



WEBTJENESTER

Hvordan enkelt lage web tjenester med Sinatra

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bouvet

OM

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C - C++ - VB - Delphi - Java- osv. osv. - C# - Javascript - Ruby



WEBTJENESTE

Hva er en web tjeneste



REST

URI

URI = skjema «://» autoritet «/» sti [«?» spørring] [«#» fragment]

Eksempler

<http://api.twitter.com/search>

<http://graph.facebook.com/»brukernavn»>

<http://www.ics.uci.edu/~fielding/pubs/dissertation/top.htm>

REST

Representational state transfer



GET POST PUT DELETE

REST

Respons formater

XML

```
<?XML version=»1.0» encondig=»ISO-8859-1»?>
<konferanse navn=»Rootskonf 2012»>
  <foredrag>
    <presentasjon navn=»Foredrag1« />
  </foredrag>
</konferanse>
```

JSON

```
"{"konferanse":"ROOTS CONFERENCE","foredrag":[{"presentasjon": {"navn":"SIMPLE WEB SERVICES WITH RUBY AND SINATRA"}}]}
```

REST

STATUS KODER

200

400

403

404

RUBY

Optimized for programmer productivity and happiness

Laget av Yukihiro Matsumoto

Open source

Released i 1995

Kontinuerlig under utvikling



まつもと ゆきひろ
Yukihiro Matsumoto

Chief Architect, Ruby

RUBY

Generisk

Interpretert

Garbage collected

Rent Objekt Orientert

Prosedyrelt

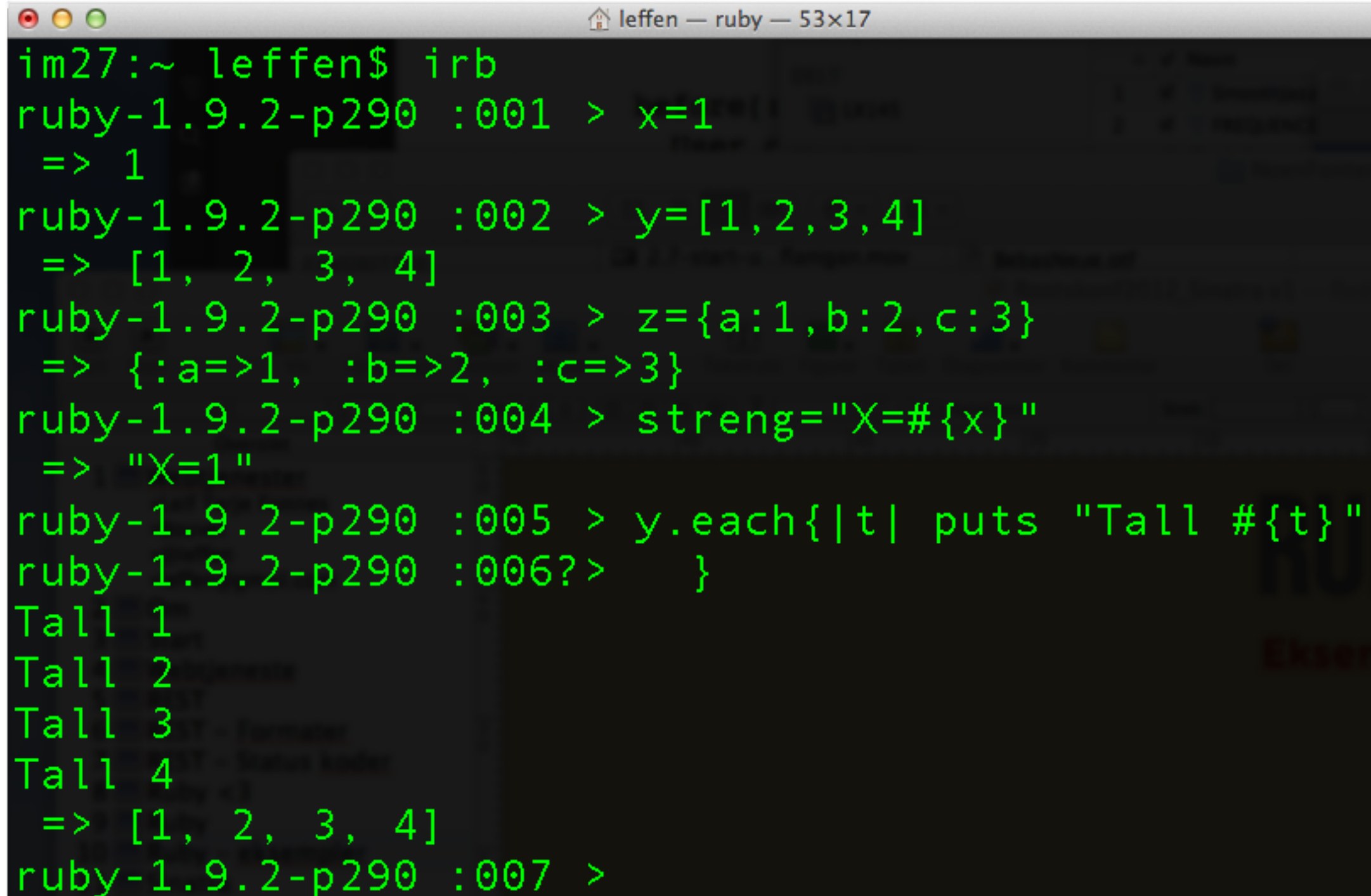
Funksjonsorientert

Duck Typing



RUBY

Eksempler



```
im27:~ leffen$ irb
ruby-1.9.2-p290 :001 > x=1
=> 1
ruby-1.9.2-p290 :002 > y=[1,2,3,4]
=> [1, 2, 3, 4]
ruby-1.9.2-p290 :003 > z={a:1,b:2,c:3}
=> {:a=>1, :b=>2, :c=>3}
ruby-1.9.2-p290 :004 > streng="X=#{x}"
=> "X=1"
ruby-1.9.2-p290 :005 > y.each{|t| puts "Tall #{t}"}
ruby-1.9.2-p290 :006?>    }
Tall 1
Tall 2
Tall 3
Tall 4
=> [1, 2, 3, 4]
ruby-1.9.2-p290 :007 >
```

