

## Ruby master - Feature #8850

### Convert Rational to decimal string

09/02/2013 10:02 AM - naruse (Yui NARUSE)

<b>Status:</b> Assigned	
<b>Priority:</b> Normal	
<b>Assignee:</b> matz (Yukihiro Matsumoto)	
<b>Target version:</b>	
<b>Description</b>	
<p>On Ruby 2.1.0, decimal literal is introduced. It generates Rational but it cannot easily convert to decimal string. You know, Rational#to_f is related to this but</p>	
<ul style="list-style-type: none"><li>• Float is not exact number <code>** 0.123456789123456789r.to_f.to_s #=&gt; "0.12345678912345678"</code></li><li>• it can't handle recursive decimal <code>** (151/13r).to_f.to_s #=&gt; "11.615384615384615"</code></li><li>• the method name <code>** to_decimal</code> <code>** to_decimal_string</code> <code>** to_s(format: :decimal)</code> <code>** extend sprintf</code></li><li>• how does it express recursive decimal <code>** (151/13r).to_decimal_string #=&gt; "11.615384..."</code> <code>** (151/13r).to_decimal_string #=&gt; "11.(615384)"</code></li></ul>	
<p>Example implementation is following. Its result is</p>	
<pre>** 0.123456789123456789r.to_f.to_s #=&gt; "0.123456789123456789" ** (151/13r).to_f.to_s #=&gt; "11.(615384)"</pre>	
<pre>class Rational   def to_decimal_string(base=10)     n = numerator     d = denominator     r, n = n.divmod d     str = r.to_s(base)     return str if n == 0     h = {}     str &lt;&lt; '.'     n *= base     str.size.upto(Float::INFINITY) do  i        r, n = n.divmod d       if n == 0         str &lt;&lt; r.to_s(base)         break       elsif h.key? n         str[h[n], 0] = '('         str &lt;&lt; ')'          break       else         str &lt;&lt; r.to_s(base)         h[n] = i         n *= base       end     end     str   end end</pre>	

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## History

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### #1 - 09/03/2013 11:12 AM - Anonymous

How about to\_s( :decimal ) ?

### #2 - 02/14/2014 08:53 AM - nobu (Nobuyoshi Nakada)

- Description updated

### #3 - 02/14/2014 08:54 AM - shyouhei (Shyouhei Urabe)

- Status changed from Assigned to Feedback

Can anyone propose a patch please?

### #4 - 02/15/2014 03:20 PM - mrkn (Kenta Murata)

I made a simple implementation: <https://github.com/mrkn/ruby/commit/408d4a05c40a70a7d49e40d6edc33af98e6816a3>

### #5 - 02/16/2014 05:20 AM - mrkn (Kenta Murata)

- Status changed from Feedback to Assigned

### #6 - 02/16/2014 02:14 PM - mrkn (Kenta Murata)

I updated the patch to use rb\_check\_arity: <https://github.com/mrkn/ruby/commit/a6837fab190fed2707ec7e13c494cd4b642ff630>

### #7 - 02/17/2014 10:46 PM - mrkn (Kenta Murata)

I've updated the patch by rebasing and fixing syntax.

<https://github.com/mrkn/ruby/compare/64634f92f3474babab93264b3c7557043f6753e7...71e463b80d17959f3a4cfd49d7773818fa671037.diff>

### #8 - 12/25/2017 06:15 PM - naruse (Yui NARUSE)

- Target version deleted (2.6)