Shoes Tutorial Note

- For the Shoes App Rookie Creators -

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1. Introduction

Shoes is a cross-platform tiny graphics and windowing toolkit for the Ruby programming language written by _why. (http://en.wikipedia.org/wiki/Why_the_lucky_stiff)

All sample programs and data files in this tutorial are able to download from here.
(http://github.com/ashbb/shoes_tutorial/tree/master)

Some sample programs are the same in the NKS (The first public manual of Shoes. See chapter 7.)

2. Download Shoes

Download Shoes from this web site and pick the installer.
(http://shoooes.net/downloads/)
(http://help.shoooes.net/Introducing.html)

We use the latest revision, Shoes-0.r970, in this tutorial.

3. First step

There is a tutorial written by _why.
(http://shoooes.net/tutorial/)

Now, copy and paste the whole 16 sample programs and run one by one. No need to understand the code meaning. Just run and look at the app window. This tutorial has screenshots, but be sure to run all 16 samples. Not later. Do it now, before going to the next, please. This is the most important step, I believe.

4. Birds-eye view (Survey basic features)

4.1 Concept

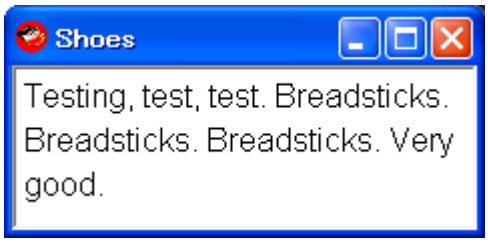
Shoes is a tiny graphics toolkit. It's simple and was born to be easy! So, Shoes doesn't have many elements (like tabbed controls, toolbars, horizontal scrollbars.) But can be simulated with images.
There are ten essential methods to get going with Shoes.

4.2 No.1 para

banner : Charactor size 48 pixels
title : 34
subtitle : 26
tagline : 18
caption : 14
para (paragraph) : 12
inscription : 10

```
# sample1.rb
Shoes.app :width => 230, :height => 80 do
  para 'Testing, test, test. ',
    'Breadsticks. ',
    'Breadsticks. ',
    'Breadsticks. ',
    'Very good.'
end
```

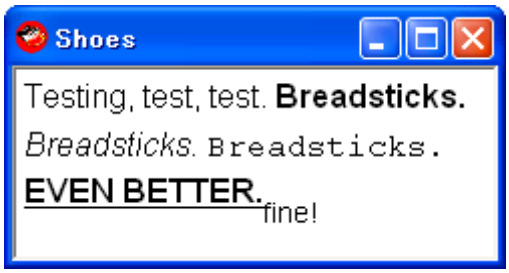
 # sample1.png



strong : bold
em (emphasized) : italics
code : monospeced font
ins (inserted) : single underline
sub (subscript) : lowering the text by 10 pixels, x-small font

```
# sample2.rb
Shoes.app :width => 240, :height => 95 do
  para 'Testing, test, test. ',
    strong('Breadsticks. '),
    em('Breadsticks. '),
    code('Breadsticks. '),
    strong(ins('EVEN BETTER.')),
    sub('fine!')
end
```

 # sample2.png



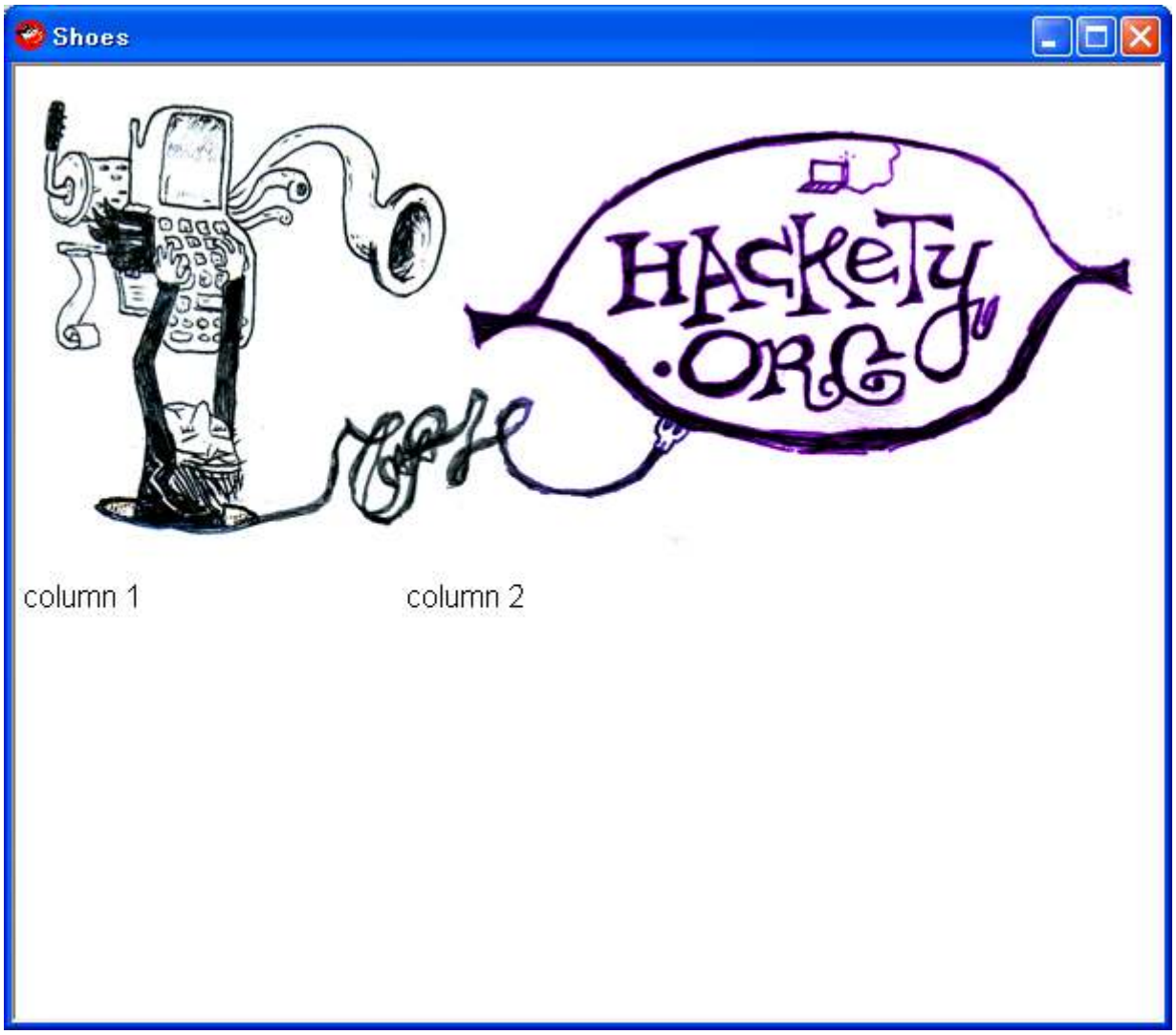
4.3 No.2&3 stack and flow

At first, read the following web page:
http://github.com/why/shoes/wikis/stacksandflows

But use (run) the following sample code instead of the one on the above web page.
Because the method Shoes#text is obsolete and need to correct the path of image file.

```
# sample3.rb
Shoes.app do
  stack do
    image "http://hackety.org/images/hackety-org-header.png"
  end
  stack :width => 200 do
    para "column 1"
  end
  stack :width => -200 do
    para "column 2"
  end
end
```

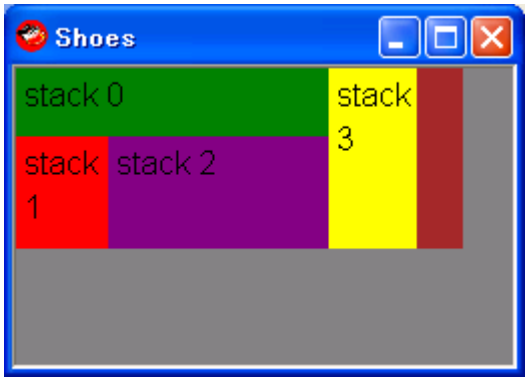
 # sample3.png



More complex sample code is:

```
# sample4.rb
Shoes.app :width => 250, :height => 150 do
  background gray
  flow :width => "90%" do
    background brown

    flow :width => "70%" do
      background purple
      stack do
        background green
        para "stack 0"
      end
      stack :width => "30%" do
        background red
        para "stack 1"
      end
      stack :width => "-30%" do
        background blue
        para "stack 2"
      end
    end

    stack :width => "20%" do
      background yellow
      para "stack 3"
    end
  end
end
```

 # sample4.png



4.4 No.4 button

`button("Press Me")`
which creates a new button and
`button("Press Me"){ alert("clicked")}`
how the block fires when clicked and
`button("Press Me", :left => 50, :top => 20)`
will place the button at coordinates (50, 20).
That's it.

```
# sample5.rb
Shoes.app :width => 200, :height => 50 do
  button("Press Me", :left => 50, :top => 20) do
    alert("clicked")
  end
end
```

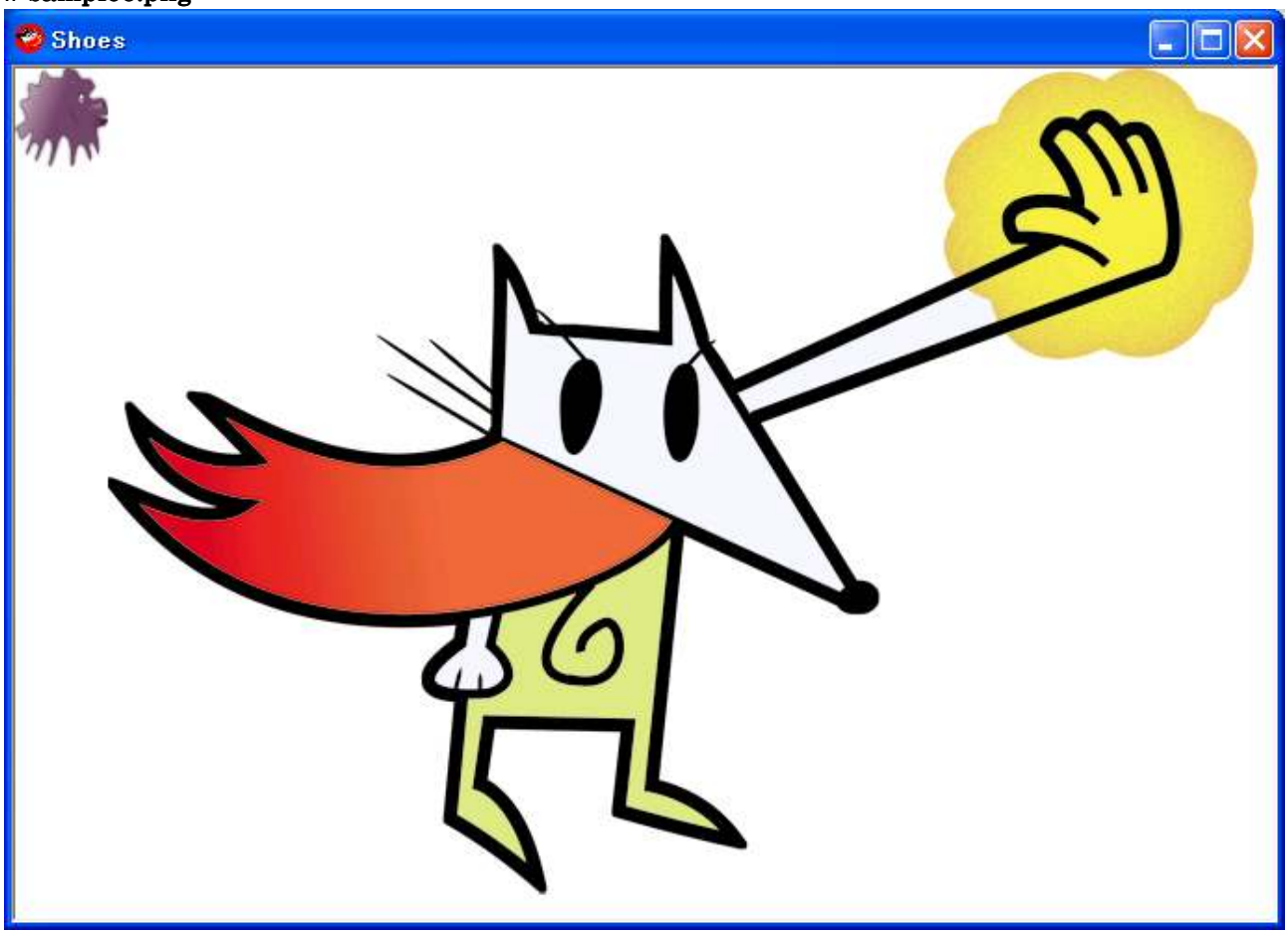
 # sample5.png

4.5 No.5 image

An image is a picture in PNG, JPEG or GIF format.
We can use the directory path and URL.

```
# sample6.rb
Shoes.app :width => 680, :height => 460 do
  image Dir.pwd + '/loogink.png'
  image "http://hacketyhack.net/images/design/Hacky-Mouse-Hand.png"
end
```

 # sample6.png



4.6 No.6 edit_line

Edit boxes are wide, rectangular boxes for entering text.
Edit lines are a slender, little box for entering text.

