



# Cheetah

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# Project Vision

- Webapplication to improve learning
- Students should be able to upload and write test from their memories or any other source, so that the following students can learn from those tests
- Tests are categorized by university, course and lecturer
- Project Cheetah => Cheater

# Functionality

- User Login
- Ability for users to add universities, courses and lecturers
- Upload and view of pictures and PDFs
- Create text files directly in the application
- Paint function
- Search function
- Comment function
- Report of abuse function
- Camera integration for smartphones



# Team Roles

- Project Manager - Sara
- Tool Specialist - Damian, Sara
- Implementer - Damian
- Tester/Test Designer - Lior
- Designer - Damian, Lior and Sara

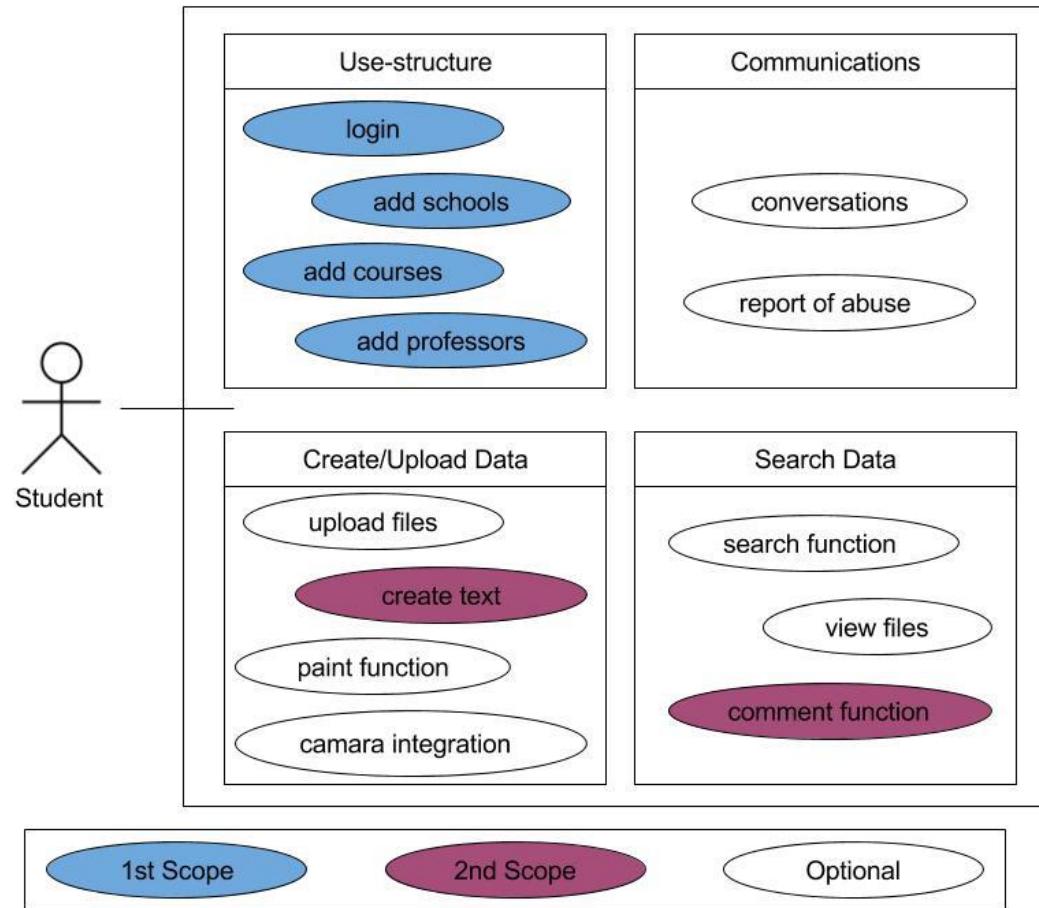


# Software Requirement Specification

- The first specification for the project
  - what the project should include
  - get better view what the client wants/needs
  - show the client what we understood
  - our scope

