



Grundlagen der Web-Entwicklung

INF3172

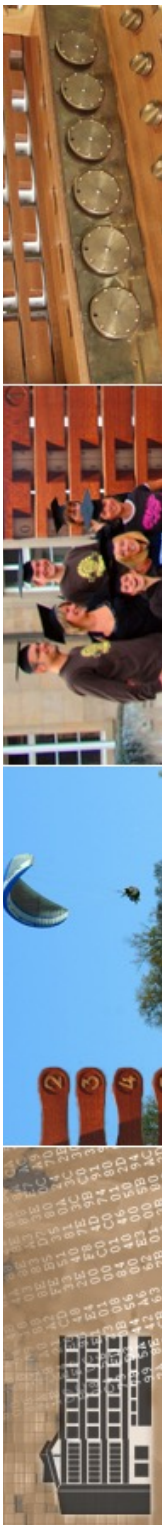
MVC-Frameworks:

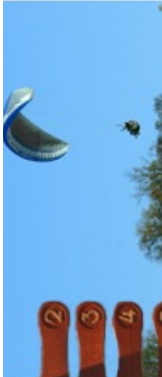
Ruby on Rails & CakePHP

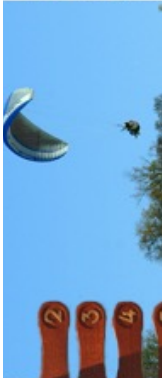
Thomas Walter

20.01.2022

Version 1.0







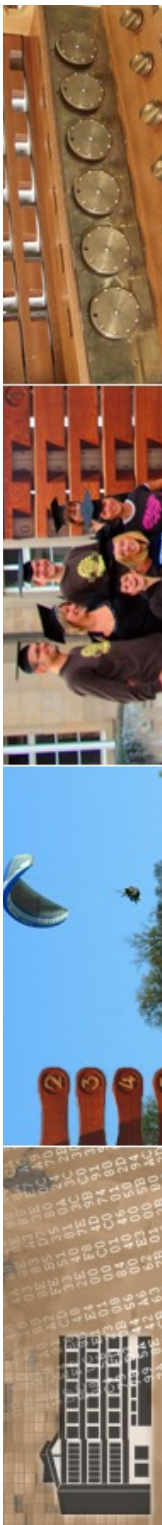


die Scriptsprache Ruby

- ein moderner Nachfolger von Perl
- sauber objektorientiert
- www.ruby-lang.org



Ruby
A Programmer's Best Friend





Ruby

DER BESTE FREUND EINES PROGRAMMIERERS

Google™ Benutzerdefinierte Suche

Suche



[Downloads](#) [Dokumentation](#) [Bibliotheken](#) [Community](#) [Neuigkeiten](#) [Sicherheit](#) [Über Ruby](#)

Ruby ist...

...eine dynamische, freie Programmiersprache, die sich einfach anwenden und produktiv einsetzen lässt. Sie hat eine elegante Syntax, die man leicht lesen und schreiben kann.



[Ruby herunterladen](#)

oder [Weiterlesen...](#)

```
# Ruby weiß, was du
# meinst, sogar wenn du
# versuchst, einem Array
# Mathestunden zu geben
cities = %w[ London
            Oslo
            Paris
            Amsterdam
            Berlin ]

visited = %w[Berlin Oslo]

puts "Ich muss noch " +
      "die folgenden " +
      "Orte besuchen:",
      cities - visited
```

Ruby 3.0.0 veröffentlicht

Wir freuen uns, die Veröffentlichung von Ruby 3.0.0 bekannt geben zu können. Seit 2015 haben wir an Ruby 3 gearbeitet, dessen Ziele sich so beschreiben lassen: Performanz, Nebenläufigkeit und Typisierung. Mit besonderem Blick auf die Performanz hatte Matz angekündigt: „Ruby 3 wird 3-mal so schnell sein wie Ruby 2“, ein Satz, der auch bekannt ist als [Ruby 3x3](#).

[Weiterlesen...](#)

Geschrieben von naruse am 25.12.2020

Ruby 3.0.0 RC1 veröffentlicht

Wir freuen uns, die Veröffentlichung von Ruby 3.0.0-rc1 bekannt geben zu können.

[Weiterlesen...](#)

Geschrieben von naruse am 20.12.2020

Der Einstieg ist einfach!

[Teste Ruby! \(im Browser\)](#)

[Ruby in 20 Minuten](#)

[Ruby für Umsteiger](#)

Entdecke eine neue Welt...

[Dokumentation](#)

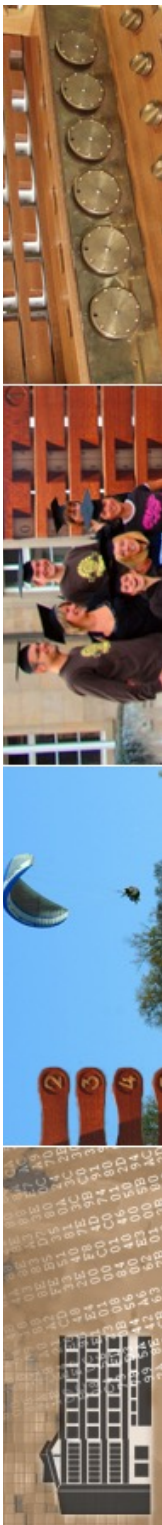
[Bibliotheken](#)

[Erfolgsgeschichten](#)

Beteilige dich an einer freundlichen und wachsenden Community.

ruby

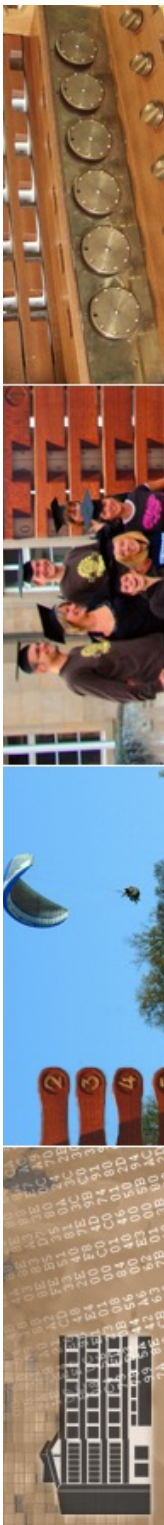
- entstanden durch Yukihiro Matsumoto („Mats“)
 - aktuell 3.0.0
 - 2.4.9 LTS veröffentlicht
 - lange Versionen 1.9.x
 - moderne Sprache
 - OO





die Prinzipien von Rails

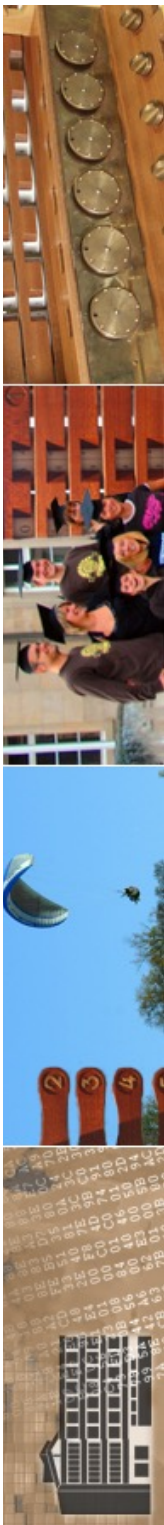
- Ruby on Rails (Rails)
 - Juli 2004: David Heinemeier Hansson
 - Implementiert MVC-Paradigma
 - fünf Module:
 - M: Active Record
 - V: Action Pack (Request- / Reponse-Behandlung)
 - Action-Mailer (Email)
 - Action Web-Service
 - Active Support (Ruby-Erweiterungen)





Prinzip

- „Konvention ersetzt Konfiguration“
 - anstelle aufwendiger Configs feste Konventionen, die Zusammenhänge definieren
 - Model-Klasse **Book** (Singular) bildet Tabelle **books** (Plural) ab
 - integriertes Mapping auf Controllermethoden





Scaffolding

- **Scaffolding** (Bauprinzip) erlaubt die Entwicklung von Web-Applikationen „On the fly“
 - Rails ideal für „Fast Prototyping“
- **CRUD**: Create, Read, Update, Delete aus Datenbank wird die Anwendung „on the fly“ Erzeugt