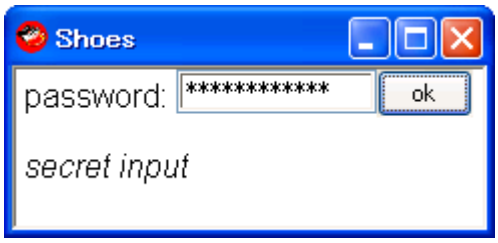
```
# sample7.rb
Shoes.app :width => 250, :height => 300 do
  stack do
    @msg = para 'Hello'
    @el = edit_line "We love Ruby."
    button('ok'){ @msg.text = @el.text}
    @eb = edit_box "We love Shoes."
    button('ok'){ @msg.text = @eb.text}
  end
end
```

 # sample7.png

We can use `:secret` in the edit_line area.

```
# sample7-1.rb
Shoes.app :width => 235, :height => 80 do
  para 'password: '
  @el = edit_line :width => 100, :secret => true
  button('ok'){@input.replace em(@el.text)}
  @input = para ''
end
```

 # sample7-1.png



4.7 No.7 link

Hyperlinks. We have three way to write the links.

```
# sample8.rb
Shoes.app :width => 250, :height => 60 do
  para link('RubyLearning.org'){visit "http://www.rubylearning.org/"}
  para link('Google', :click => "http://google.com")
  image (Dir.pwd + '/loogink.png'), :click => "http://shoooes.net/"
end
```

 # sample8.png

4.8 No.8 background

Backgrounds and borders are both just patterns.
They are actual elements, not styles.
A pattern is made with a color, a gradient or an image.

```
# sample9.rb
Shoes.app :width => 200, :height => 140 do
  background '#FF9900'
  background rgb(192, 128, 0), :left => 40
  background gray(0.6), :left => 80
  background red, :left => 120
  background '#FAD'..'#ADD', :left => 160
  border Dir.pwd + '/loogink.png', :strokewidth => 15
end
```

 # sample9.png

In NKS(Nobody Knows Shoes), just give the background a radius.

```
Background blue, :radius => 12
```

But it is obsolete. Now we can use :curve instead of :radius. And can also use :angle for gradient.

```
# sample10.rb
Shoes.app :width => 200, :height => 70 do
  background "#D0A"..darkorange.to_s, :angle => 45, :curve => 30
end
```

 # sample10.png

4.9 No.9 Shoes.url

A Shoes App object is a single window running code at a Shoes URL.
When you switch Shoes URLs, a new App object is created.
From the user view point, just seems like a page of the web.

```
# sample11.rb
class PhotoFrame < Shoes
  url '/', :index
  url '/loogink', :loogink
  url '/cy', :cy

  def index
    eval(['loogink', 'cy'][rand 2])
  end

  def loogink
    background tomato
    image Dir.pwd + '/loogink.png', :left => 70, :top => 10
    para "¥n" * 3
    para strong 'She is Loogink. :)', :stroke => white
    para '->', link(strong('Cy'), :click => '/cy')
  end

  def cy
    background paleturquoise
    image Dir.pwd + '/cy.png', :left => 70, :top => 10
    para "¥n" * 3
    para strong 'He is Cy. :)', :stroke => white
    para '  ->', link(strong('loogink'), :click => '/loogink')
  end
end

Shoes.app :width => 200, :height => 120, :title => 'Photo Frame'
```

 # sample11.png

4.10 No.10 clear

The clear method wipes the slot.
It also takes an optional block that will be used to replace the contents of the slot.

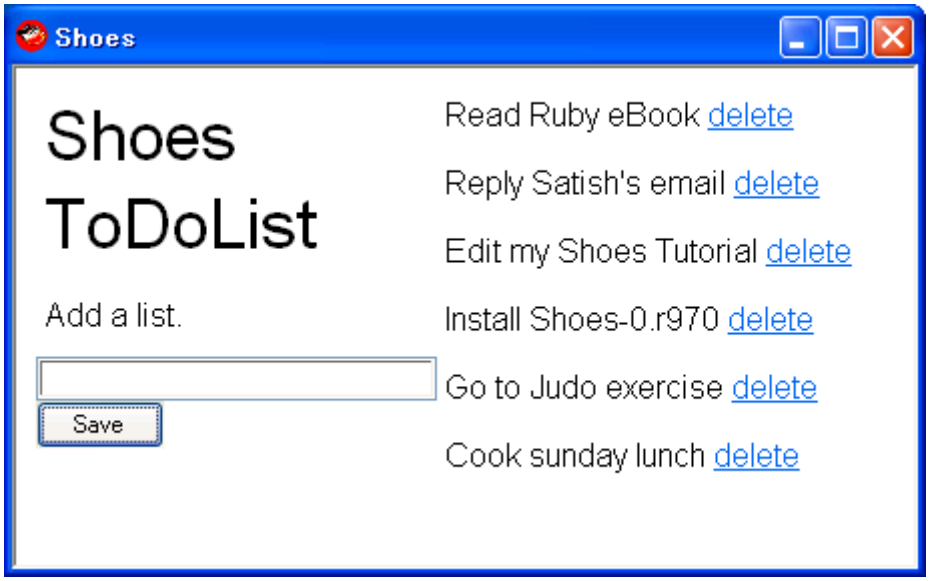
```
# sample12.rb
Shoes.app :title => 'RC', :width => 100, :height => 80 do
  def random_creatures
    background rgb rand(256), rand(256), rand(256)
    name = %w[loogink cy yar kamome shaha][rand 5]
    image Dir.pwd + '/' + name + '.png', :left => 30, :top => 10
  end

  random_creatures

  every(5){clear{random_creatures}}
end
```

 # sample12.png

The append and remove methods are also useful.

```
# sample13.rb
Shoes.app :width => 450, :height => 250 do
  stack :margin => 10, :width => 200 do
    subtitle 'Shoes ToDoList'
    para 'Add a list.'
    @add = edit_line
    button 'Save' do
      @notes.append do
        para @add.text, ' ', link('delete'){|e| e.parent.remove}
      end
      @add.text = ''
    end
  end
  @notes = stack :margin => 10, :width => -200
end
```

 # samples13.png



5. Tips for creating our original Shoes apps

5.1 Open Shoes built-in manual and Shoes console window

To open the Shoes built-in manual,
Type the following on your pc console (terminal window).

```
shoes -m
```

or

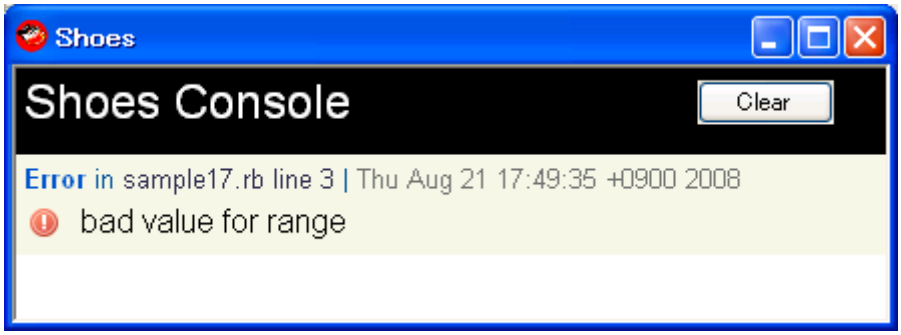
```
shoes --manual
```

Or type Alt + ? on any Shoes app window.
Or select from the menu. See here.
(http://shoooes.net/manuals/)

To open the Shoes console window,
type Alt + / on any Shoes app window.

```
# sample14.rb
Shoes.app do
  background blue..red
end
```

shoes_console.png

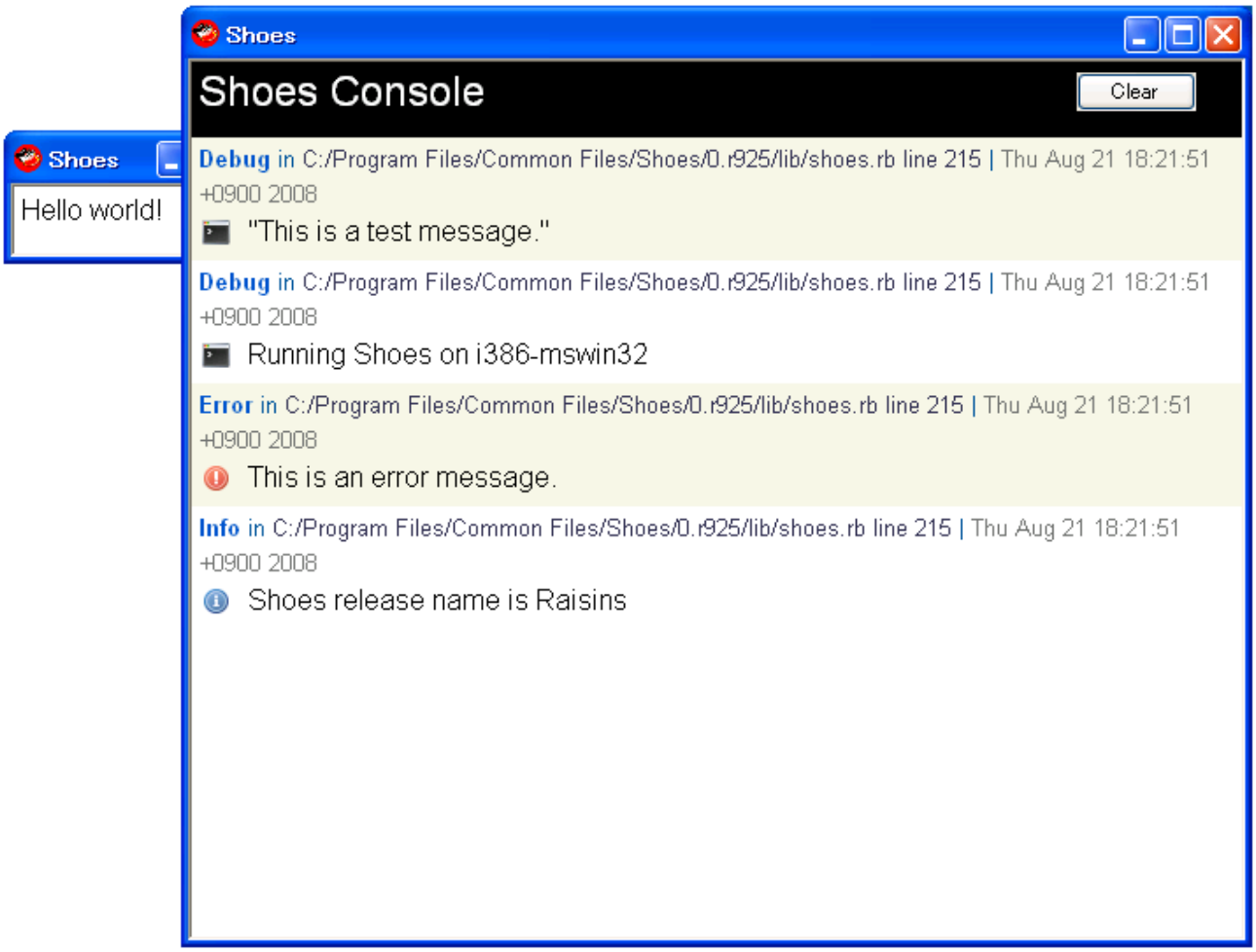


5.2 Output messages on the Shoes console window

We can put the message on the Shoes console window.

```
# sample15.rb
Shoes.app :width => 150, :height => 40 do
  para 'Hello world!'
  Shoes.p 'This is a test message.'
  debug 'Running Shoes on ' + RUBY_PLATFORM
  error 'This is an error message.'
  info 'Shoes release name is ' + Shoes::RELEASE_NAME
end
```