INNSTALLASJON - RUBY

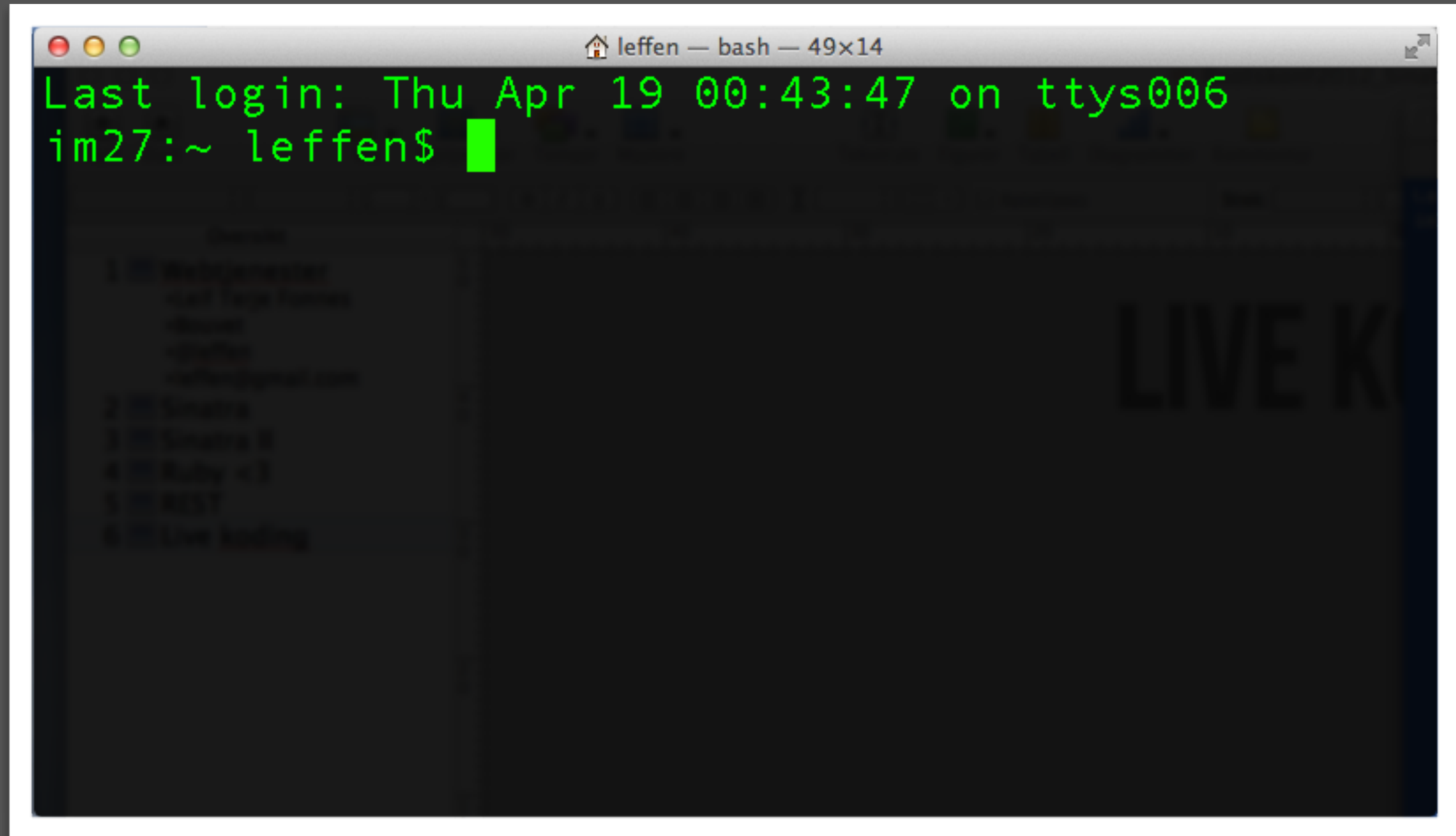
OSX / LINUX
RVM: <https://rvm.io/>

Trenger XCode 4.1/4.2
eller <https://github.com/kennethreitz/osx-gcc-installer>

```
$ curl -L get.rvm.io | bash -s stable  
$ source ~/.rvm/scripts/'rvm'  
$ rvm requirements  
$ rvm install 1.9.3
```

Windows
<http://railsinstaller.org/>

KODING



A terminal window titled "leffen — bash — 49x14" with standard macOS window controls. The terminal output shows a green message: "Last login: Thu Apr 19 00:43:47 on ttys006". Below this is the prompt "im27:~ leffen\$" followed by a green cursor. The background of the terminal is dark and contains a faint, large watermark that reads "LIVE KODING". On the left side, there is a list of projects or files, each preceded by a number from 1 to 6.

```
leffen — bash — 49x14
Last login: Thu Apr 19 00:43:47 on ttys006
im27:~ leffen$
```

- 1. [faded text]
- 2. [faded text]
- 3. [faded text]
- 4. [faded text]
- 5. [faded text]
- 6. [faded text]

Sinatra

README
DOCUMENTATION
CONTRIBUTE
CODE
CREW
ABOUT

Fork me on GitHub

Put this in
your pipe

and smoke it

```
require 'sinatra'

get '/hi' do
  "Hello World!"
end
```

```
$ gem install sinatra
$ ruby -rubygems hi.rb
== Sinatra has taken the stage ..
>> Listening on 0.0.0.0:4567
```

SINATRA

DSL i Ruby for å lage web applikasjoner

RASKT

LAVT MINNEFORBRUK

MINIMALISTISK

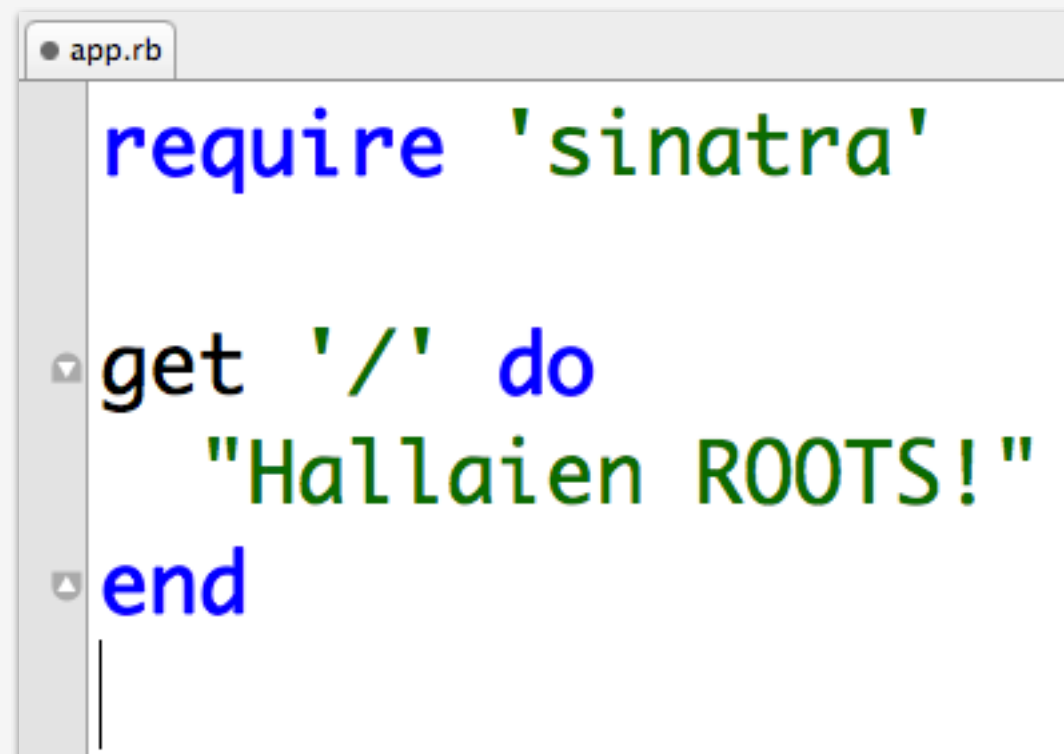


INNSTALLASJON - SINATRA

OSX / Linux
\$ gem install sinatra

Windows
c:\> gem install sinatra

APPLIKASJON 1



```
● app.rb
require 'sinatra'

get '/' do
  "Hallaien ROOTS!"
end
```

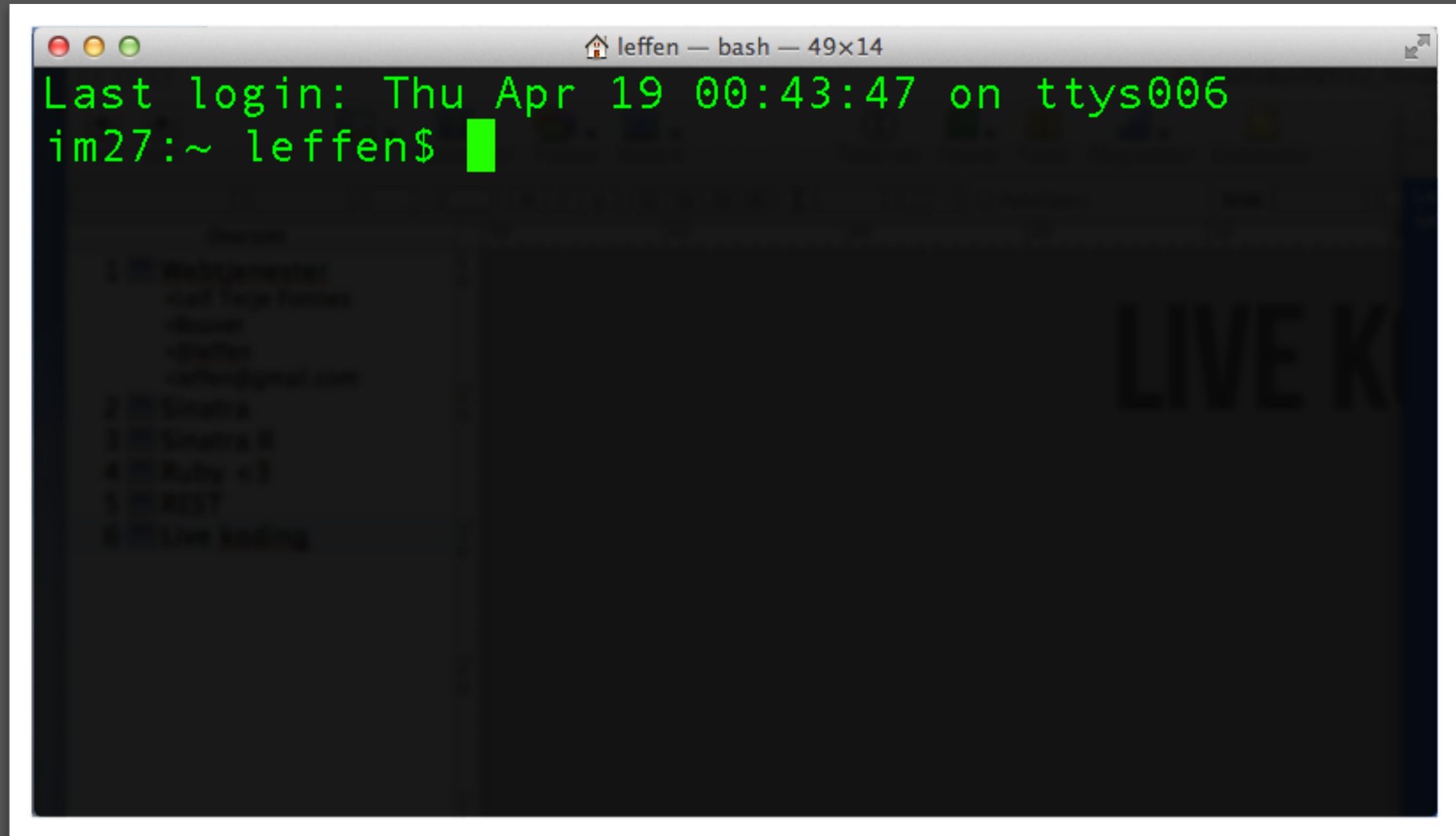
\$ ruby app.rb

```
== Sinatra/1.3.2 has taken the stage on 4567 for development with backup from Thin
>> Thin web server (v1.3.1 codename Triple Espresso)
>> Maximum connections set to 1024
>> Listening on 0.0.0.0:4567, CTRL+C to stop
```