Webserverintegration

- Rails kommt mit eigenem Webserver (in Ruby geschrieben): WEBrick
 - zahlreiche andere auch möglich
- Produktionseinsatz:
 - Apache
 - mod_fastcgi sehr empfohlen
 - und möglichst noch mod_ruby





unterstützte DBMS

- momentan unterstützt Rails:
 - MySQL
 - PostgreSQL
 - DB2
 - Oracle
 - MS SQL Server

- wird Modul Active Record verwendet, muss eines dieser DBMS verwendet werden

- zugleich auch ein Problem, da nur wenige DBMS unterstützt werden





M V C

- Model: eines der unterstützten DBMS
- Controller: Instanz der ActionController-Klasse
- View: Klasse ActionView
 - HTML/XML/JavaScript/Binärdaten
 - Templates RHTML/RXML/RJS





Ressourcen und Dokumentation

- Hauptressource:
 - www.rubyonrails.org
 - www.rubyonrails.de

- Dokumentation:
 - <http://api.rubyonrails.org>





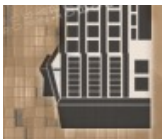
[Blog](#) [Guides](#) [API](#) [Forum](#) [Contribute on GitHub](#)

Imagine what you could build if you learned Ruby on Rails...

Learning to build a modern web application is daunting. Ruby on Rails makes it much easier and more fun. It includes **everything you need** to build fantastic applications, and **you can learn it** with the support of **our large, friendly community**.



Latest version — Rails 6.1.0 released December 9, 2020

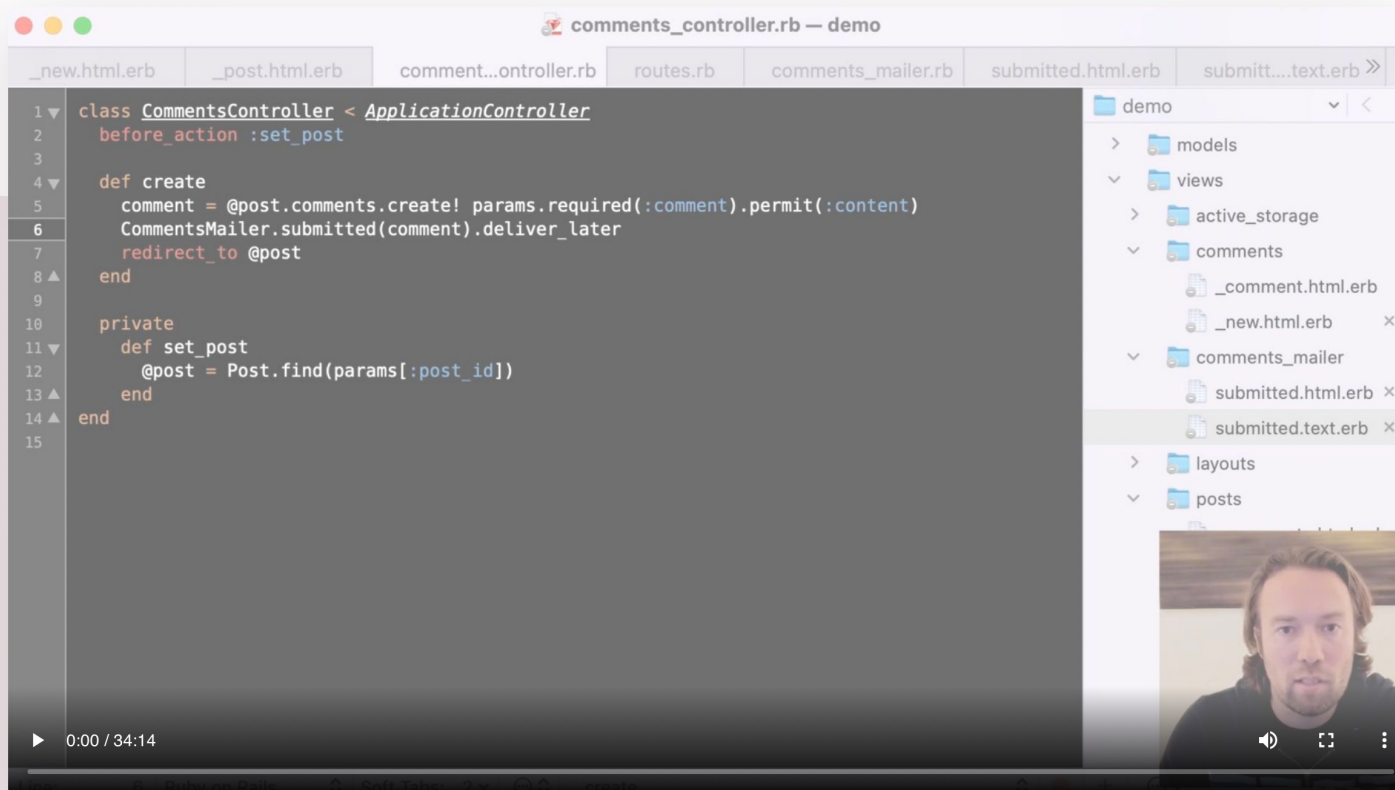




Compress the complexity of modern web apps.

Learn just what you need to get started, then keep leveling up as you go. **Ruby on Rails scales from HELLO WORLD to IPO.**

Rails 7.0.1 — released January 6, 2022



```
1 class CommentsController < ApplicationController
2   before_action :set_post
3
4   def create
5     comment = @post.comments.create! params.required(:comment).permit(:content)
6     CommentsMailer.submitted(comment).deliver_later
7     redirect_to @post
8   end
9
10  private
11  def set_post
12    @post = Post.find(params[:post_id])
13  end
14 end
15
```



Ruby on Rails Guides (v7.0.1)

These are the new guides for Rails 7.0 based on [v7.0.1](#). These guides are designed to make you immediately productive with Rails, and to help you understand how all of the pieces fit together.

The guides for earlier releases: [Rails 6.1](#), [Rails 6.0](#), [Rails 5.2](#), [Rails 5.1](#), [Rails 5.0](#), [Rails 4.2](#), [Rails 4.1](#), [Rails 4.0](#), [Rails 3.2](#), [Rails 3.1](#), [Rails 3.0](#), and [Rails 2.3](#).

! Rails Guides are also available for [Kindle](#).

! Guides marked with this icon are currently being worked on and will not be available in the Guides Index menu. While still useful, they may contain incomplete information and even errors. You can help by reviewing them and posting your comments and corrections.

Start Here

[Getting Started with Rails](#)

Everything you need to know to install Rails and create your first application.

Models

[Active Record Basics](#)

Active Record allows your models to interact with the application's database. This guide will get you started with Active Record models and persistence to the database.

[Active Record Migrations](#)

Migrations are a feature of Active Record that allows you to evolve your database schema over time. Rather than write schema modifications in pure SQL, migrations allow you to use a Ruby DSL to describe changes to your tables.

[Active Record Validations](#)

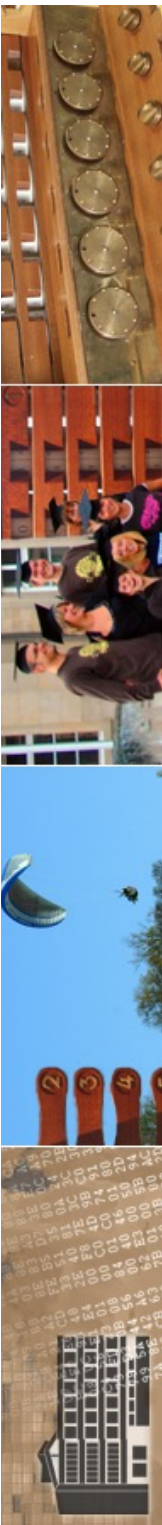
Validations are used to ensure that only valid data is saved into your database. This guide teaches you how to validate the state of objects before they go into the database, using Active Record's validations feature.

[Active Record Callbacks](#)

Callbacks make it possible to write code that will run whenever an object is created, updated, destroyed, etc. This guide teaches you how to hook into this object life cycle of Active Record objects.