 # sample15.png

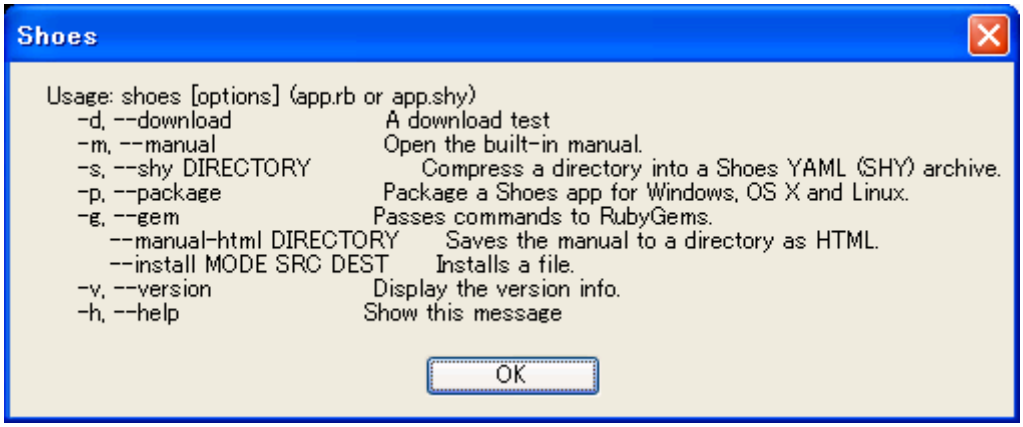


5.3 shoes --help

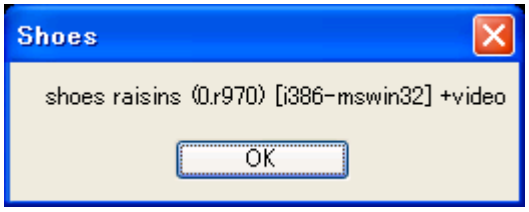
Type the following on your pc console (terminal window).

```
shoes -h
```
or
```
shoes --help
```

 # shoes_help.png



 # shoes_version.png

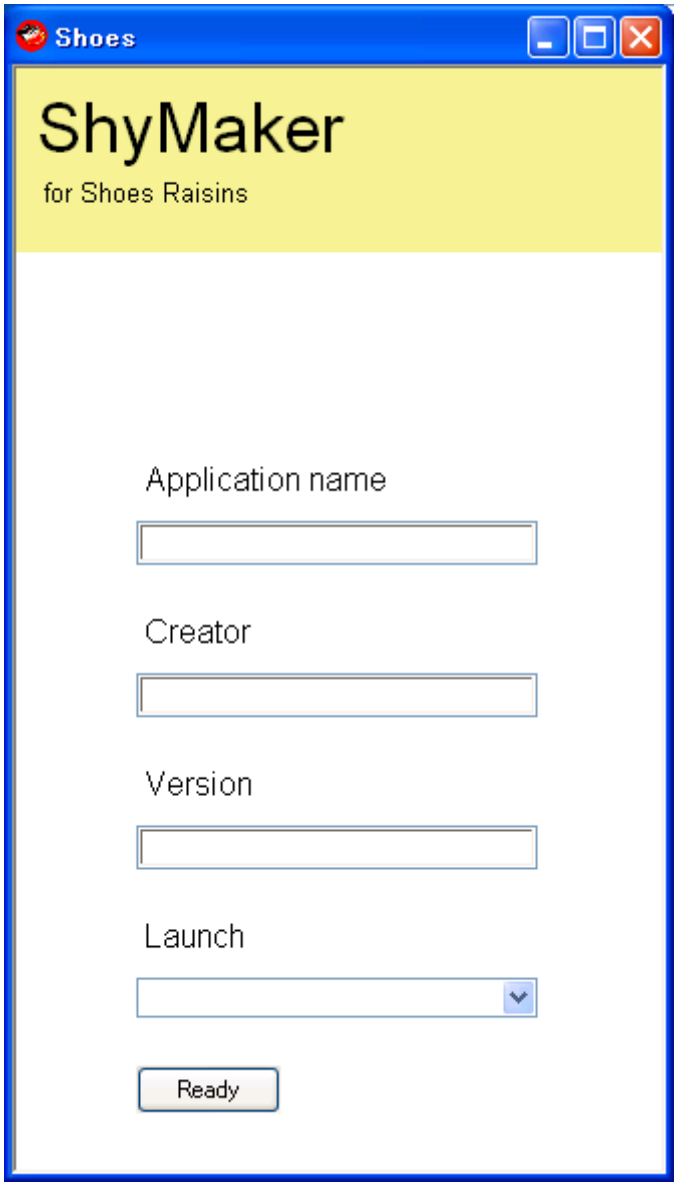


 # shoes_download_test.png

 # shoes_gem.png

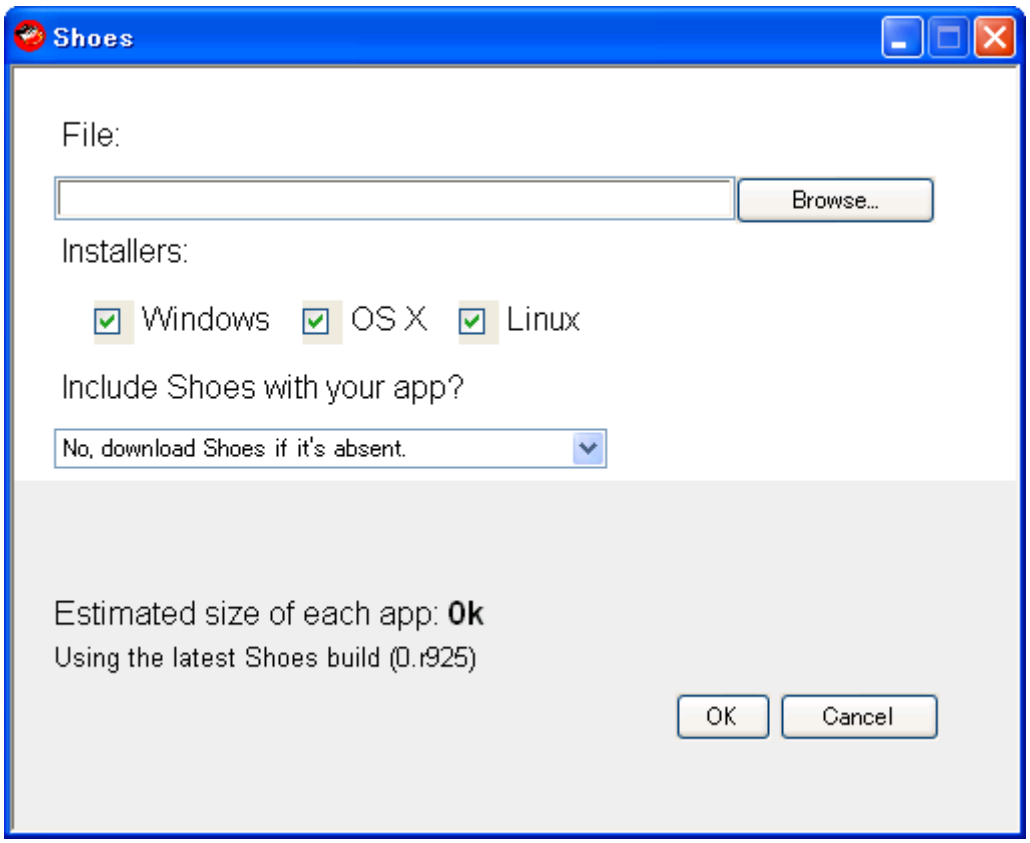

```
shoes -g install hpricot
```
Oops, an error will be happen. Perhaps now under construction...

 # shoes_shy.png



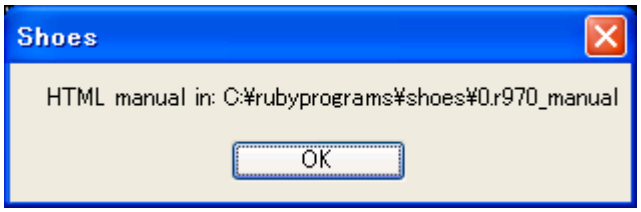
Open the app window, but it doesn't work well. Now under construction...

 # shoes_package.png



Open the app window, but it doesn't work well. Now under construction...

 # shoes_manual-html.png




```
C:¥>cd C:¥Program Files¥Common Files¥Shoes¥0.r970
C:¥Program Files¥Common Files¥Shoes¥0.r970>shoes --manual-html C:¥rubyprograms¥shoes¥0.r970_manual
```

It works well! Html files were created in my pc. Cool!

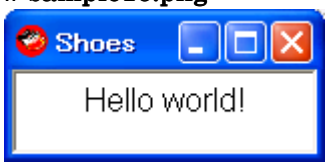
 # shoes_manual-html2.png

5.4 App object and coding style

A Shoes App object is a single window running code at a Shoes URL. When you switch Shoes URLs, a new App object is created. The App itself is a flow. The Shoes program has three coding style:

```
# sample16.rb
Shoes.app :width => 150, :height => 40 do
  para 'Hello world!', :align => 'center'
end
```

 # sample16.png




```
# sample17.rb
class Hello < Shoes
  url '/', :index

  def index
    para 'Hello world!', :align => 'center'
  end
end

Shoes.app :width => 150, :height => 40
```

 # sample17.png
is the same as the above sample16.png.

```
# sample18.rb
class Hello < Widget
  def initialize
    para 'Hello World!', :align => 'center'
  end
end

Shoes.app :width => 150, :height => 40 do
  hello
end
```

 # sample18.png
is the same as the above sample16.png.

5.5 Built-in Constants and methods

Built-in Constants:
Shoes::RELEASE_NAME
Shoes::RELEASE_ID
Shoes::REVISION

Built-in methods:
These methods can be used anywhere throughout Shoes programs:
alert, ask, ask_color, ask_open_file, ask_save_file, confirm, debug, error, exit, gradient, gray, info, rgb, warn

Read the Built-in manual -> Hello! -> Built-in section.