APPLIKASJON 1

```
. curl -v 127.0.0.1:4567
* About to connect() to 127.0.0.1 port 4567 (#0)
*   Trying 127.0.0.1... connected
* Connected to 127.0.0.1 (127.0.0.1) port 4567 (#0)
> GET / HTTP/1.1
> User-Agent: curl/7.21.4 (universal-apple-darwin11.0) libcurl/
7.21.4 OpenSSL/0.9.8r zlib/1.2.5
> Host: 127.0.0.1:4567
> Accept: */*
>
< HTTP/1.1 200 OK
< X-Frame-Options: sameorigin
< X-XSS-Protection: 1; mode=block
< Content-Type: text/html; charset=utf-8
< Content-Length: 15
< Connection: keep-alive
< Server: thin 1.3.1 codename Triple Espresso
<
* Connection #0 to host 127.0.0.1 left intact
* Closing connection #0
Hallaien ROOTS!
```

KODING



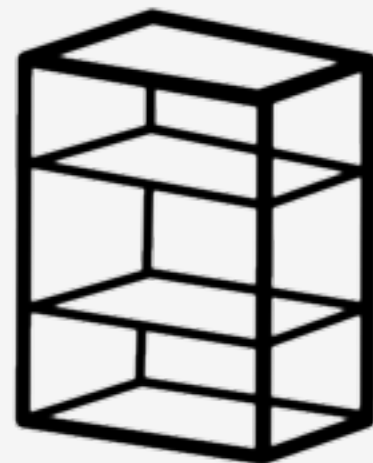
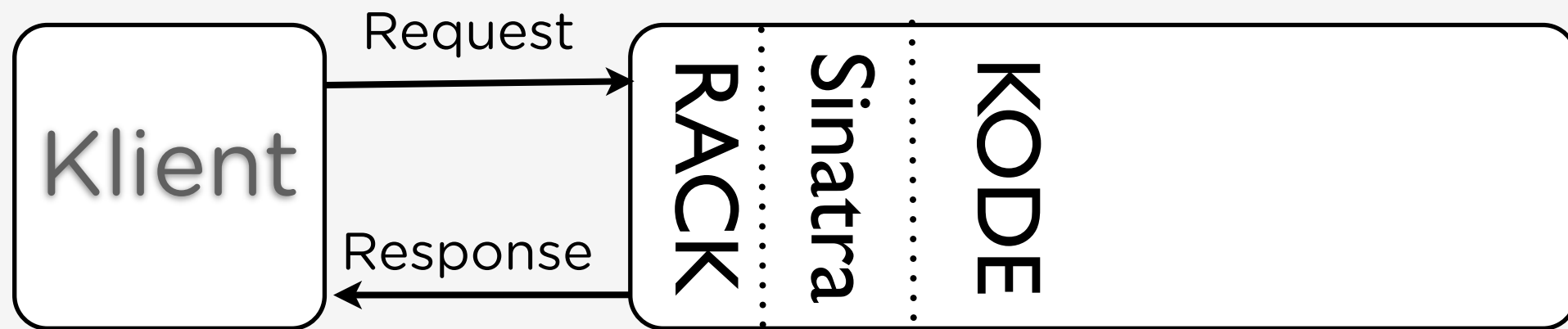
A terminal window titled "leffen — bash — 49x14" with standard macOS window controls. The terminal output shows a green message: "Last login: Thu Apr 19 00:43:47 on ttys006". Below this is the prompt "im27:~ leffen\$" followed by a green cursor. A faint, dark sidebar on the left contains a list of projects:

- 1. 01 Webdevelopment
- 2. 02 Frontend
- 3. 03 Backend
- 4. 04 Ruby on Rails
- 5. 05 PHP
- 6. 06 Live coding

The main area of the terminal is dark, with the words "LIVE K" faintly visible in the background.