[Active Record Associations](#)

In Active Record, an association is a connection between two Active Record models. This guide covers all the associations provided by Active Record.





Getting Started with Rails

This guide covers getting up and running with Ruby on Rails.

After reading this guide, you will know:

- ✔ **How to install Rails, create a new Rails application, and connect your application to a database.**
- ✔ **The general layout of a Rails application.**
- ✔ **The basic principles of MVC (Model, View, Controller) and RESTful design.**
- ✔ **How to quickly generate the starting pieces of a Rails application.**

1 Guide Assumptions

This guide is designed for beginners who want to get started with creating a Rails application from scratch. It does not assume that you have any prior experience with Rails.

Rails is a web application framework running on the Ruby programming language. If you have no prior experience with Ruby, you will find a very steep learning curve diving straight into Rails. There are several curated lists of online resources for learning Ruby:

- [Official Ruby Programming Language website](#)
- [List of Free Programming Books](#)

Be aware that some resources, while still excellent, cover older versions of Ruby, and may not include some syntax that you will see in day-to-day development with Rails.

2 What is Rails?

Rails is a web application development framework written in the Ruby programming language. It is designed to make programming web applications easier by making assumptions about what every developer needs to get started. It allows you to write less code while accomplishing more than many other languages and frameworks. Experienced Rails developers also report that it makes web application development more fun.

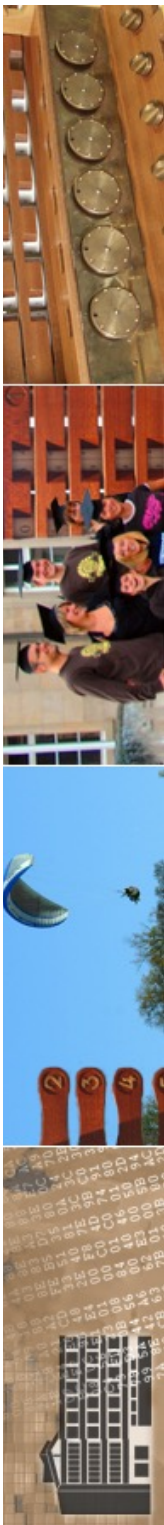
Rails is opinionated software. It makes the assumption that there is a "best" way to do things, and it's designed to encourage that way - and in some cases to discourage alternatives. If you learn "The Rails Way" you'll probably discover a tremendous increase in productivity. If you persist in bringing old habits from other languages to your Rails development, and trying to use patterns you learned elsewhere, you may have a less happy experience.

The Rails philosophy includes two major guiding principles:

- **Don't Repeat Yourself:** DRY is a principle of software development which states that "Every piece of knowledge must have a single, unambiguous, authoritative representation within a system". By not writing the same information over and over again, our code is more maintainable, more extensible, and less buggy.
- **Convention Over Configuration:** Rails has opinions about the best way to do many things in a web application, and defaults to this set of conventions, rather than require that you specify minutiae through endless configuration files.

Chapters

1. [Guide Assumptions](#)
2. [What is Rails?](#)
3. [Creating a New Rails Project](#)
 - [Installing Rails](#)
 - [Creating the Blog Application](#)
4. [Hello, Rails!](#)
 - [Starting up the Web Server](#)
 - [Say "Hello", Rails](#)
 - [Setting the Application Home Page](#)
5. [Autoloading](#)
6. [MVC and You](#)
 - [Generating a Model](#)
 - [Database Migrations](#)
 - [Using a Model to Interact with the Database](#)
 - [Showing a List of Articles](#)
7. [CRUDit Where CRUDit Is Due](#)
 - [Showing a Single Article](#)
 - [Resourceful Routing](#)
 - [Creating a New Article](#)
 - [Updating an Article](#)
 - [Deleting an Article](#)
8. [Adding a Second Model](#)
 - [Generating a Model](#)
 - [Associating Models](#)
 - [Adding a Route for Comments](#)
 - [Generating a Controller](#)
9. [Refactoring](#)
 - [Rendering Partial Collections](#)
 - [Rendering a Partial Form](#)
 - [Using Concerns](#)
10. [Deleting Comments](#)
 - [Deleting Associated Objects](#)
11. [Security](#)
 - [Basic Authentication](#)
 - [Other Security Considerations](#)
12. [What's Next?](#)
13. [Configuration Gotchas](#)





Installation

- zu Installieren sind:
 - aktuelle Ruby-Version
 - es wird mindestens Ruby 2.5.0 benötigt´
 - `ruby --version`

```
thomas@PetitMouton-2 =>
thomas@PetitMouton-2 => ruby --version
ruby 2.6.3p62 (2019-04-16 revision 67580) [universal.x86_64-darwin20]
thomas@PetitMouton-2 =>
thomas@PetitMouton-2 =>
```

- `ruby gems`
 - dies ist der ruby-rails package manager
- das eigentliche rails-Paket
 - Installation über gems
<https://rubygems.org/>



Installation

- was wird noch benötigt:
 - ein Datenbankmanagementsystem
 - Default ist SQLite3
 - Node.js und Yarn





🔍 Search packages (i.e. babel, webpack, react...)

Getting Started

Yarn is a package manager for your code. It allows you to use and share (e.g. JavaScript) code with other developers from around the world. Yarn does this quickly, securely, and reliably so you don't ever have to worry.

Getting Started
[Installation](#)
[Usage](#)

Yarn allows you to use other developers' solutions to different problems, making it easier for you to develop your software. If you have problems, you can report issues or contribute back, and when the problem is fixed, you can use Yarn to keep it all up to date.

Code is shared through something called a **package** (sometimes referred to as a **module**). A package contains all the code being shared as well as a `package.json` file which describes the package.





Die eigentliche Rails-Installation

- die eigentliche Installation läuft über gems:
 - `gem install rails --include-dependencies`
- damit alles automatisiert, „frisch“ aus dem Netz

```

c:\ DOS-Shell - gem install rails --include-dependencies
d:\users\thomas>
d:\users\thomas>
d:\users\thomas>gem install rails --include-dependencies
Bulk updating Gem source index for: http://gems.rubyforge.org
Successfully installed rails-1.1.6
Successfully installed rake-0.7.1
Successfully installed activesupport-1.3.1
Successfully installed activerecord-1.14.4
Successfully installed actionpack-1.12.5
Successfully installed actionmailer-1.2.5
Successfully installed actionwebservice-1.1.6
Installing ri documentation for rake-0.7.1...
Installing ri documentation for activesupport-1.3.1...
Installing ri documentation for activerecord-1.14.4...
Installing ri documentation for actionpack-1.12.5...
    
```



Erzeugen einer Rails-Applikation

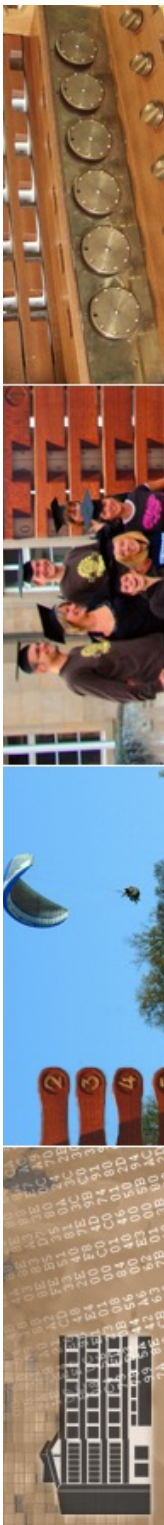
- nach der Installation steht ausführbares Script `rails` zur Verfügung
- damit Anlegen einer Rails-Web-Applikation:
 - `rails <path_to_appl>`
 - etwa: `rails d:\WWW\buecher`





Rails-Verzeichnis der Anwendung

- rails erzeugt das entsprechende Verzeichnis mit zahlreichen Unterordnern, etwa:
 - app: die eigentliche Anwendung, untergliedert in Unterordner models/views/controllers/helpers
 - config: Konfiguration der Datenbank
 - log
 - public: Apache htdocs





Starten der Anwendung

- A: mit dem rails-eigenen Webserver WEBrick:
 - im Verzeichnis der Anwendung

```
ruby script/server
```
- B: mit Apache:
 - Konfiguration des Apache



Welcome aboard
You're riding the Rails!