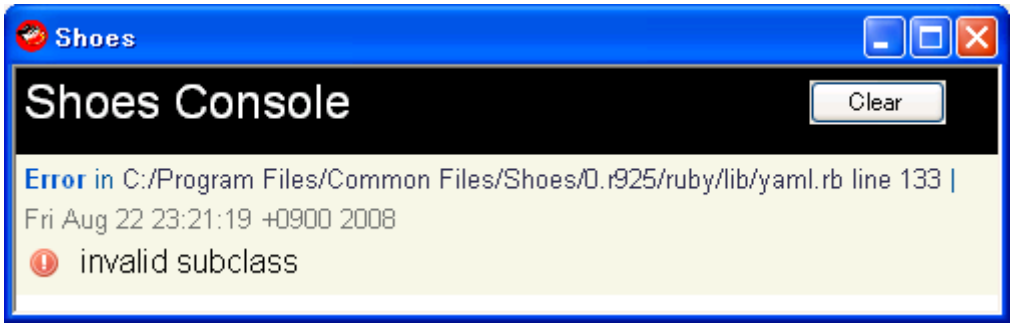
5.6 Scope: A tip of using the YAML file

```
# make_sample19_yaml.rb
require 'yaml'

data =<<-EOS
Satoshi Asakawa, Japan
Tom Jonson, Italy
EOS

Gang = Struct.new :name, :country

gangs = []
data.each{|d| gangs << Gang.new( *(d.chomp.split(',')) )}

open('gangs.yml', 'w'){|f| f.puts YAML.dump(gangs)}
```

```
# gangs.yml
---
- !ruby/struct:Gang
  name: Satoshi Asakawa
  country: " Japan"
- !ruby/struct:Gang
  name: Tom Jonson
  country: " Italy"
```

```
# sample19.rb
require 'yaml'

Shoes.app do
  Gang = Struct.new :name, :country
  gangs = YAML.load_file(Dir.pwd + '/gangs.yml')
  gangs.each{|g| para g.name, g.country, "¥n"}
end
```

 # sample19.png



The top-level namespace in any Shoes app is Shoes.
So, in the sample19.rb

```
Gang = Struct.new :name, :country
```

It really make a Shoes::Gang struct, not a Gang struct. I
So, change that line to this and it (sample19-1.rb) works well.

```
::Gang = Struct.new :name, :country
```

```
# sample19-1.rb
require 'yaml'

Shoes.app :width => 200, :height => 100 do
  ::Gang = Struct.new :name, :country
  gangs = YAML.load_file(Dir.pwd + '/gangs.yml')
  gangs.each{|g| para g.name, g.country, "¥n"}
end
```

 # sample19-1.png

5.7 keypress, mouse and clipboard

We can get mouse events.
We can get a string from the system clipboard and also store a string into the clipboard.

```
# sample20.rb
Shoes.app :title => 'Sorter', :width => 180, :height => 80 do
  background gradient powderblue, royalblue
  msg = para '', :size => 8

  yar = image(Dir.pwd + '/yar.png', :left => 60, :top => 18).click do
    self.clipboard = self.clipboard.sort unless self.clipboard.nil?
    yar.transform :center
    a = animate(24) do |i|
      yar.rotate -15
      a.stop if i > 22
    end
  end
  yar.hover{msg.text = strong('Click Yar. She sorts clipboard text!')}
  yar.leave{msg.text = ''}
end
```

 # sample20.png

An example of the output.

before:

```
Creatures name list is:
looginkff
cy
kamome
yar
shaha
```

Copy the above list into the system clipboard.
Click Yar and she will rotate (*1).
Then paste the clipboard text into the place you want.

*1: With Shoes-0.r925, Yar rotates well expected. But with Shoes-0.r970, Yar rotates when mouse moves out of the Shoes window. This behavior is a bug. It will be fixed in the next Shoes release.

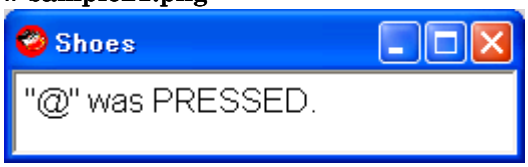
after:

```
Creatures name list is:
cy
kamome
loogink
shaha
yar
```

We can get keypress.

```
# sample21.rb
Shoes.app :width => 250, :height => 40 do
  @info = para 'NO KEY is PRESSED.'
  keypress{|key| @info.text = "#{key.inspect} was PRESSED."}
end
```

 # sample21.png



5.8 the Widget class

A custom Shoes widget is setup by inheriting from the Widget class.
And Shoes then creates a method using the lowercased name of the class which is used in your app.

```
# sample22.rb
class Answer < Widget
  attr_reader :mark
  def initialize word
    para word
    @mark = image(Dir.pwd + '/loogink.png', :width => 20, :height => 20).hide
  end
end

Shoes.app :width => 200, :height => 130 do
  stack :width => 0.5 do
    background palegreen
    para '1. apple'
    ans = answer '2. tomato'
    para '3. orange'
    button('Ans.'){ans.mark.toggle}
  end
  stack :width => 0.5 do
    background lightsteelblue
    para '1. cat'
    para '2. dog'
    ans = answer '3. bird'
    button('Ans.'){ans.mark.toggle}
  end
end
```

 # sample22.png

5.9 shape

We can make the arbitrary shape what ever we want.
Beginning at coordinates (left, top).

```
# sample23.rb
Shoes.app :width => 140, :height => 120 do
  fill yellow
  shape :left => 30, :top => 30 do
    line_to 50, 30
    curve_to 100, 100, 10, 20, 100, 50
    line_to 20, 100
    line_to 30, 30
  end
end
```

 # sample23.png

Oops, with Shoes-0.r925, it doesn't work well.
I'm not sure this behavior is the new spec or bug...
The above screenshot is with Shoes-0.r905.

 # sample23-1.png

With Shoes-0.r970, it works well. Although be a little bit different from the above pic…

5.10 mask

We can use a masking layer.
See the following information.
Cut Holes In Shoes And Get A Mask
(http://hackety.org/2007/08/28/cutHolesInShoesAndGetAMask.html)

```
# sample24.rb
Shoes.app :width => 160, :height => 80 do
  def mask_words
    strokewidth 4
    160.times do |i|
      stroke send COLORS.keys[rand COLORS.keys.length]
      line i * 4 - 50, 0, i * 4, 80
    end
    mask :margin => 4 do
      title strong 'Shoes'
    end
  end

  mask_words
  every 3 do
    clear{ mask_words }
  end
end
```

 # sample24.png

5.11 Drawing directly on to images

We can draw some elements on to the images.
In the below sample app, Cy (green creature) has a star!

```
# sample25.rb
Shoes.app :width => 250, :height => 76 do
  background lightsalmon
  icon = image :width => 74, :height => 74 do
    oval :width => 70, :height => 70, :fill => lightskyblue,
         :stroke => red, :left => 2, :top => 2
  end
  icon.image Dir.pwd + '/cy.png', :left => 10, :top => 8
  icon.star 35, 45, 5, 8, 3, :fill => hotpink, :stroke => nil
  msg = para '', :stroke => white

  icon.hover do
    @a = animate do
      button, left, top = self.mouse
      msg.replace strong icon[left, top]
    end
  end
  icon.leave do
    @a.stop
    msg.replace ''
  end
end
```

 # sample25.png

In the case of with Shoes-0.r970, you need doing the mouse leaving once. After that it works well.

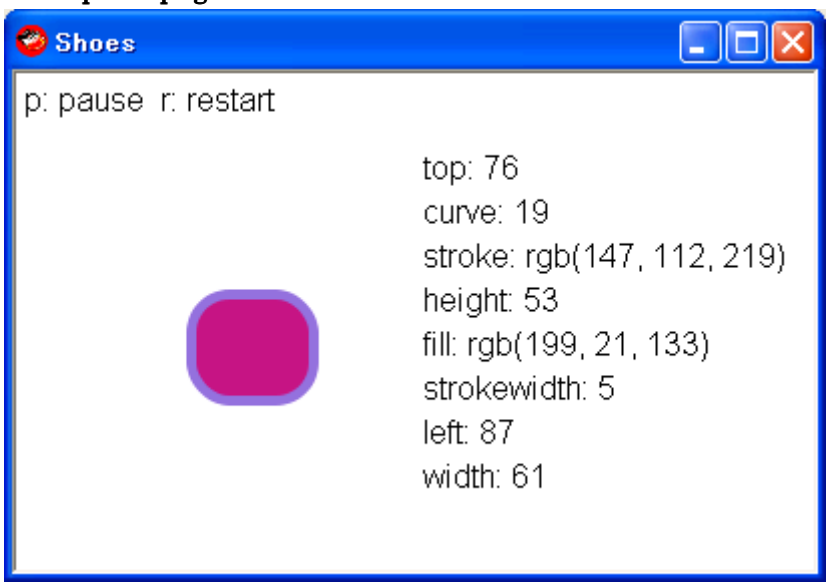
5.12 Style

We can change the style of the element with the style method. Calling the style method with no arguments returns a hash of the styles presently applied to the element.

More information is : 6.3 Styling Master List

```
# sample26.rb
Shoes.app :width => 400, :height => 250 do
  def sampling
    stack(:width => 1.0){para 'p: pause  r: restart'}
    #stack(:width => 0.5){@o = oval 0, 0, 50}
    stack(:width => 0.5){@r = rect 0, 0, 50, 50, 10}
    stack(:width => 0.5){@p = para ''}

    @a = every(1) do
      @r.style :width => 10 + rand(100), :height => 10 + rand(100),
               :curve => rand(20),
               :fill => send( COLORS.keys[rand COLORS.keys.length] ),
               :strokewidth => rand(10),
               :stroke => send( COLORS.keys[rand COLORS.keys.length])
      @r.move rand(100), rand(100)
      @p.replace @r.style.to_a.map{|e| e.join(': ')}.join("¥n")
    end
  end

  sampling
  keypress do |k|
    case k
      when 'p'
        @a.stop
      when 'r'
        @a.stop if @a
        clear{sampling}
      else
    end
  end
end
```

 # sample26.png



5.13 Shoes.setup

If your Shoes app requires some libraries, this might be useful.
See the following information.
[Clearing Up The Whole Shoes And RubyGems Deal](http://hackety.org/2008/05/08/clearingUpTheWholeShoesAndRubyGemsDeal.html)
(http://hackety.org/2008/05/08/clearingUpTheWholeShoesAndRubyGemsDeal.html)

```
# sample27.rb
Shoes.setup do
  gem 'something'
end

Shoes.app do
  para require 'something'
end
```

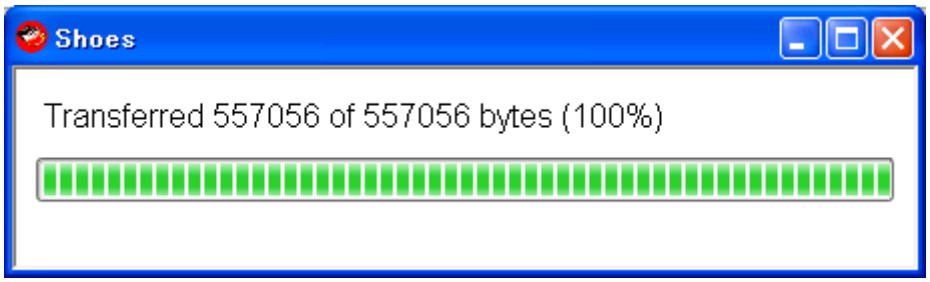
 # sample27.png

5.14 Downloader

The methods download and progress are so cool.
Although percent and length methods don't work well now, transferred and fraction work well.

```
# sample28.rb
Shoes.app :width => 450, :height => 100 do
  stack :margin => 10 do
    url = 'http://shoooes.net/dist/shoes-0.r970.exe'
    status = para "Downloading #{url}"
    p = progress :width => 1.0

    download url,
      :save => Dir.pwd + '/' + File.basename(url),
      :start => proc{|dl| status.text = 'Connecting...'},
      :progress => proc{|dl|
        status.text = "Transferred #{dl.transferred} of #{dl.length} bytes
(#{dl.percent}%)"
        p.fraction = dl.percent * 0.01},
      :finish => proc{|dl| status.text = 'Download finished'},
      :error => proc{|dl, err| status.text = "Error: #{err}" }
  end
end
```

 # sample28.png



More information about downloader. See the built-in manual.
Shoes includes the Hpricot library for parsing HTML.