# Software Requirement Specification

## Overall Use Case Diagram





# Software & tools

- Ruby with the Ruby on Rails Framework
- Rubymine as IDE
- MySQL Database
- Github as Version Control
- Jira - Sprints
- MS Project - Long term planning
- MS Visio
- Codacy for Metrics
- Travis for Testing



# Environment

- Front End
  - Webbrowser
- Back End
  - Ruby on Rails
  - MySQL Database
- For now all installed in a Virtual Machine



# Use Cases

- Activity Diagram with MS Visio
  - easy to use
  - has the right shapes for activity diagram
  - offline usage possible
  - support
- Mock up with Balsamiq
  - easy to use, automated saving
  - offline usage possible
  - support

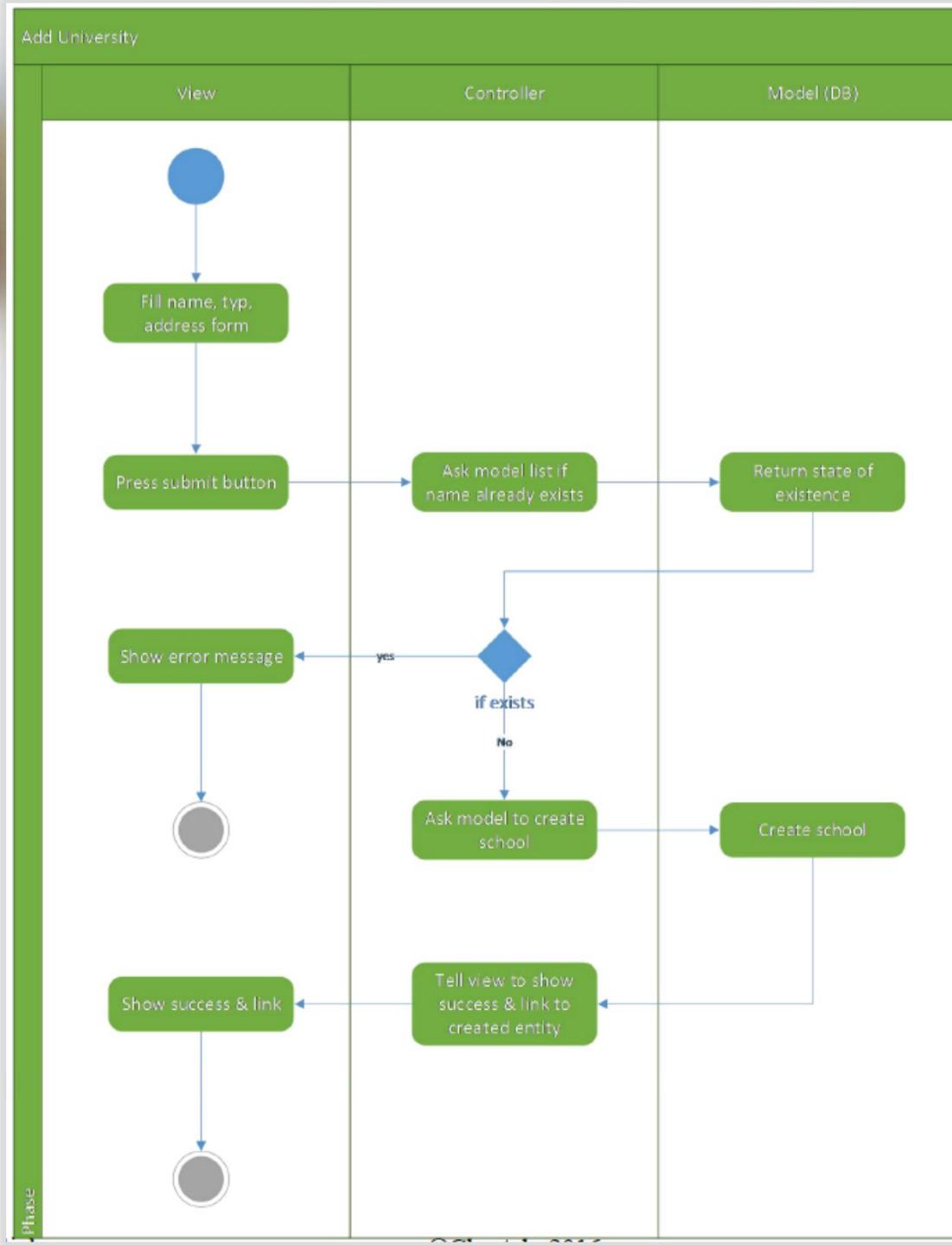


