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Subject: Re: Fastest way to list combinations  
Posted by [antar3s86](#) on Fri, 13 Jul 2012 21:01:40 GMT  
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On Friday, July 13, 2012 10:51:41 PM UTC+2, (unknown) wrote:

> Hi  
>  
> I have to solve a problem which includes listing all possible combinations to form a triplet for a given number of objects.  
>  
> Say you have the objects:  
> a,b,c,d,e, so in total 5 which gives you  $5!/(2!*3!) = 10$  possibilities to list them without any doubles:  
>  
> abc  
> abd  
> abe  
> acd  
> ace  
> ade  
> bcd  
> bce  
> bde  
> cde  
>  
> I have solved this problem for any number (well up to some computer limit anyway) in three FOR loops but for large numbers this is rather small...  
>  
> can you think of a better way than using loops to list all these possibilities?  
>  
> thanks!!  
> :)

Sorry, instead of small it should say slow...stupid autocorrect... ;)

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Subject: Re: Fastest way to list combinations  
Posted by [Paul Van Delst\[1\]](#) on Fri, 13 Jul 2012 21:28:29 GMT  
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Hello,

On 07/13/12 16:51, antar3s86@gmail.com wrote:

> Hi  
>  
> I have to solve a problem which includes listing all possible combinations to form a triplet for a given number of objects.  
>

```

> Say you have the objects:
> a,b,c,d,e, so in total 5 which gives you  $5!/(2!*3!) = 10$  possibilities to list them without any
doubles:
>
> abc
> abd
> abe
> acd
> ace
> ade
> bcd
> bce
> bde
> cde
>
> I have solved this problem for any number (well up to some computer limit anyway) in three
FOR loops but for large numbers this is rather small...
>
> can you think of a better way than using loops to list all these possibilites?
>
> thanks!!
> :)

```

Dunno if it's the fastest and/or best way, but have a look at:

<http://ftp.emc.ncep.noaa.gov/jcsda/CRTM/idl/>

There should be three files.

If you look at the test\_combination.pro you will see how to use it.

For example, getting a list of all the combos of three letters from 26:

```
IDL> t=systime(1) & Test_Combination, 26, 3 & print, systime(1)-t
...lots and lots of output listing the combinations....
```

```

    22    23    25
    22    24    25
    23    24    25

```

```
Total combinations: 2600
```

```
0.032832861
```

```
IDL>
```

You could use this sort of output to generate index arrays to extract your combination of letters from string arrays.

Anyhoo, hope they're useful.

cheers,

paulv

p.s. There may be a native solution for this as well. I wrote those routines a while back... perhaps even as an exercise. Can't recall.

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Subject: Re: Fastest way to list combinations  
Posted by [Jeremy Bailin](#) on Sun, 15 Jul 2012 15:23:26 GMT  
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On 7/13/12 6:21 PM, antar3s86@gmail.com wrote:

> Hi  
>  
> I have to solve a problem which includes listing all possible combinations to form a triplet for a given number of objects.  
>  
> Say you have the objects:  
> a,b,c,d,e, so in total 5 which gives you  $5!/(2!*3!) = 10$  possibilities to list them without any doubles:  
>  
> abc  
> abd  
> abe  
> acd  
> ace  
> ade  
> bcd  
> bce  
> bde  
> cde  
>  
> I have solved this problem for any number (well up to some computer limit anyway) in three FOR loops but for large numbers this is rather small...  
>  
> can you think of a better way than using loops to list all these possibilities?  
>  
> thanks!!  
> :)

You could try COMBIGEN in JBIU.

<http://astroconst.org/jbiu/jbiu-doc/math/combigen.html>

-Jeremy.

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Subject: Re: Fastest way to list combinations

Posted by [antar3s86](#) on Mon, 16 Jul 2012 10:12:31 GMT

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> You could try COMBIGIN in JBIU.  
>  
> <http://astroconst.org/jbiu/jbiu-doc/math/combigen.html>  
>  
> -Jeremy.

That's the way to go I think! :)

Thanks

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