5.15 Assign Shoes URL dynamically

We can use regular expressions to assign Shoes URL dynamically.
Shoes passes the match data to the method as the argument.
Show the following sample code revised the above sample11.rb.

```
# sample29.rb
class PhotoFrame < Shoes
  url '/', :index
  url '/(.+)', :index

  Creature = Struct.new :name, :sex, :wallpaper
  @@c = []
  @@c << Creature.new('loogink', 'She', 'tomato')
  @@c << Creature.new('cy', 'He', 'paleturquoise')

  def index n = rand(2)
    n = n.to_i
    background eval(@@c[n].wallpaper)
    image Dir.pwd + '/' + @@c[n].name + '.png', :left => 70, :top => 10
    para "¥n" * 3
    para strong "#{@@c[n].sex} is #{@@c[n].name.capitalize}. :)", :stroke => white
    n = n.zero? ? 1 : 0
    para '->', link(strong(@@c[n].name.capitalize), :click => "/#{n}")
  end
end

Shoes.app :width => 200, :height => 120, :title => 'Photo Frame'
```

 # sample29.png
is almost the same as the above sample11.png.

5.16 Classes List and Colors List

We can see the colors list in the built-in manual.
But we will also be able to see them by the following sample code.

```
# sample30.rb
Shoes.app :width => 642, :height => 700, :resizable => false do
  COLORS.keys.map{|sym|sym.to_s}.sort.each do |color|
    flow :width => 160, :height => 20 do
      c = send(color)
      fill c
      rect 0, 0, 160, 20
      inscription color, :stroke => c.dark? ? white : black
    end
  end
end
```

 # sample30.png

_why is thinking about some more method related colors.
e.g. invert, dark?, light?, black?, white?, opaque?, transparent?
We might be able to get them in the near future.

5.17 start, stop and restart

We can start something with initial condition, then stop and restart the same thing with other condition.

```
#sample31.rb
Shoes.app :width => 150, :height => 70 do
  def number_on_disk
    fill eval(@color)
    oval 0, 0, 30
    @l = para ''
    animate(3){@l.replace strong @i+=1, :stroke => white}
  end

  @color = 'blue'
  @i = 0
  @slot = flow{number_on_disk}

  button('chang') do
    @slot.clear
    @color = %w(green red blue yellow)[rand(4)]
    @i = 0
    @slot.append{number_on_disk}
  end
end
```

 # sample31.png

5.18 Combination of image objects show/hide and mouse hover/leave

We've already learned many useful methods like show/hide and hover/leave.
This tiny sample shows us a wonderful combination.

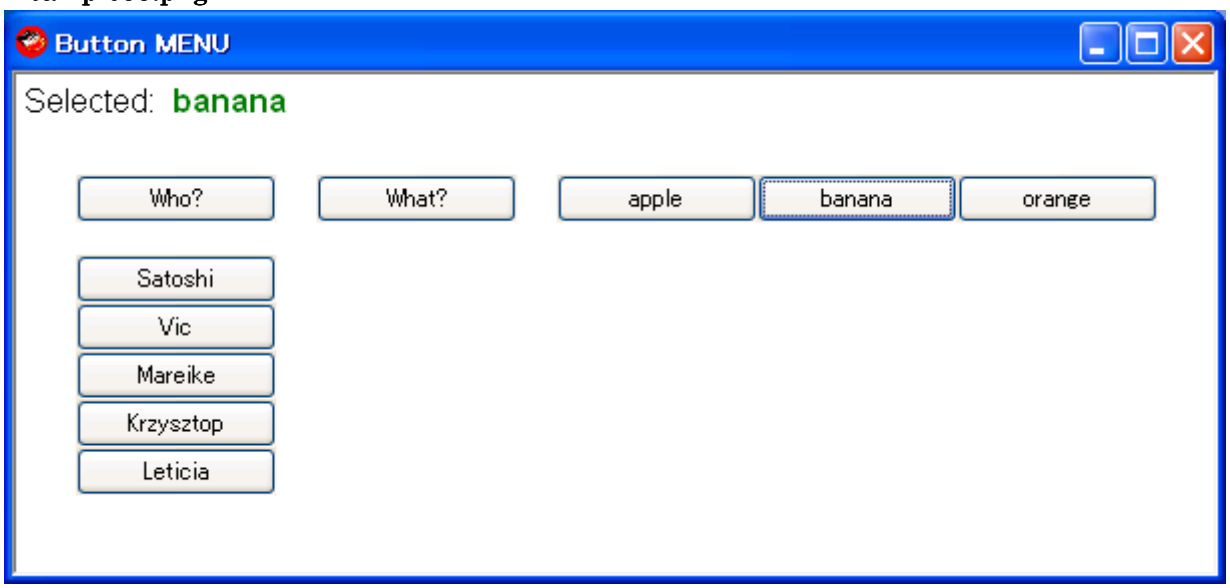
```
#sample32.rb
Shoes.app :width => 350, :height => 250, :title => 'Menus' do
  def menu items
    flow do
      items.each_with_index do |e, i|
        nostroke
        nofill
        b = image(:width => 100, :height => 21){rect(0, 0, 100, 21)}
        f = image(:width => 100, :height => 21){rect(0, 0, 100, 21,
                                                :fill => yellow,:curve => 8)}.hide
        b.move 0, i*23
        f.move 0, i*23
        para i, '. ', e, "¥n"
        b.hover{f.show; @msg.text = strong(e)}
        b.leave{f.hide; @msg.text = ''}
      end
    end
  end

  para 'Selected: '
  @msg = para '', :stroke => green

  flow :left => 50, :top => 50 do
    para strong "What?¥n"
    menu %w(apple tomato orange)
  end
  flow :left => 200, :top => 50 do
    para strong "Who?¥n"
    menu %w(Satoshi Krzysztof Victor Leticia Mareike)
  end
end
```

 # sample32.png

This one is another sample code. It shows the MENUs using many buttons.

```
#sample33.rb
Shoes.app :title => 'Button MENU', :height => 250 do
  def menu title, items, n
    button title, :align => 'center', :width => 100 do
      if @toggle[n]
        items.each{|e| @f[n].append{button(e, :align => 'center',
                                           :width => 100){@msg.text = strong(e)}}}
      else
        @f[n].clear
        @msg.text = ''
      end
      @toggle[n] = !@toggle[n]
    end
  end

  para 'Selected: '
  @msg = para '', :stroke => green

  @toggle = true, true
  @f = []

  flow :left => 30, :top => 50, :width => 100 do
    menu 'Who?', %w(Satoshi Vic Mareike Krzysztop Leticia), 0
  end
  @f << flow(:left => 30, :top => 90, :width => 100)

  flow :left => 150, :top => 50, :width => 100 do
    menu 'What?', %w(apple banana orange), 1
  end
  @f << flow(:left => 270, :top => 50, :width => 400)
end
```

 # sample33.png



And this one is a combination of sample32 and 33.

```
#sample34.rb
Shoes.app :title => 'Image MENU', :height => 250 do
  background lightskyblue.to_s..lightsalmon.to_s, :angle => 30

  def menu title, items, n
    tb = image(:left => 0, :top => 0, :width => 100,
                                      :height => 21){rect(0, 0, 100, 21)}
    para strong title
    @f ||= []
    @f << flow do
      items.each_with_index do |e, i|
        nostroke
        nofill
        b = image(:width => 100, :height => 21){rect(0, 0, 100, 21)}
        f = image(:width => 100, :height => 21){rect(0, 0, 100, 21,
                                              :fill => khaki,:curve => 8)}.hide
        yield b, f, i, e
        b.hover{f.show}
        b.leave{f.hide}
        b.click{@msg[n].text = strong(e)}
      end
    end.hide

    tb.click{@f[n].toggle; @msg[n].text = ''}
  end

  @msg = []
  para 'Selected Who?: '
  @msg << para('', :stroke => forestgreen)
  para 'Selected What?: ', :left => 300
  @msg << para('', :stroke => tomato)

  flow :left => 30, :top => 50, :width => 100 do
    menu 'Who?', %w(Satoshi Vic Mareike Krzysztop Leticia), 0 do |b, f, i, e|
      b.move 0, i*23
      f.move 0, i*23
      para i, '. ', e, "¥n"
    end
  end

  flow :left => 150, :top => 50, :width => 400 do
    menu 'What?', %w(apple banana orange), 1 do |b, f, i, e|
      b.move((i+1)*102 , -32)
      f.move((i+1)*102 , -32)
      para "#{i}. #{e}", :left => 150 + (i+1)*102, :top => 50
    end
  end
end
```

 # sample34.png

If you want to hide the items when mouse clicks on it, do the following revising and try to run.

Line No.18

```
b.click{@msg[n].text = strong(e)}
----> b.click{@msg[n].text = strong(e); @f[n].toggle}
```

Line No.22

```
tb.click{@f[n].toggle; @msg[n].text = ''}
----> tb.click{@f[n].toggle}
```

This MENUs-like user interface original idea was provided by Krzysztop Wicher.

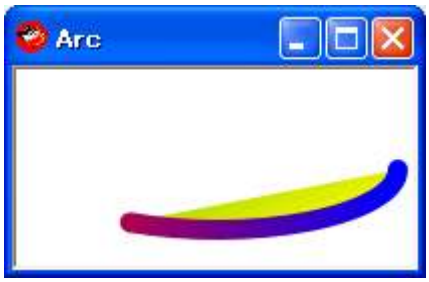
5.19 arc and cap

New arc and cap methods are released in the 970th build.
See the following article:
(http://newwws.shoooes.net/2008/09/10/arcs.html)

And _why shows us a wonderful combination of the animate method.

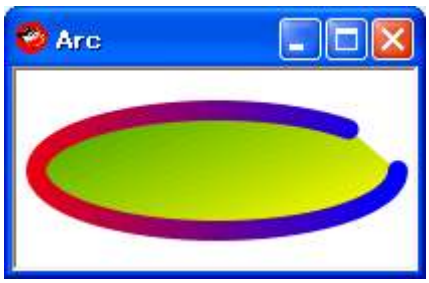
```
#sample35.rb
Shoes.app :width => 200, :height => 100, :title => 'Arc' do
  fill green.to_s..yellow.to_s, :angle => 45
  stroke red.to_s..blue.to_s, :angle => 90
  strokewidth 10
  cap :round

  a = animate 12 do |i|
    @c.remove if @c
    r = i * (PI * 0.01)
    @c = arc 100, 50, 180, 60, 0, i * (PI * 0.01)
    a.stop if r >= TWO_PI
  end
end
```

 # sample35.png



Started….

 # sample35-1.png



Almost finished….

5.20 widget with block

It's good using the widget object with block in the case of getting the keypress or the mouse event smoothly.