[About your application's environment](#)

Getting started
Here's how to get rolling:

- 1. Create your databases and edit `config/database.yml`**
Rails needs to know your login and password.
- 2. Use `script/generate` to create your models and controllers**
To see all available options, run it without parameters.
- 3. Set up a default route and remove or rename this file**
Routes are setup in `config/routes.rb`.

Join the community

- [Ruby on Rails](#)
- [Official weblog](#)
- [Mailing lists](#)
- [IRC channel](#)
- [Wiki](#)
- [Bug tracker](#)

Browse the documentation

- [Rails API](#)
- [Ruby standard library](#)
- [Ruby core](#)

Fertig





Datenbank

- eine Rails-Anwendung basiert auf einer Datenbank
- Generierung von Anwendungen aus der Datenbank





Anpassen der Konfiguration

- es ist nur die Datenbank-Anbindung zu konfigurieren
- in Unterordner conf, Datei database.yml
- danach Neustart (!) des Webservers





```
1 # MySQL (default setup). Versions 4.1 and 5.0 are recommended.
2 #
3 # Install the MySQL driver:
4 #   gem install mysql
5 # On MacOS X:
6 #   gem install mysql -- --include=/usr/local/lib
7 # On Windows:
8 #   There is no gem for Windows. Install mysql.so from RubyForApache.
9 #   http://rubyforge.org/projects/rubyforapache
10 #
11 # And be sure to use new-style password hashing:
12 #   http://dev.mysql.com/doc/refman/5.0/en/old-client.html
13 development:
14   adapter: mysql
15   database: rails
16   username: thomas
17   password:
18   host: localhost
19
20 # Warning: The database defined as 'test' will be erased and
21 # re-generated from your development database when you run 'rake'.
22 # Do not set this db to the same as development or production.
23 test:
24   adapter: mysql
25   database: test
26   username: thomas
27   password:
28   host: localhost
29
30 production:
31   adapter: mysql
32   database: rails
33   username: thomas
34   password:
35   host: localhost
36
```

Normal text file | nb char : 899 | Ln : 1 Col : 1 Sel : 0 | UNIX | ANSI | INS





Erzeugen von M und C

- rails erlaubt ein standardisiertes Erzeugen von Model und Controller über **Generator**
- **Metascript** scripts/generate





```

C:\ DOS-Shell
D:\www\buecher>
D:\www\buecher>ruby script\generate
Usage: script/generate generator [options] [args]

General Options:
  -p, --pretend          Run but do not make any changes.
  -f, --force            Overwrite files that already exist.
  -s, --skip             Skip files that already exist.
  -q, --quiet           Suppress normal output.
  -t, --backtrace       Debugging: show backtrace on errors.
  -h, --help            Show this help message.
  -c, --svn             Modify files with subversion. (Note: svn must be in path)

Installed Generators
  Builtin: controller, integration_test, mailer, migration, model, plugin, scaffold, session_migration, web_service

More are available at http://rubyonrails.org/show/Generators
  1. Download, for example, login_generator.zip
  2. Unzip to directory d:\users\thomas\.rails/generators/login
     to use the generator with all your Rails apps
     or to D:/www/buecher/generators/login
     to use with this app only.
  3. Run generate with no arguments for usage information
     script/generate login

Generator gems are also available:
  1. gem search -r generator
  2. gem install login_generator
  3. script/generate login

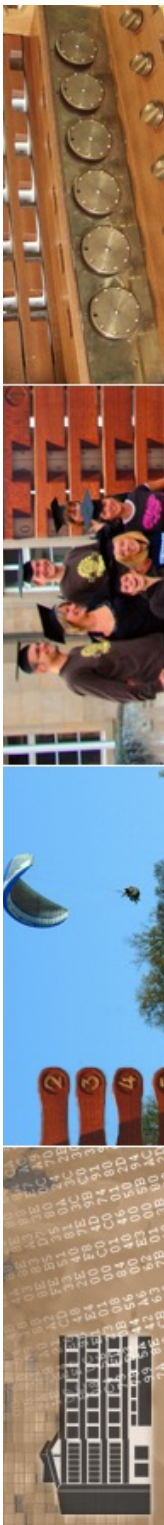
D:\www\buecher>
D:\www\buecher>

```



Controller

- Controller verarbeitet Request
- URL ruft Methode einer Controller-Klasse auf
- Generator:
 - `ruby script/generator controller <Name>`
- Ruby-Klasse, abgeleitet von ApplicationController
- Mapping über `/Name`





Model

- Generierung des Model:
 - zur Datenbanktabelle „users“ gehört das Model „User“
 - „Rails is smart about English pluralization rules, so Company maps to companies, Person maps to people, and so forth.“
 - Erzeugung `ruby script/generate model User`
 - setzt DB-Config und Existenz voraus

```

C:\ DOS-Shell
D:\www\buecher>
D:\www\buecher>ruby script\generate model User
exists app/models/
exists test/unit/
exists test/fixtures/
create app/models/user.rb
create test/unit/user_test.rb
create test/fixtures/users.yml
create db/migrate
create db/migrate/001_create_users.rb
D:\www\buecher>
    
```




Model

- der Generator erzeugt ein Skeleton einer Ruby-Klasse

The screenshot shows a Notepad++ window titled "Notepad++ - D:\WWW\buecher\app\models\user.rb". The menu bar includes File, Edit, Search, View, Format, Language, Settings, Macro, Run, and Plugins. The toolbar contains various editing and development icons. The tab bar shows several files: README, buecher_kompakt.sql, database.yml, test_controller.rb, and user.rb. The main text area contains the following code:

```

1  class User < ActiveRecord::Base
2    end
3

```

The status bar at the bottom indicates "Ruby file", "nb char : 36", "Ln : 1 Col : 1 Sel : 0", "UNIX", "ANSI", and "INS".



Erzeugung von C und M zusammen

- in den neuesten Rail-Versionen können C und M zusammen erzeugt werden:
 - `ruby script/generate scaffold User`





Standard-Controller für Zugriff

- auf Model soll über Standard-Controller für „CRUD“ zugegriffen werden:
- Create / Read / Update / Delete

Scaffolding - Mozilla Firefox

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

http://127.0.0.1:3000/user/new

Umgebungsvariablen in php Ruby on Rails: Welcome aboard Scaffolding

New user

Nname

Vname

[Back](#)

Fertig



Mögliche Zugriffe

- **new**
 - **list**
 - **delete**
 - **update**
 - **show**
-
- **alles Methoden in Standard-Controller**

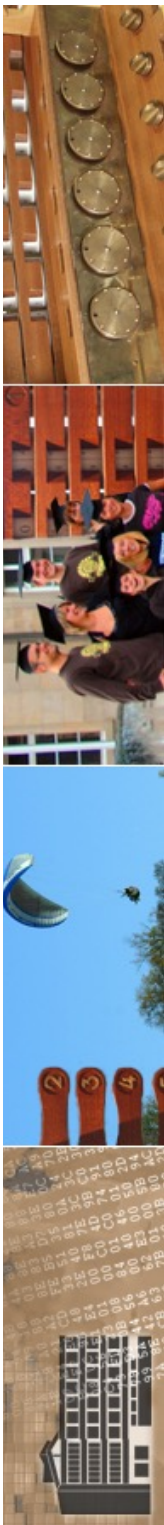




eigene Methoden

- die generierten Methoden (wie `list`) können überschrieben werden
- dazu muss zunächst nur eine Methode definiert werden

```
def list
  ...code...
end
```





die View: Rails-Templates

- Template enthält im Kern HTML, bereichert um Ruby-Elemente

- ruby-Code in „ASP-Tags“

```
<% ruby %>
```

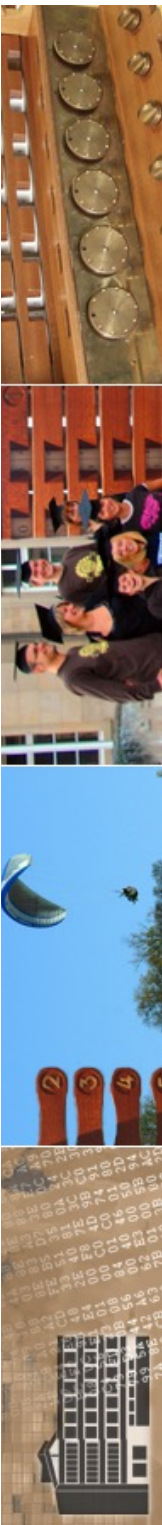
oder

```
<%= rubyVariable %>
```




Mapping

- das zentrale Mapping wird durch die Datei
 - `config/routes.rb`
- festgelegt
- Standard-Situation:
 - `controller-Name/Methoden-Name/ID`