RACK

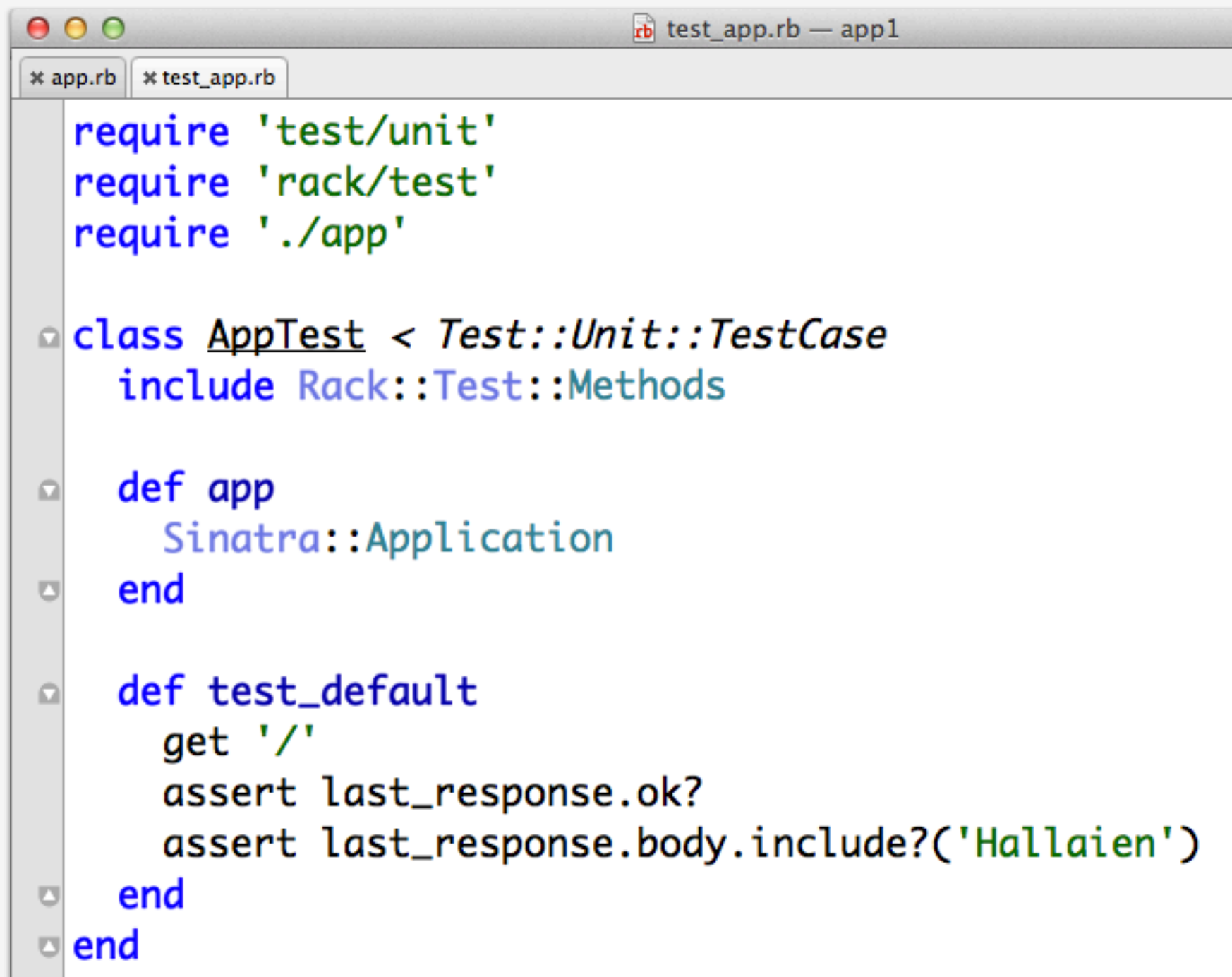
Mellomlagskode



rack
powers web applications

TEST

RACK::TEST



The image shows a screenshot of a code editor window titled "test_app.rb — app1". The editor has two tabs: "app.rb" and "test_app.rb". The "test_app.rb" tab is active, displaying the following Ruby code:

```
require 'test/unit'
require 'rack/test'
require './app'

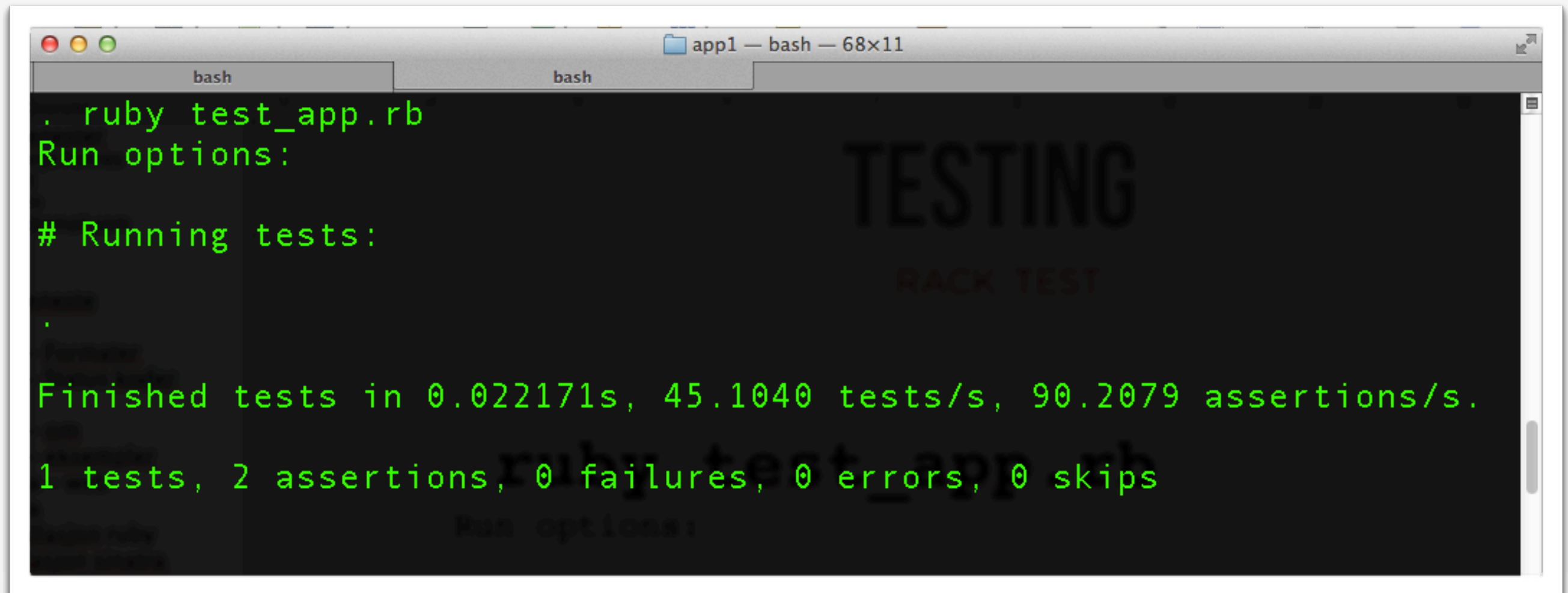
class AppTest < Test::Unit::TestCase
  include Rack::Test::Methods

  def app
    Sinatra::Application
  end

  def test_default
    get '/'
    assert last_response.ok?
    assert last_response.body.include?('Hallaien')
  end
end
```

TEST

Eksekvering

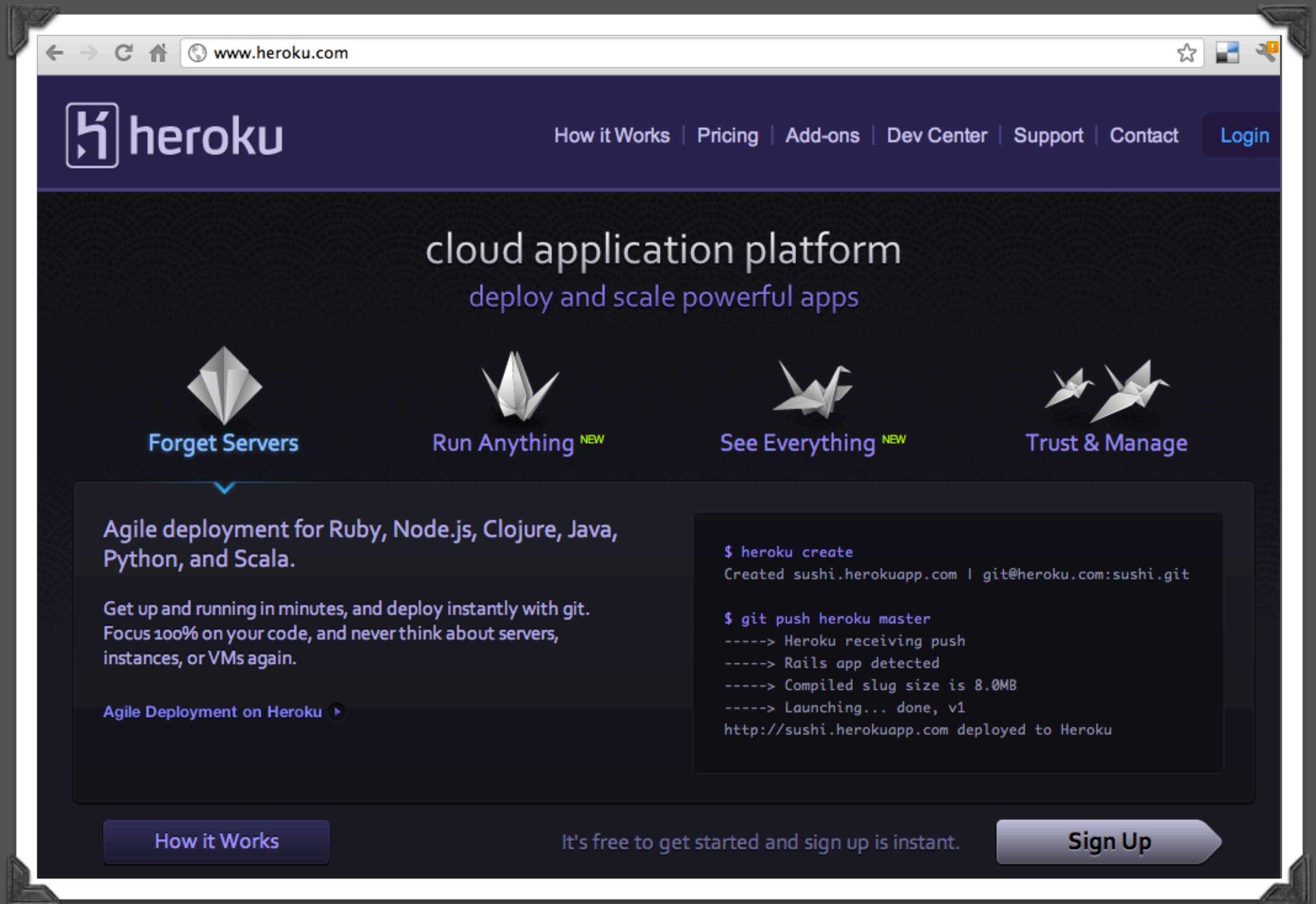
A screenshot of a macOS terminal window titled 'app1 — bash — 68x11'. The terminal shows the execution of a Ruby test file. The output includes the command '. ruby test_app.rb', the text 'Run options:', '# Running tests:', and a summary of test results: 'Finished tests in 0.022171s, 45.1040 tests/s, 90.2079 assertions/s.' followed by '1 tests, 2 assertions, 0 failures, 0 errors, 0 skips'.

```
. ruby test_app.rb
Run options:

# Running tests:

Finished tests in 0.022171s, 45.1040 tests/s, 90.2079 assertions/s.
1 tests, 2 assertions, 0 failures, 0 errors, 0 skips
```