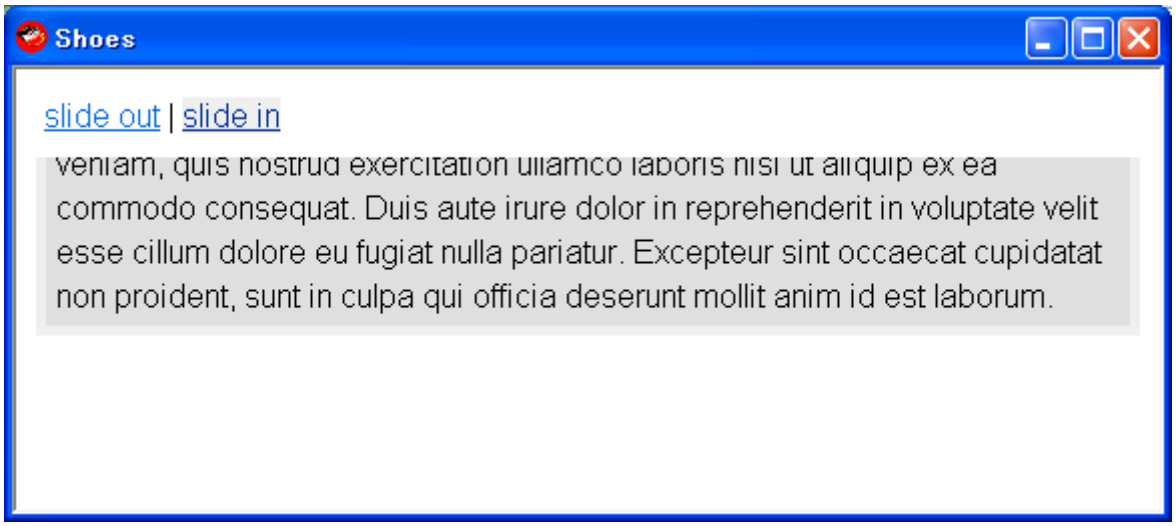
```
#sample36.rb
class Creature < Widget
 def initialize
   msg = para '', :stroke => white
   c = image Dir.pwd + '/yar.png'
   yield c, msg
 end
end

Shoes.app :width => 140, :height => 70 do
 flow :left => 10, :top => 10 do
   background blue.to_s..green.to_s, :width => 100, :height => 30
   creature  do |c, msg|
     c.click do
       msg.text = 'Uhhhh...'
       a = animate(20){|i| c.rotate(-15); a.stop if i > 22}
     end
     c.hover{msg.text = 'hello'}
     c.leave{msg.text = ''}
   end
 end
end
```

 # sample36.png

5.21 text message slide-in

_why gave us his one thousandth commit of Shoes on 24th Sep. And a new sample code simple-slide.rb: testing slide-in slide-out animation, too. This is the screenshot.

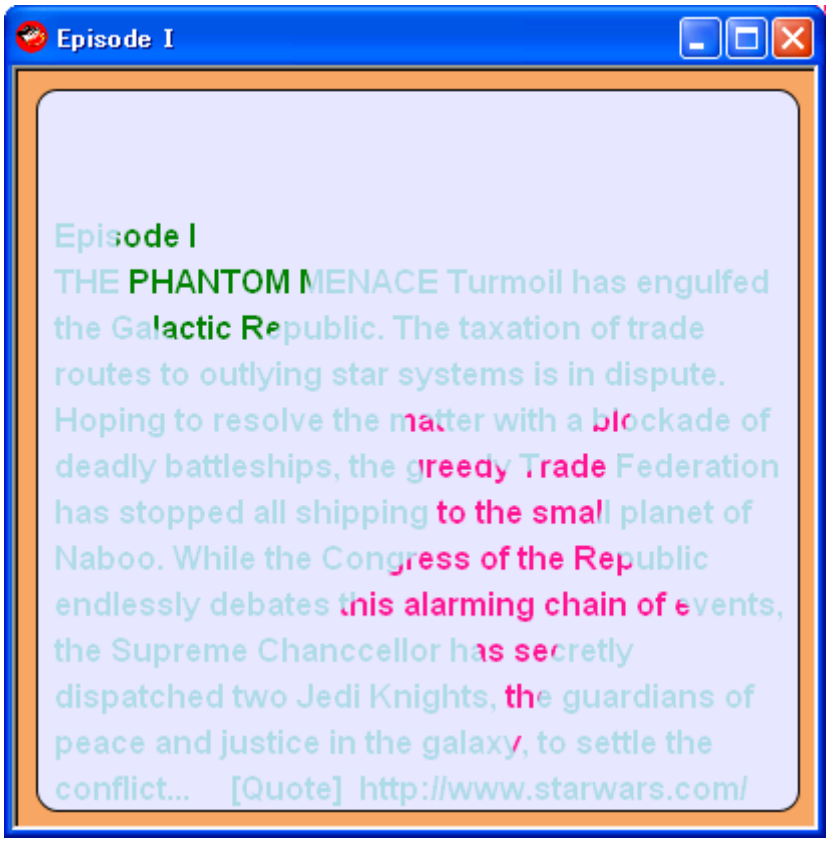
simple-slide.png



Next sample code, sample37.rb, which works almost similar behavior of the text message slide-in by using mask and animate methods.

```
#sample37.rb
episode1 =<<-EOS
Episode I
THE PHANTOM MENACE Turmoil has engulfed the Galactic Republic. The taxation of trade
routes to outlying star systems is in dispute. ¥
Hoping to resolve the matter with a blockade of deadly battleships, the greedy Trade
Federation has stopped all shipping to the small planet of Naboo. ¥
While the Congress of the Republic endlessly debates this alarming chain of events,
the Supreme Chanccellor has secretly dispatched two Jedi Knights, the guardians
of peace and justice in the galaxy, to settle the conflict... ¥
[Quote]
http://www.starwars.com/episode-iii/bts/production/f20050126/indexp2.html
EOS

Shoes.app :width => 400, :height => 380, :title => 'Episode I' do
  rect 0, 0, 400, 380, :fill => sandybrown
  rect 10, 10, 380, 360, :fill => lavender, :curve => 10
  stack do
    rect 10, 10, 380, 360, :fill => lightblue
    oval 50, 40, 100, :fill => green
    star 250, 245, 5, 100, 40, :fill => deeppink, :angle => 90
    mask do
      @t = para strong(episode1), :left => 15, :top => 340, :width => 380
    end

    @a = animate(36) do |i|
      @t.left, @t.top = 15, 340 - i
      @a.stop if i > 330
    end
  end
end
```

sample37.png

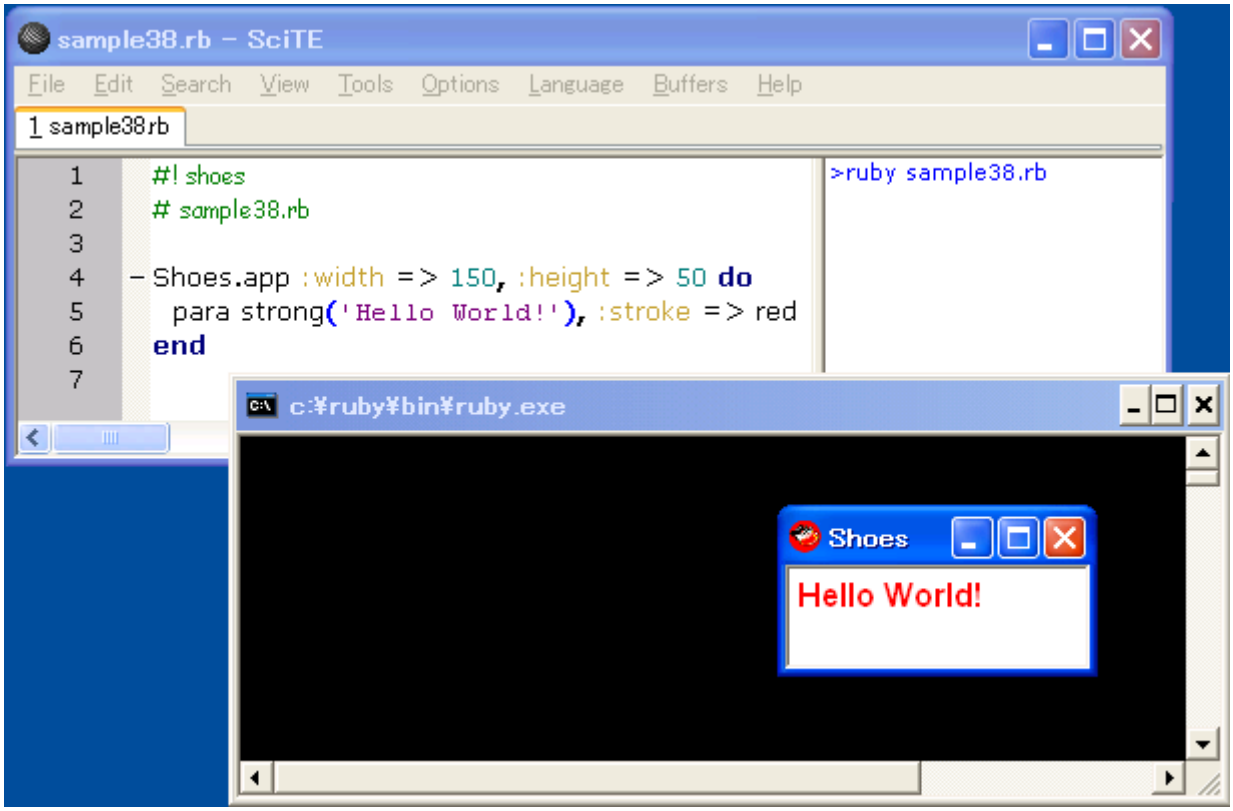


5.22 #! shoes

The sample38.rb has #! shoes on its first line. Shell will see the program file has a #! line and pass it to Shoes.

```
#sample38.rb
#! shoes
# sample38.rb

Shoes.app :width => 150, :height => 50 do
  para strong('Hello World!'), :stroke => red
end
```

 # sample38.png



Write code with SciTE and push F5, then kick up Shoes!

And next.
The sample38-1.rb is a Ruby program, not Shoes app. But it'll launch the Shoes app.

```
#sample38-1.rb

%x(ruby sample38.rb)
```

5.23 loading widgets from other files?

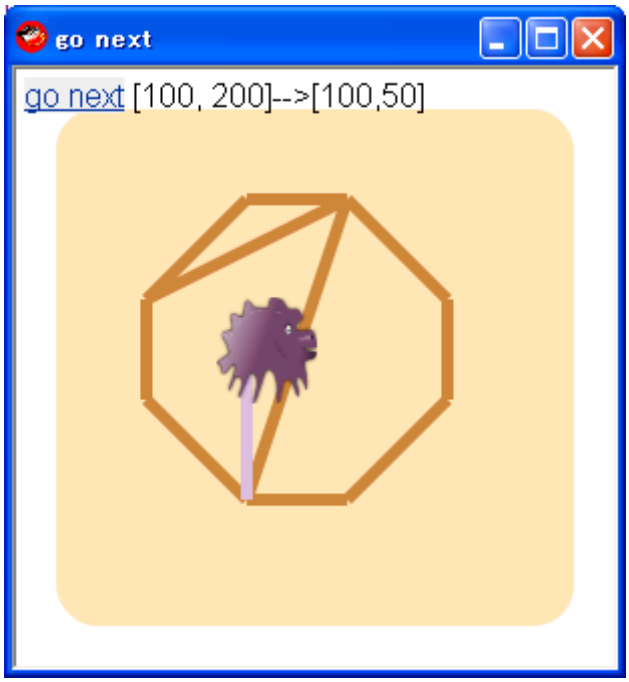
The sample39.rb has a require method to load the custom widget class stored in the other file (sample39_creature.rb).

loading widgets from other files?
http://www.mail-archive.com/shoes@code.whytheluckystiff.net/msg01971.html

The Main App and Its Requires
http://help.shoooes.net/Rules.html

```
#sample39.rb
require 'sample39_creature'

Shoes.app :title => 'go next', :width => 300, :height => 300 do
  background moccasin, :margin=> 20, :curve => 20
  c = creature(Dir.pwd + '/loogink.png', 50, 100)

  routes = [[100, 50], [150, 50], [200, 100], [200, 150], [150, 200], [100, 200],
            [50, 150], [50, 100], [150, 50], [100, 200], [50, 100]]
  i = -1
  para link('go next'){
    begin
      x, y = routes[(i+=1) % 10]
      @msg.text = "#{c.position.inspect}-->[#{x},#{y}]"
      c.glide [x, y], :line => true
    end unless c.playing?
  }

  @msg = para ''
end
```

 # sample39.png



```
#sample39_creature.rb
class Shoes::Creature < Shoes::Widget
  def initialize path, x, y
    @path = path
    @img = image path
    @img.move x, y
  end
  def glide args, opt = {:line => false}
    args << @img.left << @img.top
    x1, y1, x0, y0 = args.collect{|e| e.to_f}
    a = animate(48) do |i|
      @playing = true
      case
        when x0 < x1
          x = x0 + i
          y = y0 + (y1 - y0) / (x1 - x0) * i  if y0 < y1
          y = y0  if y0 == y1
          y = y0 - (y0 - y1) / (x1 - x0) * i  if y0 > y1
          max = x1 - x0
        when x0 == x1
          x = x0
          y = y0 + i  if y0 < y1
          y = y0 - i  if y0 > y1
          y = y0  if y0 == y1
          max = (y1 - y0).abs
        when x0 > x1
          x = x0 - i
          y = y0 + (y1 - y0) / (x0 - x1) * i  if y0 < y1
          y = y0  if y0 == y1
          y = y0 - (y0 - y1) / (x0 - x1) * i  if y0 > y1
          max = x0 - x1
        else
      end
      @l.remove if @l
      strokewidth 6
      @l = line(x0 + 15, y0 + 15, x.to_i + 15, y.to_i + 15,
                                                  :stroke => thistle)  if opt[:line]
      #@img.move x.to_i, y.to_i
      @img.remove
      @img = image @path, :left => x.to_i, :top => y.to_i
      if i == max
        a.stop
        @playing = false
        line(x0 + 15, y0 + 15, x.to_i + 15, y.to_i + 15, :stroke => peru)  if opt[:line]
        @img.remove
        @img = image @path, :left => x.to_i, :top => y.to_i
      end
    end
  end
  def position
    [@img.left, @img.top]
  end
  def playing?
    @playing
  end
end
```

5.24 optional arguments

When we create an oval shape, like

```
oval :left => 50, :top => 50, :width => 30
```

The :left and :top positions are the top-left corner of the oval.