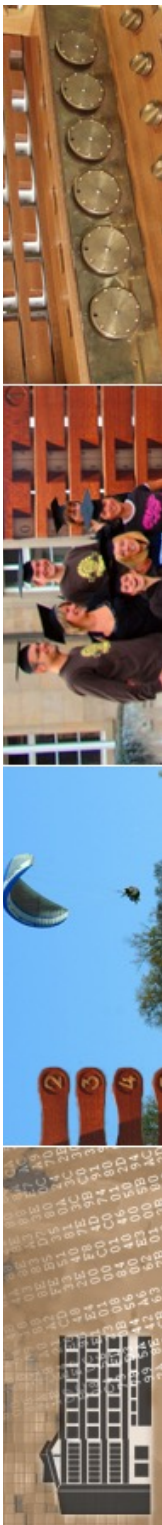




Zusammenfassung

das Rails-Framework

- bietet ein „fast-development“ → Prototyping
- direkte Anpassung an das Datenmodell in DB
- MVC automatisch und zwingend
- mit Template-Engine
- automatisches und bequemes Mapping auf Controllermethoden
- minimale Konfiguration





New CakePHP 4.3 Strawberry.

Cleaner. Faster.
Tasty as usual.

- Install 4.3
- Docs
- API



What's new in version 4.3

The migration guide has a complete list of what's new in 4.3.0. We recommend you give that page a read when upgrading. A few highlights from 4.3.0 are:

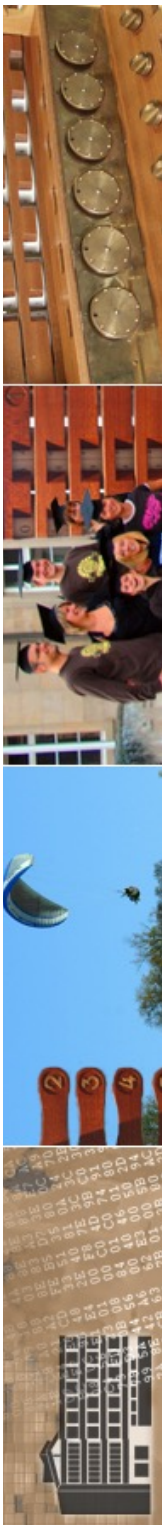
- New fixture system
- TestSuite\HttpMockTrait was added
- LocatorAwareTrait::fetchTable() was added
- Controller::middleware() was added
- CspMiddleware can now transparently add nonce- based policies
- JSON log formatting was added

While CakePHP 4 contains a number of breaking changes we have prepared an exhaustive migration guide covering all the deprecated and removed features as well as highlighting the shiny new features.

[Learn more](#)

Business Solutions

CakeDC, the commercial entity behind the CakePHP framework, was established by Larry Masters, the founder of CakePHP. CakeDC offers CakePHP development, consultancy, CakePHP training and code review Services. From





Grundprinzipien von CakePHP

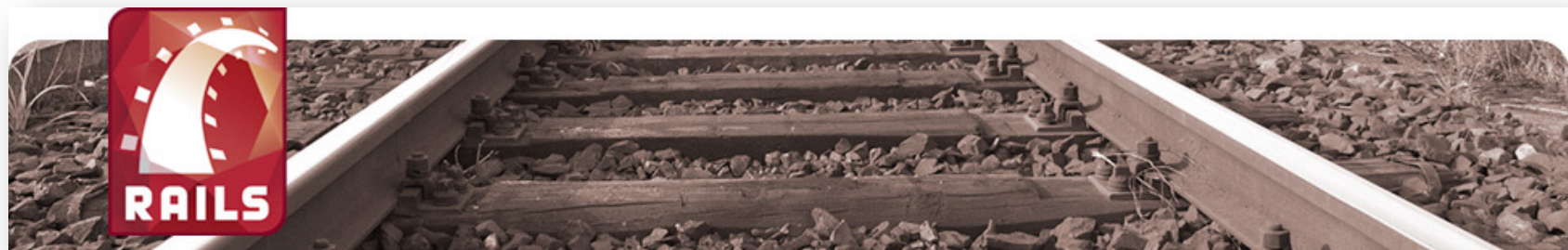
- Grundprinzipien von CakePHP sind von Ruby on Rails übernommen
 - **DRY**: don't repeat yourself
Vermeidung von Redundanzen
 - **Rapid Development**
kurze Planungsphase, schnell ausführbarer Code
 - **CRUD**: create, read, update, and delete
direkte Erstellung dieser vier DB-Operationen
 - **Convention over Configuration**
Konventionen ersetzen Konfigurationen





die Idee von CakePHP

- CakePHP ist stark an Ruby on Rails angelehnt
 - "Rapid Development"





CakePHP Komponenten

- CakePHP verfügt über typische Eigenschaften und Komponenten:
 - MVC in CakePHP
 - Plugins
 - Routes und Dispatcher
 - CakePHP Konsole

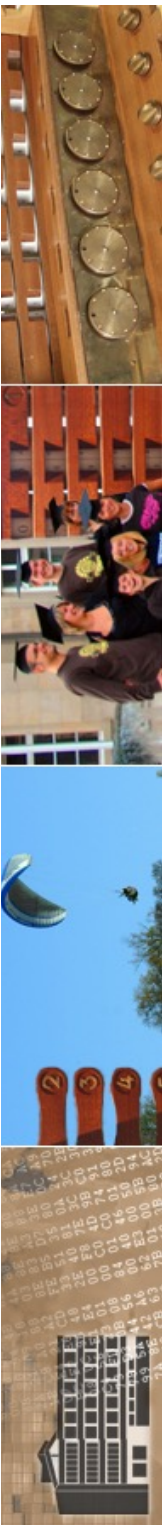




Entwicklung einer CakePHP-Anwendung

- Schritte zur CakePHP-Applikation
 - Installation CakePHP
 - Datenbankschema
 - Model generieren
 - Controller erstellen
 - Views erstellen
 - Anwendung optimieren

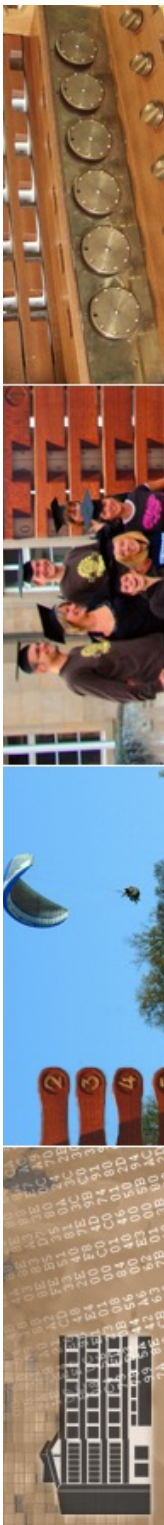
- wichtig: Rolle der Datenbank/des Models





Installation

- außer den Framework-Sourcen werden benötigt:
 - Web-Server (Apache 2.x)
 - aktuelles PHP-Modul
 - DBMS (MySQL, auch Postgres, SQLite, Oracle, MS SQL, ...)
- CakePHP: Sourcen-Archiv von <http://cakephp.org>
 - Entpacken in htdocs
- wichtig: Apache-Direktive **AllowOverride all**
 - weil Konfiguration in .htaccess-Dateien

