Ruby - Feature #6552

Enumerator::Generator:select should return another Enumerator::Generator

06/07/2012 06:47 AM - eike.rb (Eike Dierks)

Status:	Rejected
Priority:	Normal
Assignee:	
Target version:	1.9.3

Description

The current implementation of Enumerator:select fails when applied to an open ended Enumerator:Generator,
resulting in an endless loop.

In the current implementation, :select seems to collect all values from the enumerator before applying the selection.
If that Enumeration is not bound, this results in an endless loop.

Instead, applying :select to a Generator should be applied to each object in turn and should itself return a Enumerator::Generator.

For example to select the first 5 even numbers starting at 123 should work as:
(123..Float::INFINITY).select{|n|n.even?}.take(5)
but this currently results in an endless loop.

The same problem applies for :map and some other operators on Enumerations

However changing :select and :map to make them work with open ended Enumerations
might also change the api contract as they are currently defined to return an array.

We might want to have a look at the SICSP on streams,
http://mitpress.mit.edu/sicp/full-text/sicp/book/node69.html

I came up with this prototype:

class Enumerator
return a generator for all elements from enumeration where block returns true
def select &block
Enumerator.new do |y|
self.each do |obj|
if block.call(obj)
y<<obj
end
end
end
end
end

Let's wrap an open ended Range in a Generator:
e=Enumerator.new{|y| (123..Float::INFINITY).each{|n|y<<n}}
e.select{|n|n.even?}.take(5)
=> [124, 126, 128, 130, 132]

voilà!

History

#1 - 06/08/2012 02:27 PM - gregolsen (Innokenty Mikhailov)

You might be interested in Enumerator::Lazy that effectively solves you problem.
(123..Float::INFINITY).lazy.select{|n|n.even?}.take(5).force
It's in trunk already and will be available in ruby 2.0

#2 - 07/14/2012 06:44 PM - shyouhei (Shyouhei Urabe)

- Status changed from Open to Feedback

#3 - 11/24/2012 02:19 PM - mame (Yusuke Endoh)

- Status changed from Feedback to Rejected

I agree with gregolsen. No feedback. Closing.

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Yusuke Endoh mame@tsg.ne.jp

Files

Enumerator_Generator_select.rb	806 Bytes	06/07/2012	eike.rb (Eike Dierks)