But we create an star shape, like

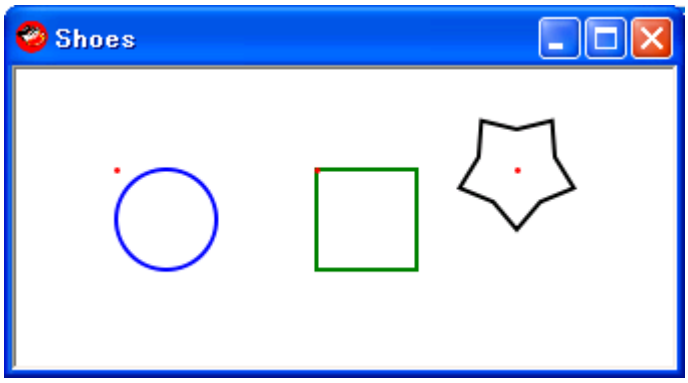
```
star :left => 50, :top => 50, :points => 5, :outer => 15, :inner => 10
```

The :left and :top positions are the center of the star.
A bit strange behavior…

This information was provided by Sergio Silva.

```
# sample40.rb
Shoes.app :width => 330, :height => 150 do
  nofill
  strokewidth 2
  oval 50, 50, 50, :stroke => blue
  rect 150, 50, 50, 50, :stroke => green
  star 250, 50, 5, 30, 20, :stroke => black
  oval 50, 50, 1, :stroke => red, :fill => red
  oval 150, 50, 1, :stroke => red, :fill => red
  oval 250, 50, 1, :stroke => red, :fill => red
 end
```

 # sample40.png

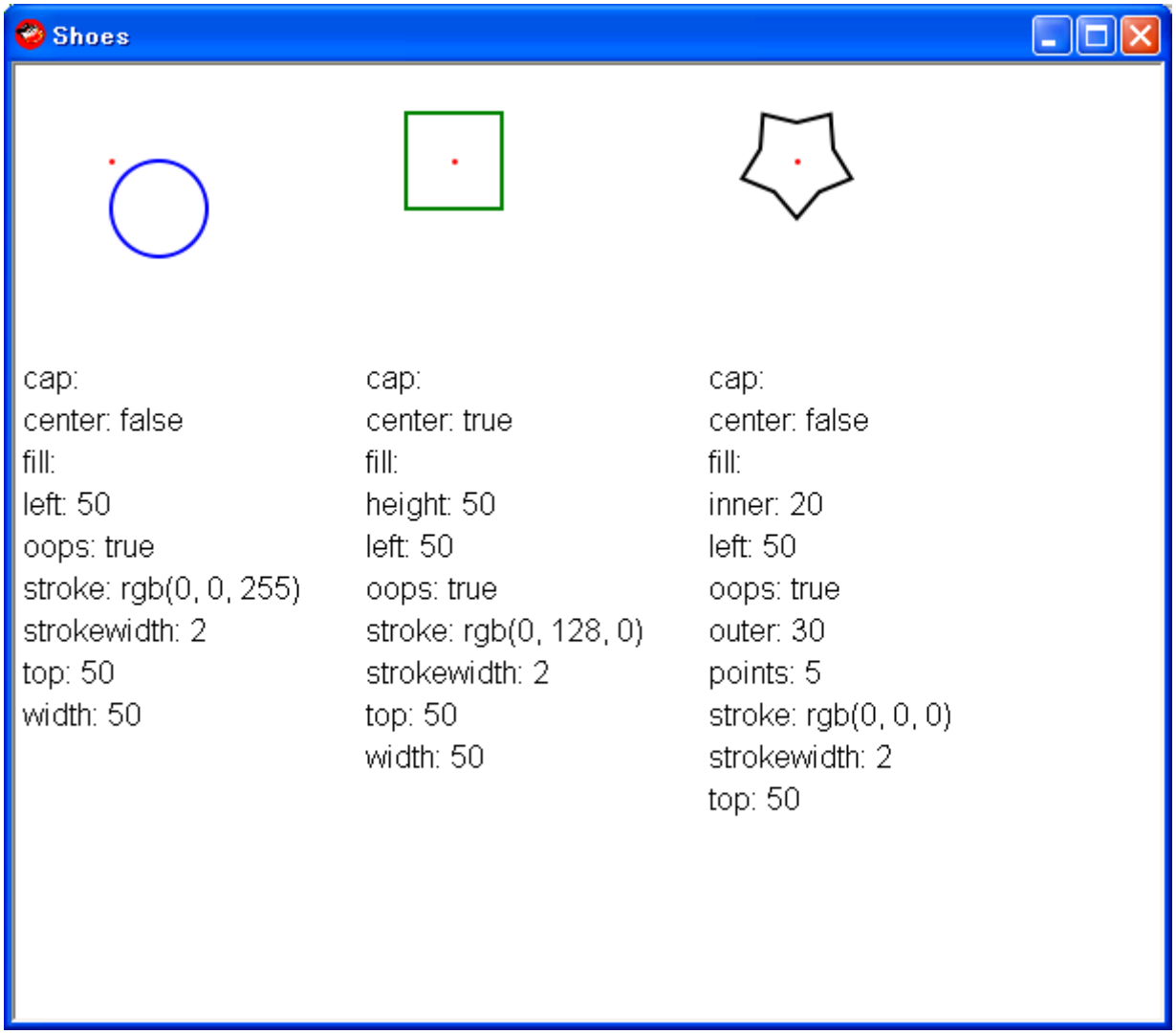


We can use the :center option to specify the coordinates. But it works well only in the case of the oval and rect methods except the star method. If we add undefined option, like :oops, as one of the arguments, no error will occur and nothing will happen, just ignored.

Although I don't know this behavior is a spec or a bug…

```
# sample40-1.rb
Shoes.app  do
  stack :width => 0.3 do
    nofill
    strokewidth 2
    oval 50, 50, 1, :stroke => red, :fill => red
    @o = oval 50, 50, 50, :stroke => blue, :center => false, :oops => true
    @p1 = para '', :top => 150
  end

  stack :width => 0.3 do
    nofill
    strokewidth 2
    oval 50, 50, 1, :stroke => red, :fill => red
    @r = rect 50, 50, 50, 50, :stroke => green, :center => true, :oops => true
    @p2 = para '', :top => 150
  end

  stack :width => 0.4 do
    nofill
    strokewidth 2
    oval 50, 50, 1, :stroke => red, :fill => red
    @s = star 50, 50, 5, 30, 20, :stroke => black, :center => false, :oops => true
    @p3 = para '', :top => 150
  end

  @p1.text = @o.style.map{|e| e.join(': ')}.sort.join("¥n")
  @p2.text = @r.style.map{|e| e.join(': ')}.sort.join("¥n")
  @p3.text = @s.style.map{|e| e.join(': ')}.sort.join("¥n")
end
```

 # sample40-1.png



In the above sample40-1, the oval and rect methods accepted :center option, but the star method ignored it as same as the undefined option :oops.

5.25 slot with scrollbar

The :scroll option establishes the slot as a scrolling slot.

```
# sample41.rb
Shoes.app :width => 240, :height => 161, :resizable => false do
  image Dir.pwd + '/jellybeans.jpg'
  flow :width => 100, :height => 40, :left => 2, :top => 2, :scroll => true do
    background bisque
    30.times do |i|
      color = COLORS.keys.map{|sym|sym.to_s}.sort_by{rand}
      para "colorful jellybeans", :stroke => send(color.first)
    end
  end
end
```

 # sample41.png

6. Hot Topics in the Shoes ML and Shoooes.net

Picked up some topics here which were discussed in the Shoes ML nowadays.

6.1 External Fonts

_why added support to Shoes for loading .ttf and .otf files (and others, depending on your platform.)
Can't wait next build.

+ external font files
(http://www.mail-archive.com/shoes@code.whytheluckystiff.net/msg02092.html)

6.2 Locking edit_box

If Shoes makes the edit_box read-only, we can select (copy) text data from that.

Locking edit boxes
(http://www.mail-archive.com/shoes@code.whytheluckystiff.net/msg02120.html)

6.3 Styling Master List

It's the last big missing piece of the built-in manual.

The Styles Master List
(http://help.shoooes.net/Styles.html)

7. Assignment

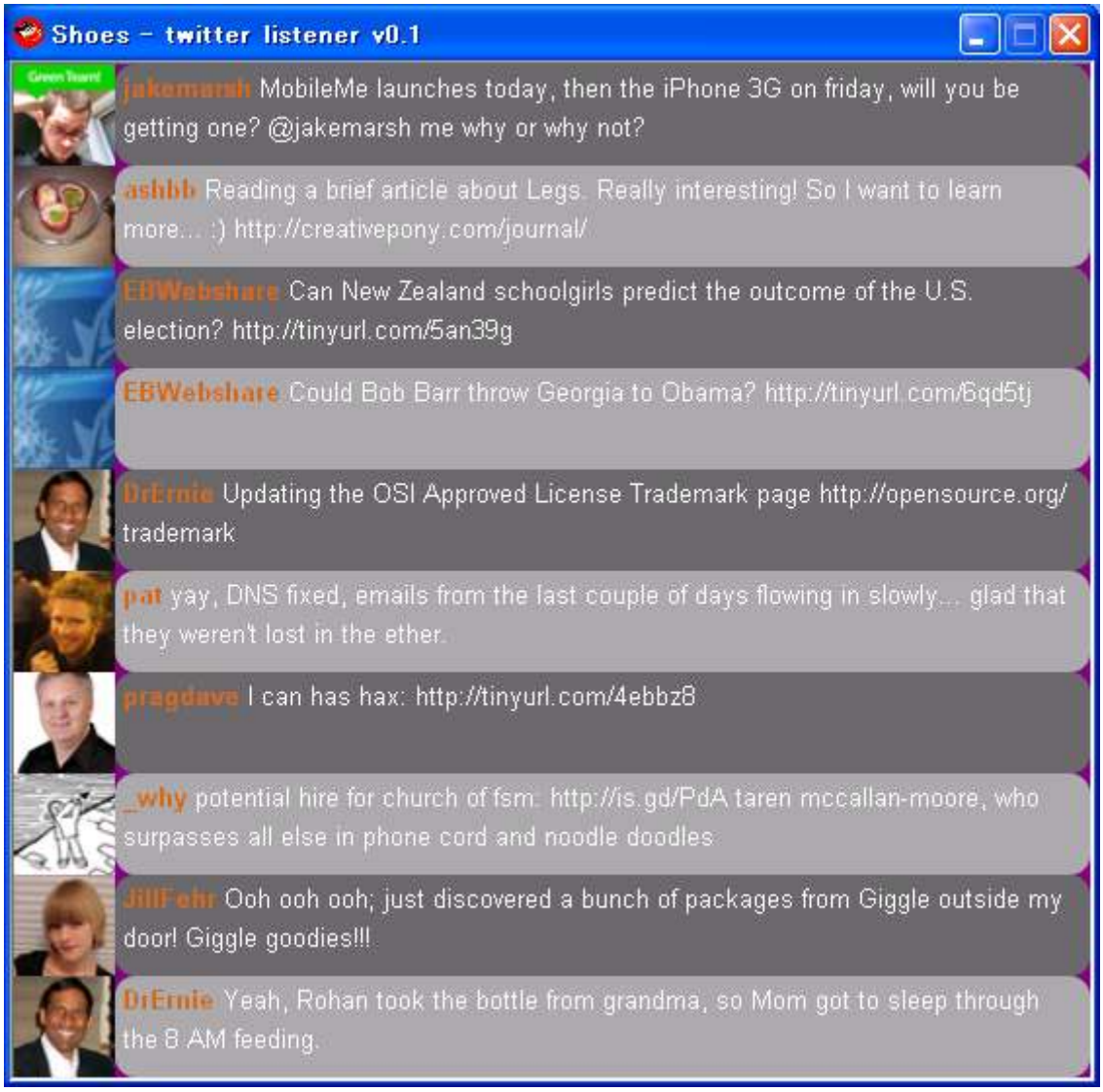
7.1 Assignment 1 – twitter client (reader)

The following spec is an example.
Let's imagine freely and write your own twitter listener.