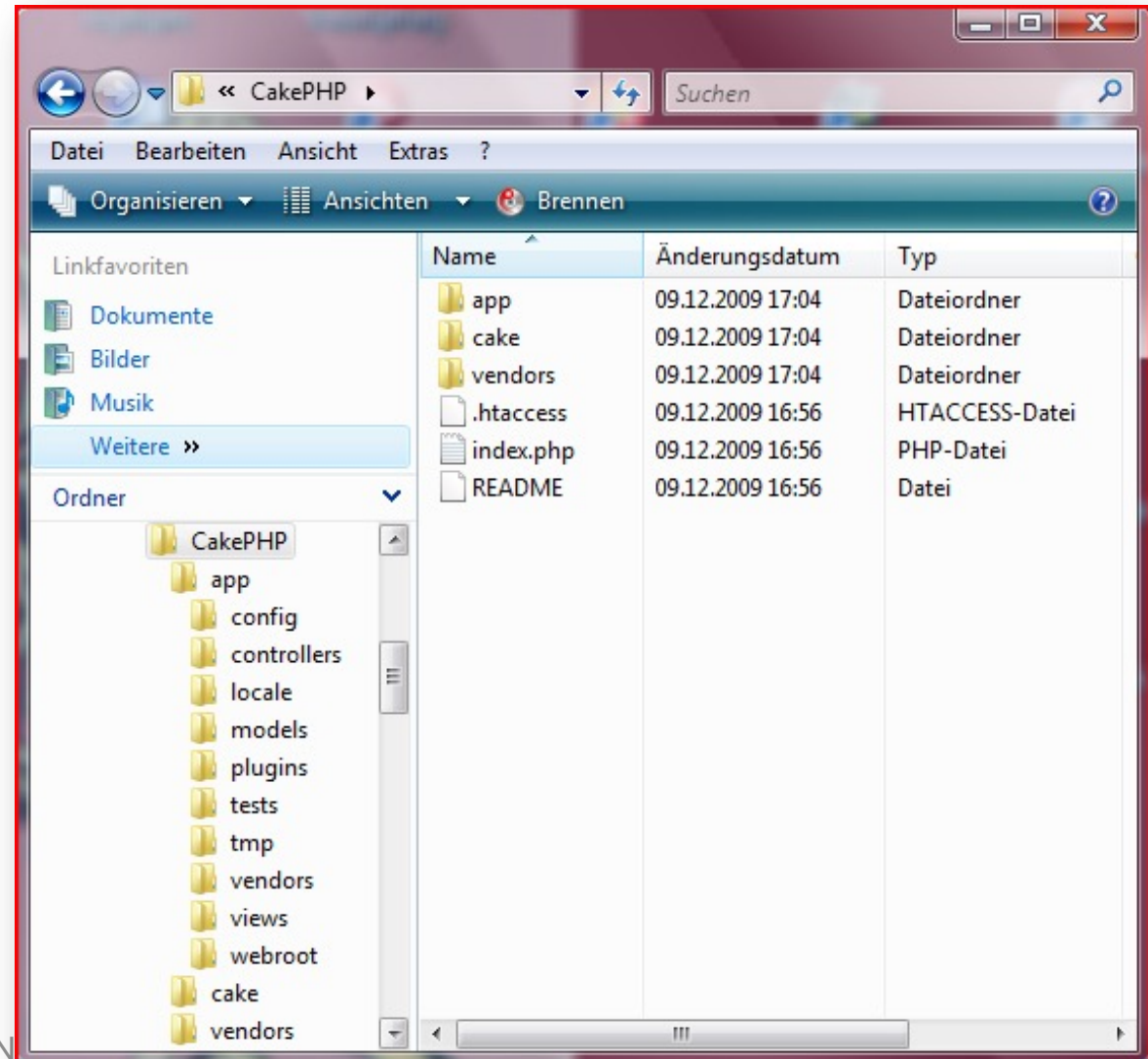




Verzeichnisstruktur

nach Entpacken
typische
Verzeichnis-
struktur

- Ordner
app
mit wichtigen
Unterordnern





Unterordner des Ordners app

- config
 - Konfigurationsdateien, etwa DB-Paramater
- controllers
 - Verzeichnis der Controller
- locale: Internationalisierung
- models
- plugins
 - CakePHP-Plugin-Packages
- webroot
 - Documentroot
- views





die Datenbankkonfiguration

- im Unterordner `app/conf` liegt die Datei `database.php`
- diese enthält die Datenbankparameter





```

D:\www\CakePHP\app\config\database.php - Notepad++
Datei Bearbeiten Suchen Ansicht Format Sprachen Einstellungen Makro Ausführen TextFX Erweiterungen
Fenster ?
index.php IndexController.php BeispielController.php index - Kopie.php index.phtml ErrorController.php Db
79 class DATABASE_CONFIG {
80
81     var $default = array(
82         'driver' => 'mysql',
83         'persistent' => false,
84         'host' => 'localhost',
85         'login' => 'thomas',
86         'password' => '',
87         'database' => 'webkompendium',
88         'prefix' => '',
89     );
90
nb char : 3312  nb line : 101  Ln : 78  Col : 2  Sel : 0  UNIX  ANSI  INS
    
```





CakePHP: the rapid devel... x +

← → ↻ ☆ http://127.0.0.1:81/cakePHP/ ▶ 📄 🔧

CakePHP: the rapid development php framework

Release Notes for CakePHP 1.2.4.8284.

[Read the changelog](#)

Notice (1024): Please change the value of 'Security.salt' in app/config/core.php to a salt value

Your tmp directory is writable.

The *FileEngine* is being used for caching. To change the config edit APP/config/core.php

Your database configuration file is present.

Cake is able to connect to the database.

Editing this Page

To change the content of this page, create: APP/views/pages/home.ctp.
 To change its layout, create: APP/views/layouts/default.ctp.
 You can also add some CSS styles for your pages at: APP/webroot/css.

Getting Started

[new CakePHP 1.2 Docs](#)

[The 15 min Blog Tutorial](#)





die Cake-Konsole

```

C:\> DOS Shell
Welcome to CakePHP v1.2.4.8284 Console
-----
Current Paths:
  -app: console
  -working: D:\www\CakePHP\cake\console
  -root: D:\www\CakePHP\cake
  -core: D:\www\CakePHP

Changing Paths:
your working path should be the same as your application path
to change your path use the '-app' param.
Example: -app relative/path/to/myapp or -app /absolute/path/to/myapp

Available Shells:

D:\www\CakePHP\vendors\shells:
  - none

CORE\console\libs:
  acl
  api
  bake
  console
  i18n
  schema
  testsuite

To run a command, type 'cake shell_name [args]'
To get help on a specific command, type 'cake shell_name help'
  
```



Einsatz der Konsole

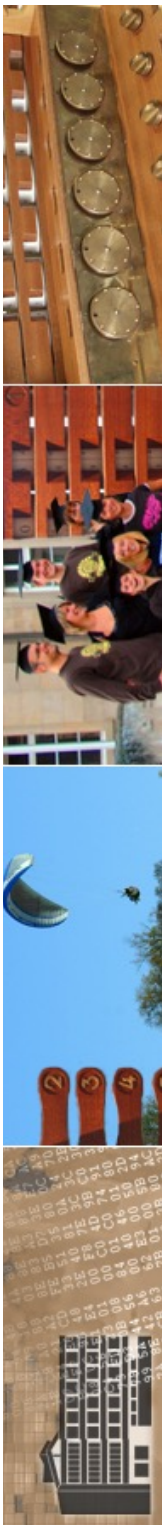
- die CakePHP-Konsole dient
 - zum Testen
 - zum Generieren von Code





erstellen einer Applikation

- Ausgangspunkt ist eine Datenbanktabelle
 - diese definiert Model
 - `mysql> create table students(mtknr integer not null, nname varchar(64) not null, vname varchar(64), fach varchar(64));`
 - Query OK, 0 rows affected (0.06 sec)
 - `mysql> insert into students (mtknr, nname, vname, fach) values (1, 'Chagall', 'Marc', 'Medieninformatik');`
 - Query OK, 1 row affected (0.01 sec)





die Model-Klasse

- die Model-Klasse nimmt Bezug zur bestehenden Datenbanktabelle

```

1  <?php
2      // Grundlagen der Web-Entwicklung
3      // CakePHP: einfache Model-Klasse
4
5  class Student extends AppModel {
6      var $name="Student";
7  } // class
8  ?>
    
```

