
  b = randomu(seed,na-1) * (na - lindgen(na-1) - 1) + lindgen(na-1)
```

```
  for i=0L,na-2 do begin
```

```
    tmp = rarray[i]
```

```
    rarray[i] = rarray[b[i]]
```

```
    rarray[b[i]] = tmp  
endfor
```

```
    return, rarray  
end
```

With the change, it's slightly slower than Allan's. However, for what it's worth, there are claims this is a less biased method. (Again, I am no expert. But the recent poker craze seems to have revived interest in the probabilities of shuffling.)