PRODUKSJONSSETTING



The screenshot shows the Heroku website homepage. At the top, there's a navigation bar with the Heroku logo, links for 'How it Works', 'Pricing', 'Add-ons', 'Dev Center', 'Support', 'Contact', and a 'Login' button. The main heading reads 'cloud application platform' with the tagline 'deploy and scale powerful apps'. Below this, four features are highlighted with origami crane icons: 'Forget Servers', 'Run Anything' (marked 'NEW'), 'See Everything' (marked 'NEW'), and 'Trust & Manage'. A large section on the left describes agile deployment for various languages, while a terminal window on the right shows the commands to create and push an app. At the bottom, there are buttons for 'How it Works' and 'Sign Up', along with the text 'It's free to get started and sign up is instant.'

www.heroku.com

heroku

How it Works | Pricing | Add-ons | Dev Center | Support | Contact | Login

cloud application platform
deploy and scale powerful apps

Forget Servers

Run Anything ^{NEW}

See Everything ^{NEW}

Trust & Manage

Agile deployment for Ruby, Node.js, Clojure, Java, Python, and Scala.

Get up and running in minutes, and deploy instantly with git. Focus 100% on your code, and never think about servers, instances, or VMs again.

Agile Deployment on Heroku ▶

```
$ heroku create
Created sushi.herokuapp | git@heroku.com:sushi.git

$ git push heroku master
----> Heroku receiving push
----> Rails app detected
----> Compiled slug size is 8.0MB
----> Launching... done, v1
http://sushi.herokuapp.com deployed to Heroku
```

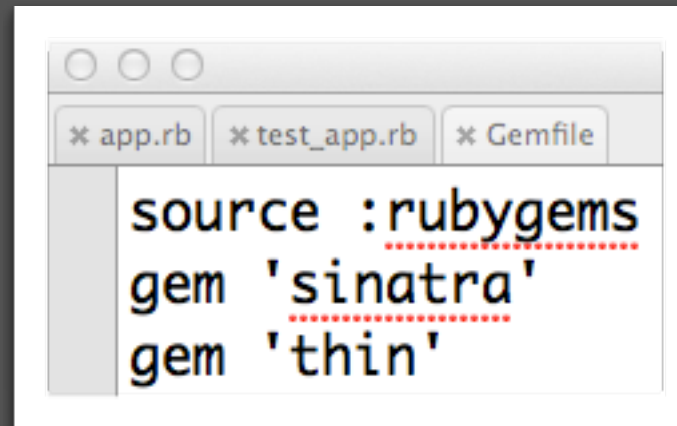
How it Works

It's free to get started and sign up is instant.

Sign Up

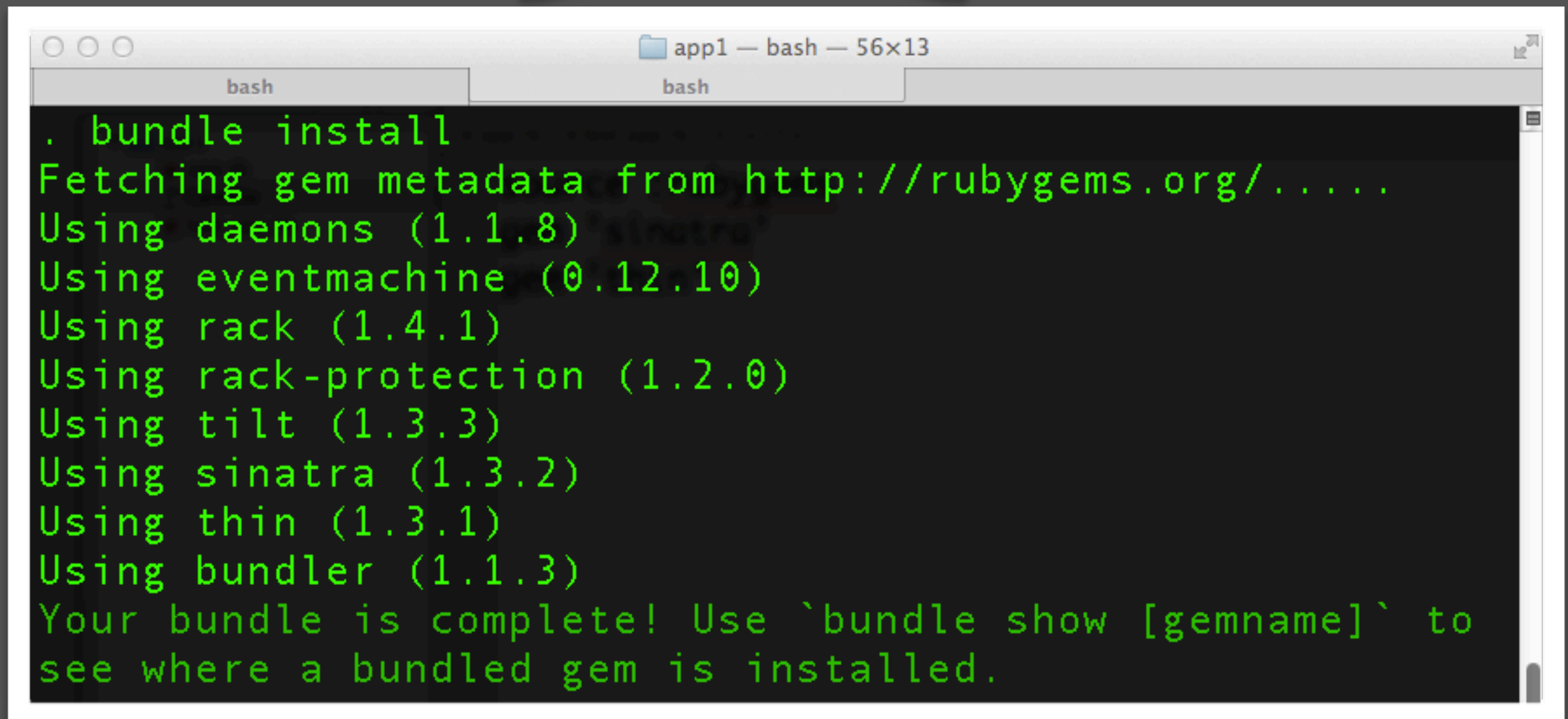
PRODUKSJONSSETTING

Gemfile



A screenshot of a text editor window showing a Gemfile. The window has three tabs: 'app.rb', 'test_app.rb', and 'Gemfile'. The 'Gemfile' tab is active, displaying the following content:

```
source :rubygems
gem 'sinatra'
gem 'thin'
```

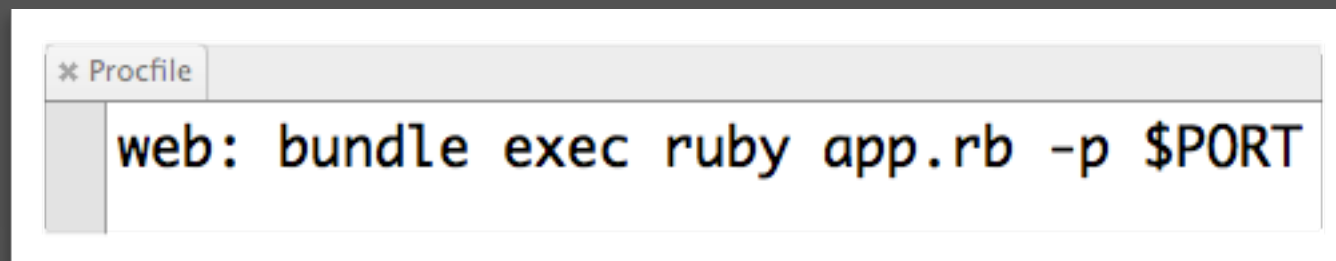


A screenshot of a terminal window titled 'app1 — bash — 56x13'. The terminal shows the output of the command '. bundle install'. The output is as follows:

```
. bundle install
Fetching gem metadata from http://rubygems.org/.....
Using daemons (1.1.8)
Using eventmachine (0.12.10)
Using rack (1.4.1)
Using rack-protection (1.2.0)
Using tilt (1.3.3)
Using sinatra (1.3.2)
Using thin (1.3.1)
Using bundler (1.1.3)
Your bundle is complete! Use `bundle show [gemname]` to
see where a bundled gem is installed.
```