The screenshot shows a Notepad++ window with the following details:

- File name: D:\www\CakePHP\app\models\student.php
- Menu items: Datei, Bearbeiten, Suchen, Ansicht, Format, Sprachen, Einstellungen, Makro, Ausführen, TextFX, Erweiterungen, Fenster, ?
- Toolbars: Standard Windows-style toolbars for file operations and editing.
- Tab bar: Shows several open files including DbBeispielController.php, php.ini, database.php, student.php (active), and students_controller.php.
- Code editor: Contains the PHP code for the Student class as shown above.
- Status bar: nb char:152, nb | Ln:1 Col:1 Sel:0, UNIX, ANSI, INS.



die Controller-Klasse

minimale Controller-Klasse

```

1 <?php
2 // Grundlagen der Web-Entwicklung
3 // CakePHP: einfache Controller-Klasse
4
5 class StudentsController extends ApplicationController {
6     var $name='Students';
7     var $scaffold;
8 } // class
9 ?>
    
```



Funktionalität dieser Anwendung

- bereits mit diesem geringen Aufwand hat die Anwendung eine umfassende Funktionalität
- Hintergrund: Scaffolding: CRUD-Funktionalität
 - durch Flag-Variable `$scaffold` im Controller aktiviert
 - Methoden: `index`, `view`, `add`, `edit`, `delete`





CakePHP: the rapid development php framework

Students

Page 1 of 1, showing 1 records out of 1 total, starting on record 1, ending on 1

Id	Nname	Vname	Fach	Actions
1	Chagall	Marc	Medieninformatik	View Edit Delete

<< previous | next >>

[New Student](#)





Google

CakePHP: the rapid dev... x CakePHP: the rapid dev... x

← → ↻ ☆ http://127.0.0.1:83/students/edit/1 ▶ 📄 🔧

CakePHP: the rapid development php framework

Edit Student

Nname

Vname

Fach

[Delete](#) [List Students](#)

CakePHP: the rapid devel... x CakePHP: the rapid devel... x

← → ↻ ☆ http://127.0.0.1:83/students/view/1 ▶ 📄 🔧

CakePHP: the rapid development php framework

View Student

Id	1
Nname	Chagall
Vname	Marc
Fach	Medieninformatik

[Edit Student](#) [Delete Student](#) [List Students](#)



Konfiguration

- im Unterordner `app/config` befinden sich die Konfigurationsdateien des Frameworks
- zentrale Bedeutung
 - `core.php` : Hauptkonfiguration
 - `database.php` : Datenbankzugriff
 - `routes.php` : Routing



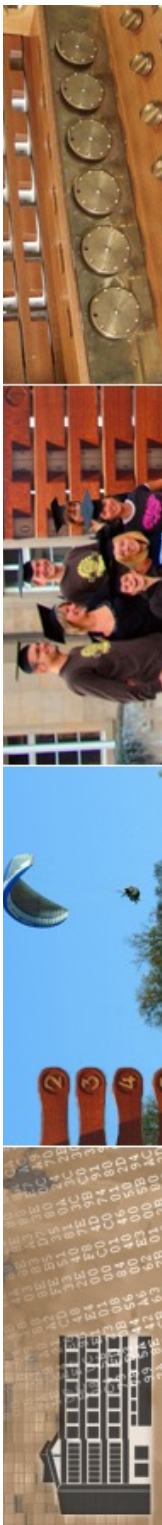


der Controller

- natürlich auch möglich: direktes Implementieren der Methoden *ohne* Scaffolding
- Werteübergabe: Prinzipaufbau der URL

`http://domaine/controller/action/parameter1/parameter2`

– **REST**: Representational State Transfer



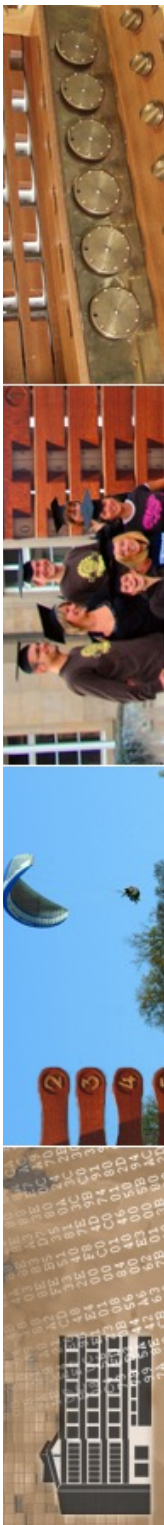


einfache Methode

- Ergänzung einer einfachen Methode:

```
function index() {
    $students = $this->Student->find('all',
        array('order' => 'created DESC'));

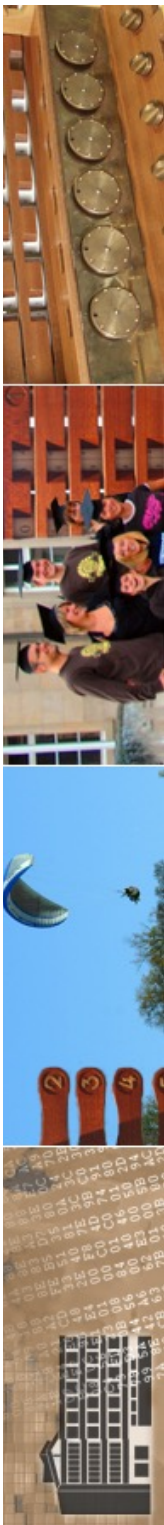
    $this->set('students', $students);
}
```





Konventionen

- CakePHP verwendet vielfältig Konventionen
 - Dateinamen: Kleinbuchstaben, Worttrennung durch _
 - Model und DB-Tabelle: gleiche Bezeichnung, Model im Singular, DB-Tabelle im Plural
 - students ↔ Student
 - our_students ↔ OurStudent





View

- Template-Engine: HTML-Dateien mit PHP-Code
 - Dateien `.ctp` : Cake Templates
 - Konvention:
Template zu Methode view in Controller
StudentsController:

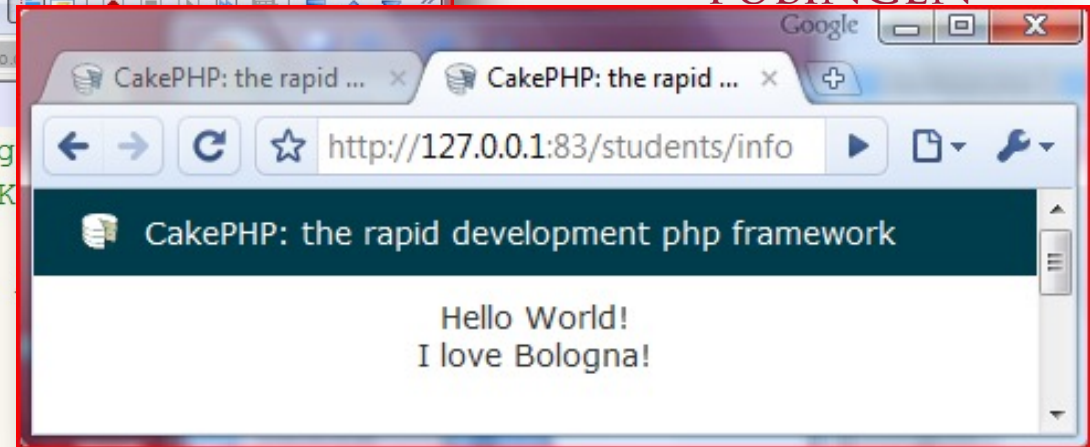
`.../views/students/view.ctp`





```
D:\www\CakePHP\app\controllers\students_controller.php - Notepad++
Datei Bearbeiten Suchen Ansicht Format Sprachen Einstellungen Makro Ausführen TextFX Erweiterungen Fenster ? X
database.php student.php htaccess index.php students_controller.php info.
1 <?php
2 // Grundlagen der Web-Entwicklung
3 // CakePHP: einfache Controller-K
4
5 class StudentsController extends
6
7     var $name="Students";
8     var $scaffold;
9     var $message;
10
11 function info() {
12     //$message = "Hallo Marmels!";
13     $this->set('message','I love Bologna!');
14 } // function
15
16 } // class
17 ?>
```

