

Ruby - Feature #8850

Convert Rational to decimal string

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

Status: Assigned

Priority: Normal

Assignee: matz (Yukihiro Matsumoto)

Target version:

Description

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

- Float is not exact number
`** 0.123456789123456789r.to_f.to_s #=> "0.12345678912345678"`
- it can't handle recursive decimal
`** (151/13r).to_f.to_s #=> "11.615384615384615"`
- the method name
`** to_decimal`
`** to_decimal_string`
`** to_s(format: :decimal)`
`** extend sprintf`
- how does it express recursive decimal
`** (151/13r).to_decimal_string #=> "11.615384..."`
`** (151/13r).to_decimal_string #=> "11.(615384)"`

Example implementation is following.

Its result is

```
** 0.123456789123456789r.to_f.to_s #=> "0.123456789123456789"
```

```
** (151/13r).to_f.to_s #=> "11.(615384)"
```

```
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 << '.'
    n *= base
    str.size.upto(Float::INFINITY) do |i|
      r, n = n.divmod d
      if n == 0
        str << r.to_s(base)
        break
      elsif h.key? n
        str[h[n], 0] = '('
        str << ')'
        break
      else
        str << r.to_s(base)
        h[n] = i
        n *= base
      end
    end
    str
  end
end
```

History

#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)*