

Ruby - Feature #8842

Integer#[] with range

08/31/2013 10:48 AM - mame (Yusuke Endoh)

Status:Closed Priority:Normal Assignee:mame (Yusuke Endoh) Target version:	
Description =begin I propose to extend Integer#[] accepting a range. 0b01001101[2, 4] == 0b0011 0bHGFEDCBA[2, 4] == 0bFEDC = Use case I believe that everyone has written a code like this: if (n >> 2) & 0xf == 0x3 ... end because this is a very common idiom in C. But it is less readable, writable, extendable and optimizable. if n[2, 4] == 0x3 ... end is much better in the all aspects. = Corner cases The current Integer#[] (and shift operators) handle an integer as "a bit array with infinity length"; it returns 0 for any negative index and an (extended) sign bit for any index greater than MSB. We also can use this standard to define the spec for a range argument. For example: 15[-1, 42] #=> 30 (equivalent to (15 << 1) && (2 ** 42 - 1)) 15[3, 42] #=> 1 (equivalent to (15 >> 3) && (2 ** 42 - 1)) 15[3..Float::INFINITY] #=> 1 (equivalent to 15 >> 3) 15[-3..Float::INFINITY] #=> 2 (equivalent to 1 << 3) -1[0..Float::INFINITY] #=> -1 -1[1..Float::INFINITY] #=> -1 -1[-1..Float::INFINITY] #=> -2 1[-Float::INFINITY..0] #=> failed to allocate memory 2[-Float::INFINITY..0] #=> 0 Only tricky case that I thought of is a range (beg..end) whose "end" is smaller than "beg". I think it should be handled as (beg..Float::INFINITY). 15[-3..-4] #=> 2 (equivalent to 1 << 3) -1[0..-1] #=> -1 -1[0..-2] #=> -1 What do you think? =end	

Associated revisions

Revision 6bedbf462544a7917fdc8d8c44276079a6e156cf - 04/28/2019 02:40 PM - mame (Yusuke Endoh)

numeric.c: Extend Integer#[] to support range arguments

```
0b01001101[2, 4]   #=> 0b0011
0b01001100[2..5]   #=> 0b0011
0b01001100[2...6]  #=> 0b0011
    ^^^^
```

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History

#1 - 08/31/2013 11:47 AM - mame (Yusuke Endoh)

- *File integer-with-range.pdf added*

#2 - 08/31/2013 11:48 AM - mame (Yusuke Endoh)

- *Tracker changed from Bug to Feature*

#3 - 08/31/2013 02:25 PM - matz (Yukihiro Matsumoto)

- *Assignee changed from matz (Yukihiro Matsumoto) to mame (Yusuke Endoh)*

Accepted.

Matz.

#4 - 08/31/2013 07:24 PM - Anonymous

I take it that the use of '&&' operator in the first 2 corner cases is a typo. But, pardon my ignorance, in the 4th corner case, why `15[-3..Float::INFINITY] #=> 2` (equivalent to `1 << 3`)? `1 << 3` is 8, and even if I assume a typo, `15 << 3` is 120. Is there something I misunderstood?

#5 - 08/31/2013 09:22 PM - mame (Yusuke Endoh)

- *Target version changed from 2.6 to 2.1.0*

I take it that the use of '&&' operator in the first 2 corner cases is a typo.

Yes, sorry.

in the 4th corner case, why `15[-3..Float::INFINITY] #=> 2` (equivalent to `1 << 3`)? `1 << 3` is 8, and even if I assume a typo, `15 << 3` is 120. Is there something I misunderstood?

No, you are right.

`15[-3..Float::INFINITY] #=> 120` (equivalent to `15 << 3`)

is correct.

Also, the attached slide has a bug: n[2..6] should be n[2..5] or n[2...6].

I'm sorry. Haste is from the devil. I'll make a patch more carefully.

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Yusuke Endoh mame@tsg.ne.jp

#6 - 01/30/2014 06:17 AM - hsb (Hiroshi SHIBATA)
- Target version changed from 2.1.0 to 2.2.0

#7 - 01/05/2018 09:00 PM - naruse (Yui NARUSE)
- Target version deleted (2.2.0)

#8 - 04/28/2019 02:42 PM - mame (Yusuke Endoh)
- Status changed from Assigned to Closed

Applied in changeset [git|6bedbf462544a7917fdc8d8c44276079a6e156cf](#).

numeric.c: Extend Integer#[] to support range arguments

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0b01001101[2, 4]  #=> 0b0011
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Files

integer-with-range.pdf	248 KB	08/31/2013	mame (Yusuke Endoh)
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