
Subject: Re: Sort a HASH

Posted by [Gray](#) on Wed, 22 Jun 2011 15:30:03 GMT

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On Jun 22, 8:06 am, JDS <jdtsmith.nos...@yahoo.com> wrote:

> How can you sort a HASH() in IDL?

>

> IDL> h=hash(['a','c','d','b'],[7,1,5,8])

> IDL> print,h

> c: 1

> a: 7

> b: 8

> d: 5

>

> OK, they are randomly sorted. That's cool, it's a hash. I'll just sort on the hash key...

>

> IDL> s=sort(h->keys())

> IDL> print,s

> 0

>

> Hmmmm, it seems this isn't sorting correctly...

>

> IDL> help, h->keys()

> <Expression> LIST <ID=3175 NELEMENTS=4>

>

> Ahah, the return of Keys() is a list! (Why does SORT pretend it can sort a LIST?). We need an array. Continuing onwards...

>

> IDL> s=sort((h->keys())->toarray())

> IDL> print,(h.keys())[s]

> a

> b

> c

> d

>

> Now we're getting there. Let's just index...

>

> IDL> print,h[(h.keys())[s]]

> c: 1

> a: 7

> b: 8

> d: 5

>

> Uhhh... what? Maybe it has something to do with indexing via a LIST. Let's make it an array first:

>

> IDL> print,((h.keys()).toArray())[s]

> a b c d

>
> Should be perfect...
>
> IDL> print,h[[(h.keys()).toArray()][s]]
> c: 1
> a: 7
> b: 8
> d: 5
>
> But it's not!
>
> Is there any way to index a hash and have the order of the keys be maintained, for example for this sorting problem? Loss of order is a well known feature of hash storage, but when you explicitly specify the order, it should be respected. Am I missing something?

http://groups.google.com/group/comp.lang.idl-pvwave/browse_thread/thread/fa55eae4c4be5880/012750823bc9dce2

Subject: Re: Sort a HASH

Posted by [Gray](#) on Wed, 22 Jun 2011 15:33:13 GMT

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On Jun 22, 8:06 am, JDS <jdtsmith.nos...@yahoo.com> wrote:

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>
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```
> IDL> print,(h.keys())[s]
> a
> b
> c
> d
>
> Now we're getting there. Let's just index...
>
> IDL> print,h[(h.keys())[s]]
> c:    1
> a:    7
> b:    8
> d:    5
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>
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>
> IDL> print,h[((h.keys()).toArray())[s]]
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this sorting problem? Loss of order is a well known feature of hash storage, but when you
explicitly specify the order, it should be respected. Am I missing something?
```

I don't see my first post of this... so apologies if it appears twice. I had the same question a little while ago:

http://groups.google.com/group/comp.lang.idl-pvwave/browse_thread/thread/fa55eae4c4be5880/012750823bc9dce2

Subject: Aw: Re: Sort a HASH
Posted by [JDS](#) on Fri, 24 Jun 2011 08:37:04 GMT
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You appear to be asking why a HASH is not ordered. Having been familiar with HASH's from other languages, I did not expect them to be ordered. What is peculiar here, is that, without

converting hashes into a more primitive data type, there is no way to order them yourselves (or rearrange them in any way, other than a loop)! That is in stark contrast to other languages. For example, a common idiom in Perl is:

```
foreach key (sort keys %hash) {  
  % do something  
}
```

Is there really no equivalent in IDL?

Subject: Re: Sort a HASH

Posted by [Gray](#) on Fri, 24 Jun 2011 10:52:25 GMT

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On Jun 24, 4:37 am, JDS <jdtsmith.nos...@yahoo.com> wrote:

> You appear to be asking why a HASH is not ordered. Having been familiar with HASH's from other languages, I did not expect them to be ordered. What is peculiar here, is that, without converting hashes into a more primitive data type, there is no way to order them yourselves (or rearrange them in any way, other than a loop)! That is in stark contrast to other languages. For example, a common idiom in Perl is:

```
>  
> foreach key (sort keys %hash) {  
>   % do something  
>  
> }  
>  
> Is there really no equivalent in IDL?
```

Well, I was asking why when I indexed a hash were the elements not returned in the order I indexed them.

Subject: Re: Sort a HASH

Posted by [chris_torrence@NOSPAM](#) on Fri, 24 Jun 2011 22:28:04 GMT

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Hi all,

The reason this isn't working is because when you index a hash, you get back another hash. It doesn't matter the order of the keys when you do the indexing, IDL will create a new hash with the desired key/value pairs, and they will be in whatever order the hash determines.

A way around this is to just get both the keys & values out, then sort on those:

```
h=hash(['a','c','d','b'],[7,1,5,8])
keys = (h.KEYS()).toArray()
val = (h.VALUES()).toArray()
s = SORT(keys)
print, keys[s], val[s]
```

```
a b c d
   7   8   1   5
```

If you were worried about making an extra copy of the values, you could use a foreach loop instead:

```
foreach key, (h.KEYS())[s] do print, key, h[key]
a      7
b      8
c      1
d      5
```

This will work in IDL 8.1.

Perhaps a better approach would be for us to add a SORT keyword to the KEYS() method. So you could do something like:

```
foreach key, h.KEYS(/SORT) do print, key, h[key]
```

What do you all think about that?

-Chris
ITTVIS