PRODUKSJONSSETTING

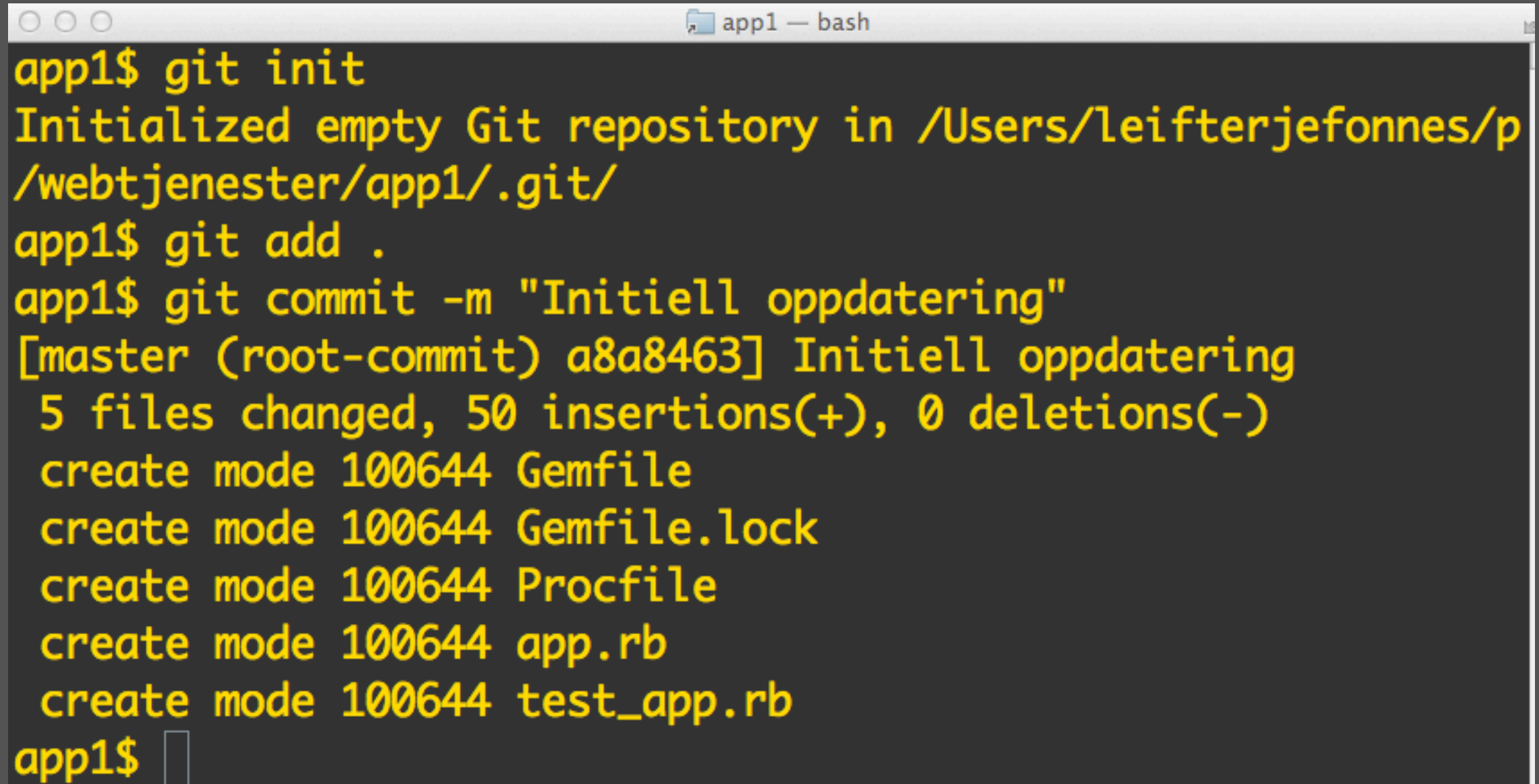
Procfile



```
web: bundle exec ruby app.rb -p $PORT
```

PRODUKSJONSSETTING

git

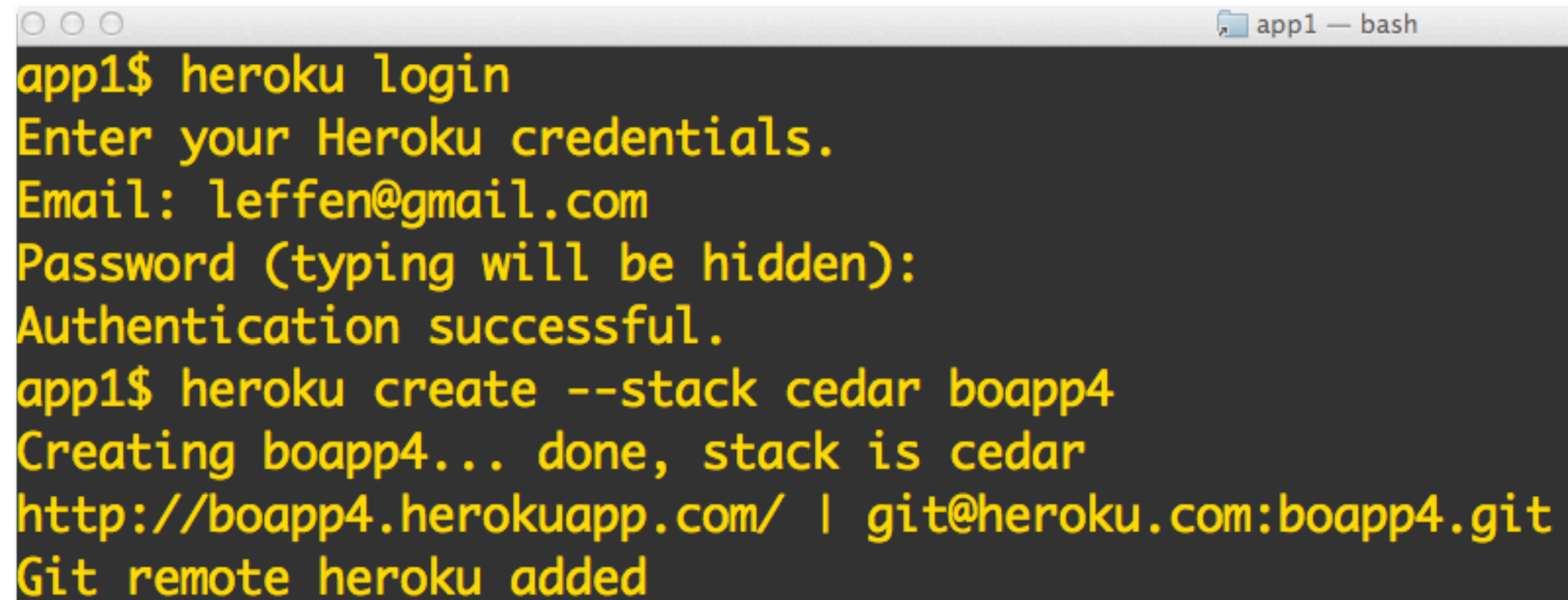
A terminal window titled 'app1 — bash' with three window control buttons in the top-left corner. The terminal displays the following commands and output:

```
app1$ git init
Initialized empty Git repository in /Users/leifterjefonnes/p
/webtjenester/app1/.git/
app1$ git add .
app1$ git commit -m "Initiell oppdatering"
[master (root-commit) a8a8463] Initiell oppdatering
 5 files changed, 50 insertions(+), 0 deletions(-)
 create mode 100644 Gemfile
 create mode 100644 Gemfile.lock
 create mode 100644 Procfile
 create mode 100644 app.rb
 create mode 100644 test_app.rb
app1$
```