# Use Cases

- Activity Diagram
  - To show the client how the process works in a visual way
  - To help us program the process in the right way
- Mock up
  - So the client can see a visualization of the endproduct and give us feedback
  - To let us know how to design the frontend of the application

# Use Cases

- Add University
  - Activity Diagram



# Use Cases

- Mock up

Project Cheetah

Add University

Name

Typ

Street  No

ZIP  City

Submit

Project Cheetah

Add University

Error  
Institution already exists, please search for it  
in the universitieslist.

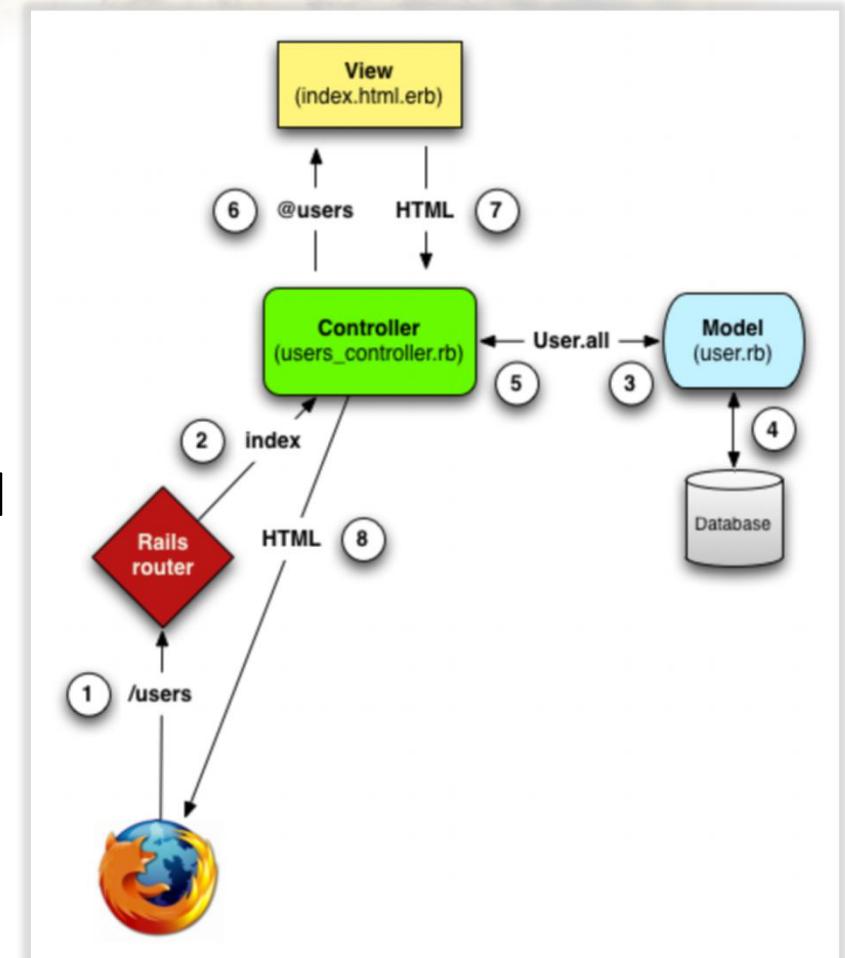
Project Cheetah

Add University

Institution has been created successfully!  
Added entity:  
[DHBW Karlsruhe](#)

