

Ruby trunk - Feature #14105

Introduce xor as alias for Set#^

11/14/2017 12:39 PM - ana06 (Ana Maria Martinez Gomez)

Status:	Feedback	
Priority:	Normal	
Assignee:	knu (Akinori MUSHA)	
Target version:		
Description		
Not sure if I should also add features for the Set class here or if I should do it somewhere else.		
I would like to add a more readable method for the exclusive or, currently as ^ in set. It is in both mathematics, hardware and many other programming languages known as xor, so I think this will help to use it.		
Related issues:		
Related to Ruby trunk - Feature #14097: Add union and difference to Array		Closed

History

#1 - 11/14/2017 12:40 PM - ana06 (Ana Maria Martinez Gomez)

- Backport deleted (2.3: UNKNOWN, 2.4: UNKNOWN)

- Tracker changed from Bug to Feature

#2 - 11/14/2017 04:08 PM - jeremyevans0 (Jeremy Evans)

^ is used as the exclusive-or operator in many other programming languages including C, C++, C#, D, Java, Perl, PHP and Python.

If a user wants to use xor instead of ^, they can always alias it manually:

```
class Set
  alias xor ^
end
```

In general I prefer that users add their own aliases. I don't think Ruby should add aliases unless the current method names are so bad as to be misleading, and I don't believe that to be the case here.

Note that the following core classes also use ^ for exclusive-or:

- Integer
- FalseClass
- TrueClass
- NilClass

One counterpoint is that Set already aliases & to intersection and | to union, so adding xor would be consistent in that sense.

#3 - 11/14/2017 09:49 PM - shevegen (Robert A. Heiler)

I am neutral on this so either way is fine by me. I very rarely use Set so I suppose I would not even notice any change in the first place. :)

I may be wrong but the amount of approved feature additions appears to have slowed down in the last 2-3 weeks or so. There could be many reasons for this but I assume that one is the upcoming x-mas release in about a month (which, I assume, means that bug fixes probably have a higher priority at the moment; at the least I see nobu being busy doing lots of changes primarily related to bug fixes).

Ultimately you only have to convince matz. :)

It may help to showcase specific examples, e. g. the exact different for Set#xor rather than Set#^ (I assume that one practical advantage for the ^ is because it may be shorter to type, but again, I really have no particular pro or con opinion here, just pointing out a few not so relevant things. :P)

#4 - 12/27/2017 01:28 PM - ana06 (Ana Maria Martinez Gomez)

[jeremyevans0 \(Jeremy Evans\)](#)

Note that the following core classes also use ^ for exclusive-or:

Integer
FalseClass
TrueClass
NilClass

That's a good point. Maybe we should consider adding the alias to the 4 classes. My idea with this was trying to make it more readable and easy to use, which Ruby does for many other things.

#5 - 05/17/2018 08:13 AM - matz (Yukihiko Matsumoto)

- Related to Feature #14097: Add union and difference to Array added

#6 - 05/17/2018 08:30 AM - naruse (Yui NARUSE)

- Assignee set to knu (Akinori MUSHIA)

- Status changed from Open to Assigned

#7 - 05/17/2018 08:52 AM - knu (Akinori MUSHIA)

I'm afraid aliasing ^ to xor is not like aliasing & to intersection and | to union, because the latter two are the terms defined in the set theory whereas xor is (apparently) not.

#8 - 05/17/2018 09:45 AM - gotoken (Kentaro Goto)

knu (Akinori MUSHIA) wrote:

I'm afraid aliasing ^ to xor is not like aliasing & to intersection and | to union, because the latter two are the terms defined in the set theory whereas xor is (apparently) not.

Yep, that is usually called the symmetric difference in elementary set theory. Even so, some text books introduce the relation between them as

$$a\Delta b = \{x \mid x \in a \oplus x \in b\}$$

where Δ and \oplus stand for symmetric difference and XOR respectively.

By the way I recently wrote this set theoretical operation to find all uncommon files in two file collections then I reminded this feature request :)

#9 - 05/17/2018 10:50 AM - knu (Akinori MUSHIA)

gotoken (Kentaro Goto) wrote:

By the way I recently wrote this set theoretical operation to find all uncommon files in two file collections then I reminded this feature request :)

That sounds interesting. I don't think I actually had a use case for Set#^ in mind when I implemented it, so I'd appreciate if you could share some real use cases for it. ☐☐

#10 - 06/27/2018 10:56 AM - knu (Akinori MUSHIA)

- Status changed from Assigned to Feedback

Files

firefox.desktop	528 Bytes	11/14/2017	ana06 (Ana Maria Martinez Gomez)
-----------------	-----------	------------	----------------------------------