PRODUKSJONSSETTING

heroku del 1

<https://toolbelt.herokuapp.com/>

A terminal window titled 'app1 — bash' with a dark background and yellow text. It shows the execution of Heroku commands: login, create, and git remote addition. The output includes email, password prompt, authentication success, app creation details, and the resulting URL and git remote.

```
app1$ heroku login
Enter your Heroku credentials.
Email: leffen@gmail.com
Password (typing will be hidden):
Authentication successful.
app1$ heroku create --stack cedar boapp4
Creating boapp4... done, stack is cedar
http://boapp4.herokuapp.com/ | git@heroku.com:boapp4.git
Git remote heroku added
```

PRODUKSJONSSETTING

heroku del 2

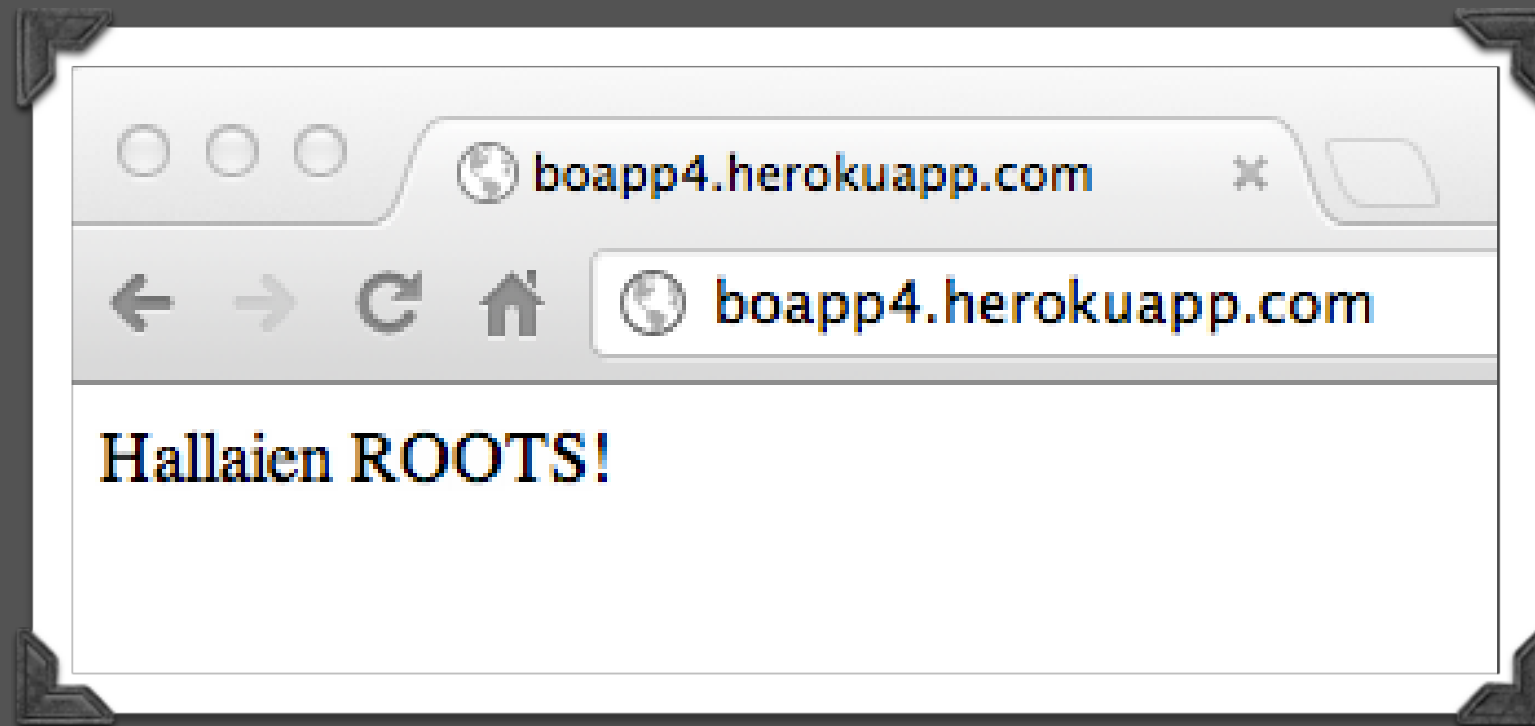
```
app1$ heroku keys:add ~/id_rsa_os329.pub
Uploading SSH public key /Users/leifterjefonnes/id_rsa_os329.pub
app1$ git push heroku master
Warning: Permanently added the RSA host key for IP address '50.19.85.132' to the list of known hosts.
Counting objects: 7, done.
Delta compression using up to 8 threads.
Compressing objects: 100% (5/5), done.
Writing objects: 100% (7/7), 897 bytes, done.
Total 7 (delta 0), reused 0 (delta 0)

-----> Heroku receiving push
-----> Ruby app detected
-----> Installing dependencies using Bundler version 1.1.2
Running: bundle install --without development:test --path vendor/bundle --binstubs bin/ --deployment
Fetching gem metadata from http://rubygems.org/.....
Installing daemons (1.1.8)
Installing eventmachine (0.12.10) with native extensions
Installing rack (1.4.1)
Installing rack-protection (1.2.0)
Installing tilt (1.3.3)
Installing sinatra (1.3.2)
Installing thin (1.3.1) with native extensions
Using bundler (1.1.2)
Your bundle is complete! It was installed into ./vendor/bundle
Cleaning up the bundler cache.
-----> Discovering process types
Procfile declares types -> web
Default types for Ruby -> console, rake
-----> Compiled slug size is 3.1MB
-----> Launching... done, v3
http://boapp4.herokuapp.com deployed to Heroku

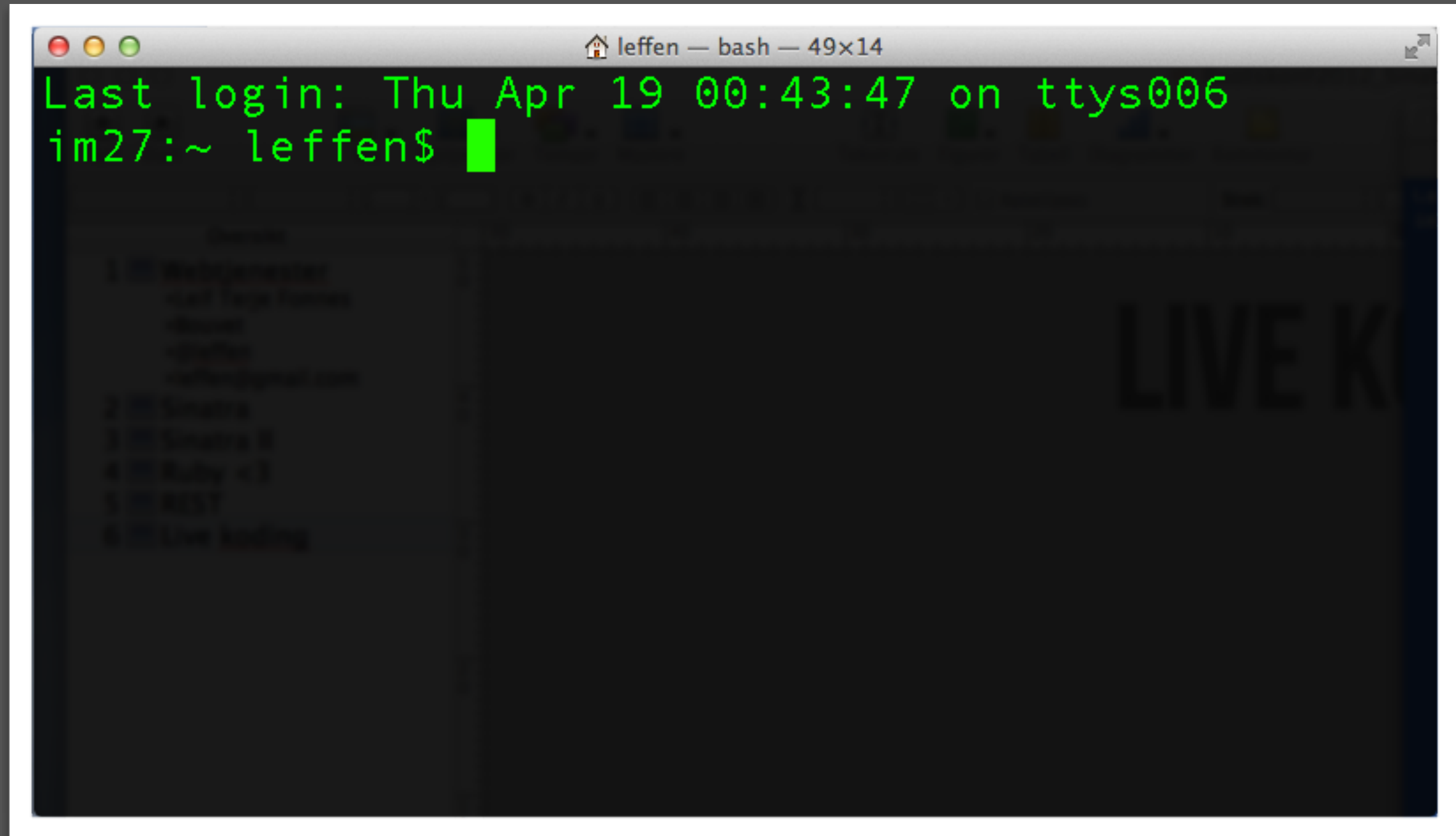
To git@heroku.com:boapp4.git
 * [new branch]      master -> master
app1$
```