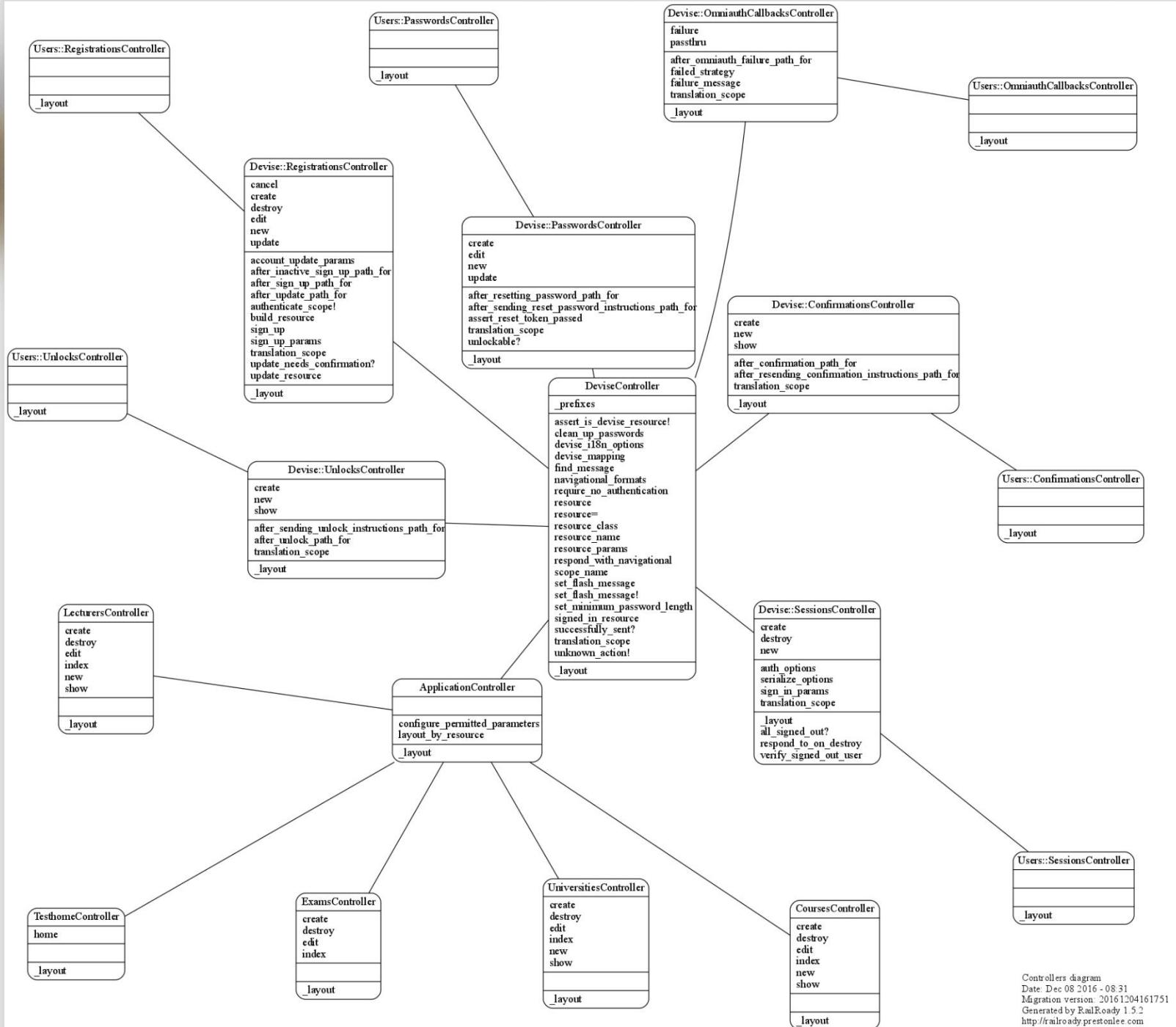
# SAD

- **MVC (Model–view–controller) for Ruby**
  - software design pattern
  - divides a software application into 3 interconnected parts, so as to separate internal representations of information from the ways that information is presented to or accepted from the user.



