DUPLICATED CODE

THE MOST POPULAR AND BUG PRONE WAY OF CODE REUSE

1ST CODE SMELL

ACCORDING TO MR FOWLER

SOURCE CODE ANALYSIS USING ABSTRACT SYNTAX TREES

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> "INSTEAD OF AGGRESSIVELY REFACTORING CLONES, WE SHOUD POSSIBLY FOCUS ON TRACKING AND MANAGING CLONES DURING THE EVOLUTION OF SOFTWARE SYSTEMS"
>
> SAHA ET AL 2010

```ruby
def transform_options(options)
  args = []
  options.keys.each do |opt|
    if options[opt]
      args << "-#{opt}"
    elsif !options[opt]
      # ignore
    else
      val = options.delete(opt)
      args << "-#{opt.to_s} '#{e(val)}'"
    end
  end
  args
end

def wild_sh(command, &block)
  process = Child.new(command)
  [process.out, process.err]
end

def sh(command, &block)
  process =
      Child.new(
          command,
          :timeout => Git.git_timeout,
          :max     => Git.git_max_size
      )
  [process.out, process.err]
rescue TimeoutExceeded, MaximumOutputExceeded
  raise GitTimeout, command
```

STEP 1
CTRL+C

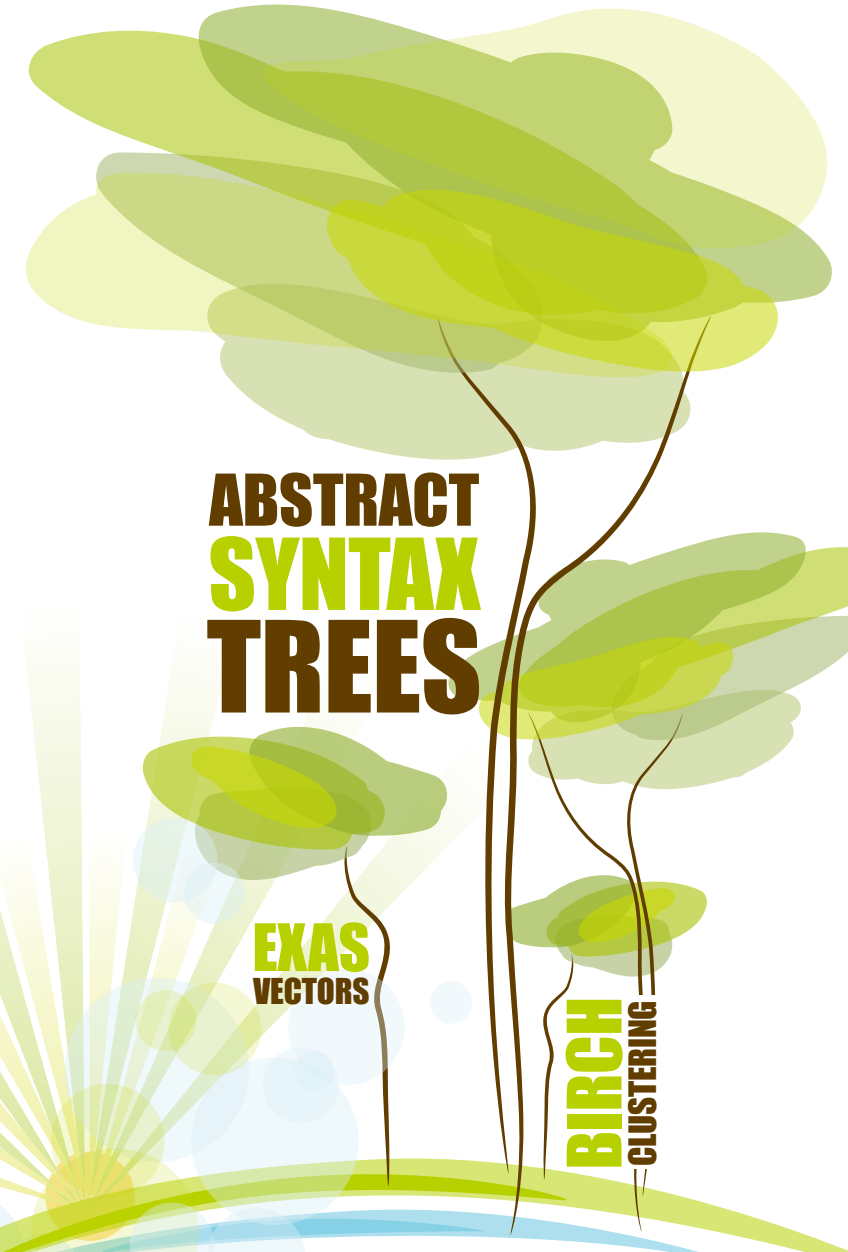
STEP 2
CTRL+V

AUTOMATIC WARNING

```ruby
def transform_options(options)
  args = []
  options.keys.each do |opt|
    if opt.to_s.size == 1
      if options[opt]
        args << "-#{opt}"
      elsif !options[opt]
        # ignore
      else
        val = options.delete(opt)
        args << "-#{opt.to_s} '#{e(val)}'"
      end
    else
      if options[opt]
        args << "--#{opt.to_s.gsub(/_/, '-')}"
      elsif !options[opt]
        # ignore
      else
        val = options.delete(opt)
        args << "--#{opt.to_s.gsub(/_/, '-')}='#{e(val)}'"
      end
    end
  end
  args
end

def wild_sh(command, &block)
  process = Child.new(command)
  [process.out, process.err]
end
```

⚠ This code fragment is cloned



REAL-TIME INCREMENTAL GREAT