PRODUKSJONSSETTING

heroku del 3



KODING



A terminal window titled "leffen — bash — 49x14" with standard macOS window controls. The terminal output shows a green login message: "Last login: Thu Apr 19 00:43:47 on ttys006". Below this is the prompt "im27:~ leffen\$" followed by a green cursor. A faint, dark sidebar on the left contains a list of services, including "1. Webserver", "2. Database", "3. Mail server", "4. Backup", "5. DNS", and "6. Live coding". The main area of the terminal is dark and mostly empty, with the words "LIVE K" faintly visible in the background.

```
leffen — bash — 49x14
Last login: Thu Apr 19 00:43:47 on ttys006
im27:~ leffen$
```


DEL 2

Implementasjon av ett API

Case: Vi får i oppdrag å lage en backend for en todoapplikasjon.
F.eks : <http://addyosmani.github.com/todomvc/>

REST

Get

/todos

Post

/todos

Put

/todos/<nr>

Delete

/todos/<nr>

Sinatra

get '/todos' do

end

post '/todos' do

end

put '/todos/:nr' do

end

delete '/todos/:nr' do

end

DATABASE

DATAMAPPER

```
$ gem install data_mapper
```

```
$ gem install dm-sqlite-adapter
```

DATABASE

DATAMAPPER

```
require 'data_mapper'
require 'dm-sqlite-adapter'
require 'json'

class Todo
  include DataMapper::Resource

  property :id, Serial
  property :text, String, length: 100
  property :done, Boolean
  property :deleted, Boolean, default: false
end

DataMapper.setup(:default, "sqlite3://#{Dir.pwd}/app1.db")
DataMapper.auto_upgrade!
```

GET

```
get '/todos' do  
  Todo.all(deleted: false).to_json  
end
```

POST

```
post '/todos' do
  text = params[:text]
  todo = Todo.create(text: text)
  if todo.save!
    {id: todo.id, text: todo.text, done: todo.done}.to_json
  else
    puts "Feil opprettelse av todoitem"
    status 400
  end
end
```

PUT

```
put '/todos/:id' do
  done = params[:done]
  todo = Todo.get(params[:id])

  halt 400, "Ugyldig todo item spesifisert #{params[:id]}" unless todo

  todo.done = done
  if todo.save!
    {id: todo.id, text: todo.text, done: todo.done}.to_json
  else
    puts "Feil oppdatering av todoitem #{todo.id}"
    status 400
  end
end
```

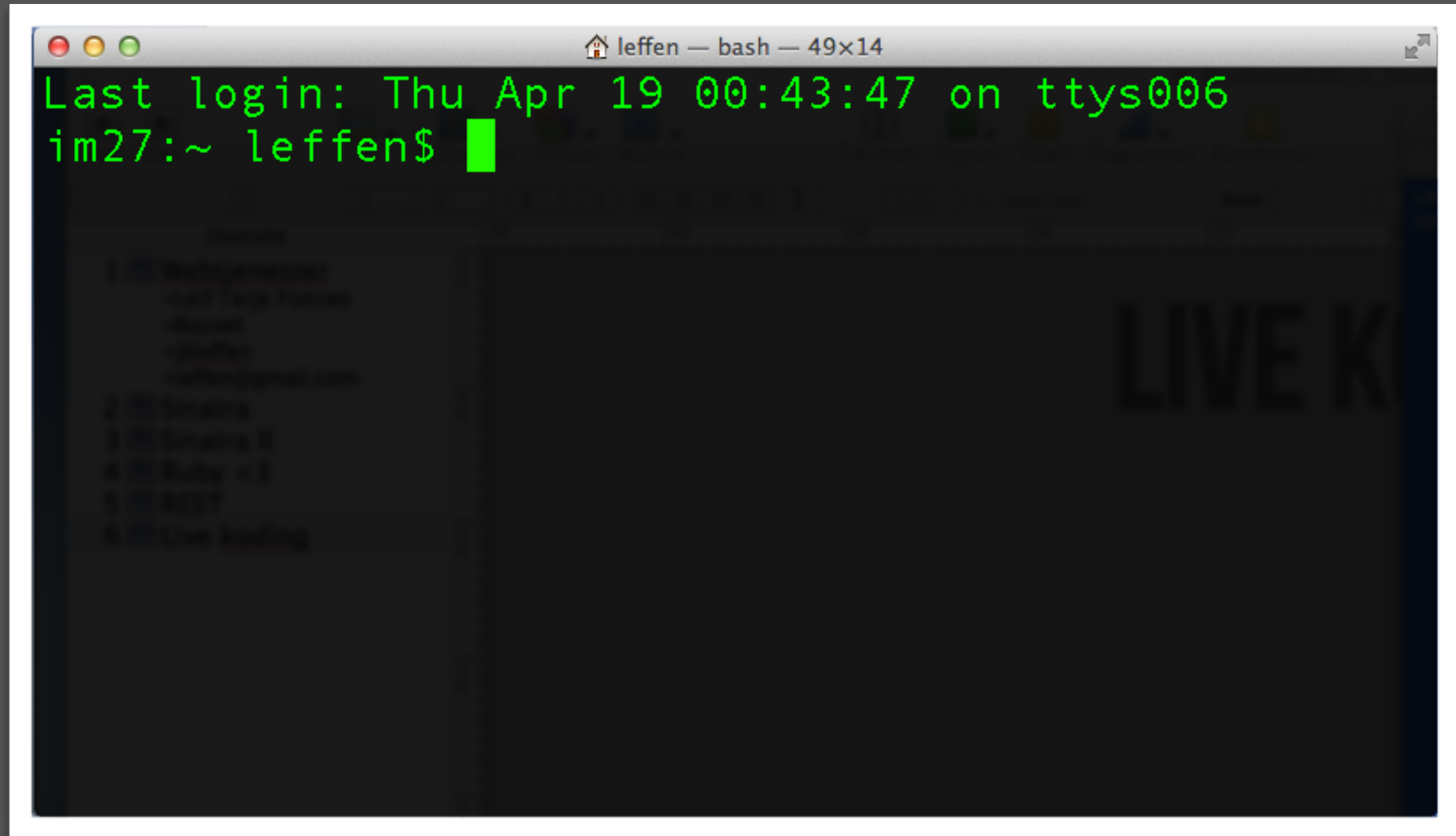

DELETE

```
delete '/todos/:id' do
  todo = Todo.get(params[:id])

  halt 400, "Ugyldig todo item spesifisert #{params[:id]}" unless todo
  todo.deleted = true

  unless todo.save!
    puts "Feil oppdatering av todoitem #{todo.id}"
    status 400
  end
end
```

KODING



A terminal window titled "leffen — bash — 49x14" with standard macOS window controls. The terminal output shows a green login message: "Last login: Thu Apr 19 00:43:47 on ttys006". Below this is the prompt "im27:~ leffen\$" followed by a green cursor. A faint, dark sidebar on the left contains a list of projects:

- 1. 100 Days of JavaScript
- 2. 100 Days of Python
- 3. 100 Days of Ruby
- 4. 100 Days of Rust
- 5. 100 Days of Swift
- 6. 100 Days of Kotlin

The main area of the terminal is dark, with the words "LIVE K" faintly visible in the background.

OPPSUMMERING

Installert Ruby

Installert Sinatra

Laget enkelt API

Produksjonssatt til heroku

Mer info på :

<http://www.ruby-lang.org/en/>

<http://www.sinatrarb.com/>

<http://datamapper.org/>