

Make a configurable module to be included in objects

The main idea is to use an object and a method that returns a module.

First (and probably bad way)

```
class Extension # or a module, it doesn't matter here..
  def self.set( name )
    Module.new do
      define_method "my_#{name}" do
        "hello #{name}"
      end
    end
  end
end

class Receiver
  include Extension.set( 'mary' )
  ...
end

r = Receiver.new
r.my_mary # -> "hello mary"
```

The problem is in the unnamed module :

```
Receiver.ancestors # [Receiver, #<Module:0x00007ef79abe7b28>, ... ]
```

Hey, there **is** a solution to unnamed **module** (Ruby 3.3 **and** further only !)
but **this** way **is** still to be avoided. The name have to **not** be a legal ruby
constant name ('builder', 'Builder(mary)' are ok but **not** 'Builder' or
'Builder::Mary')!
`Module.new { ... }.set_temporary_name("builder")

Second (leading to a named module)

Modules are classes that can be subclassed..

```
class Extension < Module
  def initialize( name = 'john' )
    super() # some say this is mandatory...
    @name = name
  end

  def included( klass )
    super # better if nesting inclusions...
    ## the key here is to use a ruby closure to hold instance variable
    # First way :
    -> ( name ) do
      define_method "my_#{name}" do
        "hello #{name}"
      end
    end.call( @name )
  end
end
```

```

# Second way
[ @name ].each do |name|
  define_method "my_#{name}" do
    "hello #{name}"
  end
end

# Third way
set_method( @name )
end

private

def set_method( name )
  define_method "my_#{name}" do
    "hello #{name}"
  end
end

class Receiver
  include Extension.new( 'mary' )
  ...
end

Receiver.ancestors # [Receiver, #<Extension:0x00007ef795adc4e0>, ... ]

```

Syntactic sugars

```

class Extension < Module
  def self.[]( *args )
    new( *args )
  end

  def self.For( *args )
    new( *args )
  end
end

# previous code

class Receiver
  # choose the one you like..
  include Extension::For( 'mary' ) # like Shrine::Attachment( :image )
  include Extension.For( 'mary' )
  include Extension[ 'mary' ]
end

```

Further

When arguments are optional

Then use a module wrapper so the inclusion is not wasted by empty `[]` or `.new`.

```

module Buildable
  def self.included( klass )
    klass.include Builder.new
  end
end

```

```

    def self.[ *args ]
      Builder.new *args
    end
  end
end

class Receiver
  include Buildable # will include Builder.new
  include Buildable[ 'mary' ] # will include Builder.new( 'mary' )
end

```

A complete configuration

Why not provide a complete configuration feature :

```

class Builder < Module
  attr_accessor :name

  def initialize
    super
    yield self
  end

  def included( klass )
    -> (name) do
      define_method "my_#{name}" do
        "hello #{name}"
      end
      end.call( name )
    end
  end

  class Receiver
    include( # without parenthesis, ambiguity leads to error
      Builder.new do |config|
        config.name = 'mary'
      end
    )
  end
  r = Receiver.new
  r.my_mary # -> "hello mary"

```

Hey ! This leads to a mutable configuration !!

A complete immutable configuration (using Ustruct)

```

class Builder < Module
  attr_reader :config

  def initialize( **options )
    super()
    @config = Ustruct.new( options )
  end

  def included( klass )
    -> (name) do # custom methods
      define_method "my_#{name}" do
        "hello #{name}"
      end
      end.call config.name

```

```
-> (config) do # an attribute reader for config !
  define_method :config do
    config
  end
end.call config
end

class Receiver
  include Builder.new( name: 'mary', flouz: 'yellow' )
end

r = Receiver.new
r.my_mary # -> 'hello mary'
r.config # -> #<Ustruct:0x00007406a26d01d8 @content={:name=>"mary", :flouz=>"yellow"}>
```