Example spec:

1. Access your twitter homepage: http://twitter.com/home
2. Get the friends timeline: /statuses/friends_timeline.xml
3. Display the latest 10 twitters.
4. User interface image is:

 # twitter_listener_snapshot.png



Have fun!

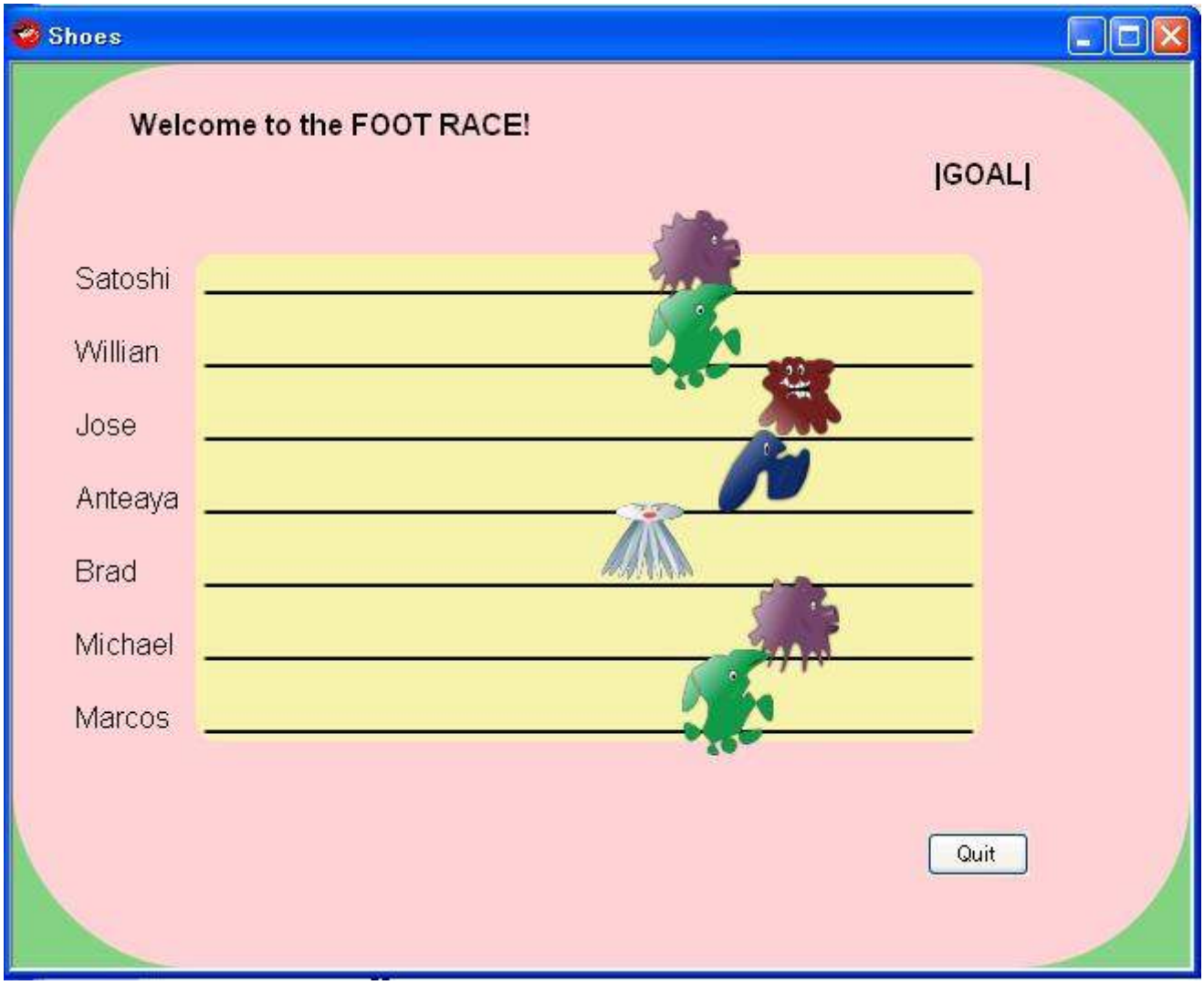
7.2 Assignment 2 – footracer

The following spec is an example.
Let's imagine freely and write your own Foot Race Game.

Example spec:

1. Racers run toward the goal.
   When the first racer meets the goal line, the game stops and then shows the winner.
2. When multiple racers meet the goal line at a time, they are all winners.
3. User inputs racers' names.
4. Until user selects quit the game, user can play the game repeatedly.
5. User interface image is:

 # footracer_screenshot.jpg



Have fun!

8. Relevant web sites (Links)

- **Three manuals**: Nobody Knows Shoes (NKS) and Built-in Manual and Online Reference Manual.
  http://shoooes.net/manuals/

- **The Shoes Help Desk**: The spot for beginners and advanced Shoesers alike.
  http://help.shoooes.net/

- **The Shoebox**
  http://the-shoebox.org/

- **Rubyinside.com the latest article**
  Shoes – Rubys Cross Platform GUI App Toolkit - Grows Up
  (http://www.rubyinside.com/whys-shoes-grows-up-1014.html)

9. Appendix

9.1 Advanced article

-- Threaded XMLHttpRequest In Shoes
(http://hackety.org/2008/08/15/threadedDownloadsInShoes.html)
-- Stamping EXEs And DMGs
(http://hackety.org/2008/06/19/stampingExesAndDmgs.html)
-- Martin DeMello's Gooey Challenge
(http://hackety.org/2008/06/12/martinDemellosGooeyChallenge.html)
-- The Image Block At The Bottom Of Shoes
(http://hackety.org/2008/05/22/theImageBlockAtTheBottomOfShoes.html)

9.2 Shoes mailing list in English

To join the mailing list:

Send a message to shoes AT code.whytheluckystiff.net
Cc: why AT whytheluckystiff.net

The archives are available at
http://www.mail-archive.com/shoes@code.whytheluckystiff.net/
or
http://news.gmane.org/gmane.comp.lib.shoes

9.3 Shoes mailing list in Spanish

http://groups.google.com/group/zapatos

9.4 Shoes IRC channel

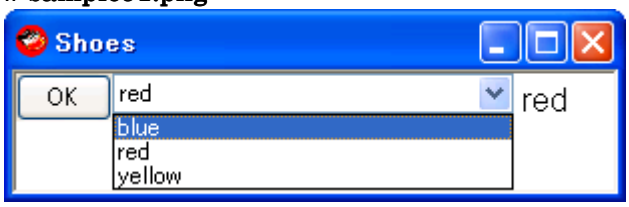
#shoes on irc.freenode.net

10. Trivia

- list_box needs to set :height explicitly

```
# sample91.rb
Shoes.app :width => 300, :height => 60 do
  button('OK'){@msg.text = @e.text}
  @e = list_box :items => ['blue', 'red', 'yellow'] , :height => 30
  @msg = para ''
end
```

 # sample91.png

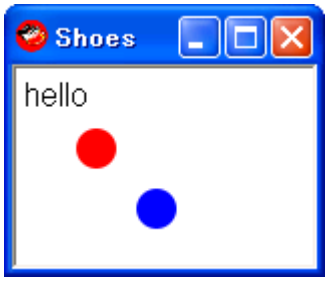


Try to comment out :height => 30 and run.
The list_box doesn't show the items.
But this strange behavior occurs only on Windows. On Mac OS X, it doesn't.
This OS X information was provided by George Thompson.

- wonder the mouse event behavior

```
# sample92.rb
Shoes.app :width => 150, :height => 100 do
  @msg = para ''
  nostroke

  @img = image :width => 20, :height => 20, :left => 30, :top => 30 do
    oval :radius => 10, :fill => red
  end
  @img.hover{ @msg.replace 'hello' }
  @img.leave{ @msg.replace '' }

  @o = oval :left => 60, :top => 60, :radius => 10, :fill => blue
  @o.hover{ @msg.replace 'hi' }
  @o.leave{ @msg.replace '' }
end
```

 # sample92.png



The image (red) oval works the mouse hovering feature but the blue doesn't.
This behavior is a bug. But it is fixed in the latest Shoes-0.r970.

- Shoes Fest

http://shoes.yapok.org/

- Shoes was born July 31st, 2007.

Yes, July 31st is the birthday and now one year old.

- Shoes wiki

New Shoes wiki was launched at Sep 12th, 2008.
(http://github.com/why/shoes/wikis)
Old one was retired. Now linked to the Shoes Official Homepage.
(http://code.whytheluckystiff.net/shoes/)
(http://shoooes.net/)

- Built-in sample apps

See the following directory (in the case of Windows XP and Shoes-0.r970)
There are many sample code. Let's hack!

```
C:¥Program Files¥Common Files¥Shoes¥0.r970¥samples
```

- Building Shoes

If you have to build Shoes by yourself, this information might be useful.
(http://github.com/why/shoes/wikis/buildingshoes)

- The Rules Of Shoes and **UTF-8 Everywhere**

Shoes scope makes us a bit confusing…
Shoes supports UTF-8 everywhere. Can't wait to get the next build.
(http://newwws.shoooes.net/2008/09/22/the-rules-of-shoes.html)

- A very decent intro to shoes for beginners

http://ruby.about.com/od/shoes/Shoes.htm

- **Lovely creatures in this tutorial created by Anita Kuno**.

Each creature has his/her own name.

* purple is **loogink**
* brown is **Yar**
* green is **Cy**
* blue is **kamome**
* white is **shaha**

```
# sample93.rb
Shoes.app :width => 400, :height => 75, :title => 'Lovely Creaturs' do
  background "#D0A".."#F90", :angle => 90
  x = 0
  creatures = %w(loogink yar cy kamome shaha).collect{|c| image Dir.pwd +
                "/#{c}.png", :left => x += 60}

  messages =<<-EOS
Thx for reading. :)
See you!
Enjoy Ruby and Shoes!
EOS
  messages = messages.to_a

  msg = subtitle '', :top => 30, :stroke => white
  animate(3) do
    creatures.each{|c| c.move c.left, rand(15)}
  end

  creatures.each do |c|
    c.hover{msg.text = strong messages[rand(messages.length)]}
    c.leave{msg.text = ''}
  end
end
```

#sample93.png

Let's enjoy Ruby and Shoes with the Lovely Creaturs!

FIN.