PHP Hyp: nb char: 347 nb line: 17 Ln: 1 Col: 1 Sel: 0



```
D:\www\CakePHP\app\views\students\info.ctp - Notepad++
Datei Bearbeiten Suchen Ansicht Format Sprachen Einstellungen Makro Ausführen TextFX
Erweiterungen Fenster ? X
database.php student.php htaccess index.php students_controller.php info.ctp
1 <center>
2     <?php
3         echo "Hello World!<BR />";
4         echo $message;
5     ?>
6 </center>
```

nb char: 79 nb line: 6 Ln: 1 Col: 1 Sel: 0 UNIX ANSI INS





Meta-Templates

- das Template enthält "nur den body"
- Layouts: Rahmen
- abgelegt in `.../cake/libs/view/layouts`
- Standard ist `default.ctp`





```

D:\www\CakePHP\cake\libs\view\layouts\default.ctp - Notepad++
Datei Bearbeiten Suchen Ansicht Format Sprachen Einstellungen Makro Ausführen TextFX Erweiterungen Fenster ?
database.php student.php students_controller.php .htaccess index.php info.ctp core.php httpd-vhosts.conf default.ctp
25 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w
26 <html xmlns="http://www.w3.org/1999/xhtml">
27 <head>
28     <?php echo $html->charset(); ?>
29     <title>
30         <?php __('CakePHP: the rapid development php framework:'); ?>
31         <?php echo $title_for_layout; ?>
32     </title>
33     <?php
34         echo $html->meta('icon');
35
36         echo $html->css('cake.generic');
37
38         echo $scripts_for_layout;
39     ?>
40 </head>
41 <body>
42     <div id="container">
43         <div id="header">
44             <h1><?php echo $html->link(__('CakePHP: the rapid development ph
45         </div>
46     <div id="content">

```

Hyper Text Markup Language file

nb char: 1872 nb line: 64

Ln:1 Col:1 Sel:0

UNIX

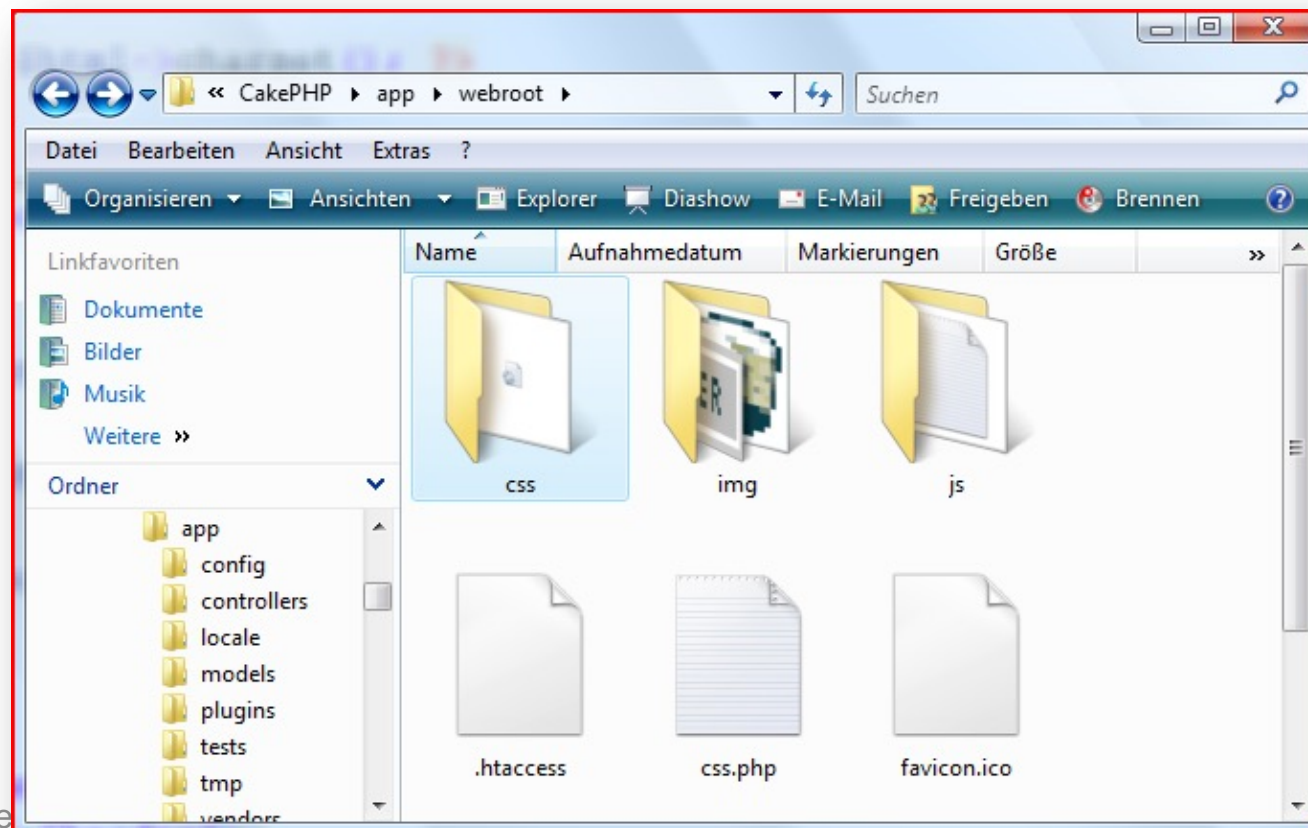
ANSI

INS



Ordner webroot

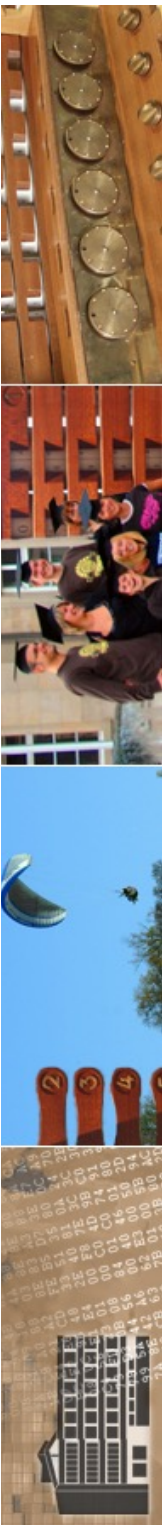
- Standard-Ziel aller Anfragen ist defaultmäßig der Ordner `app/webroot`
 - dort entsprechende Unterordner

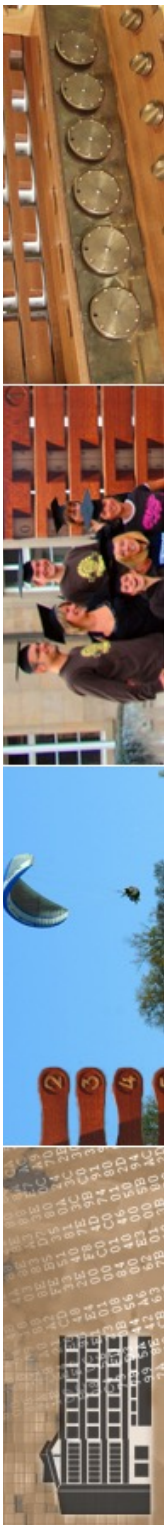




zahlreiche Möglichkeiten

- CakePHP bietet zahlreiche Möglichkeiten, die View zu erstellen
 - Helper-Klassen: Kapseln Code in Views und Layouts, der in mehreren Ansichten verwendet wird: Vermeidung von doppeltem Code
 - Steuerung über `$html`, etwa `$html->css (...)`
 - **JavaScript und Ajax**
 - ...u.v.m. ...







...und nun...

- wir haben einen Klassiker unter den modernen Frameworks kennen gelernt:
Ruby On Rails
- und mit CakePHP die Variante „in PHP“
- als nächstes: (Web-Services)
...hängt von den Prüfungsterminen ab...