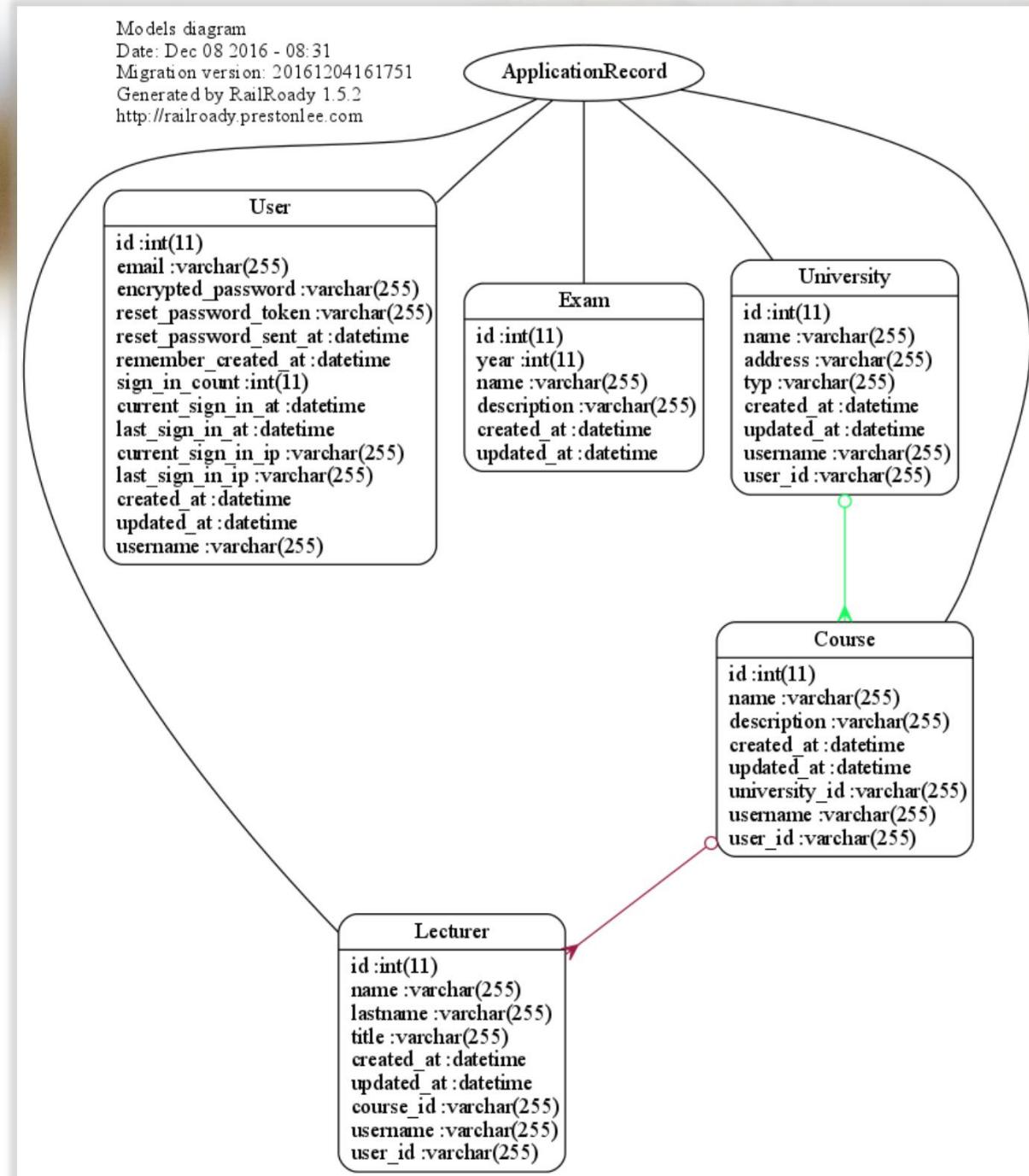
# Class Diagram

- Controller/View



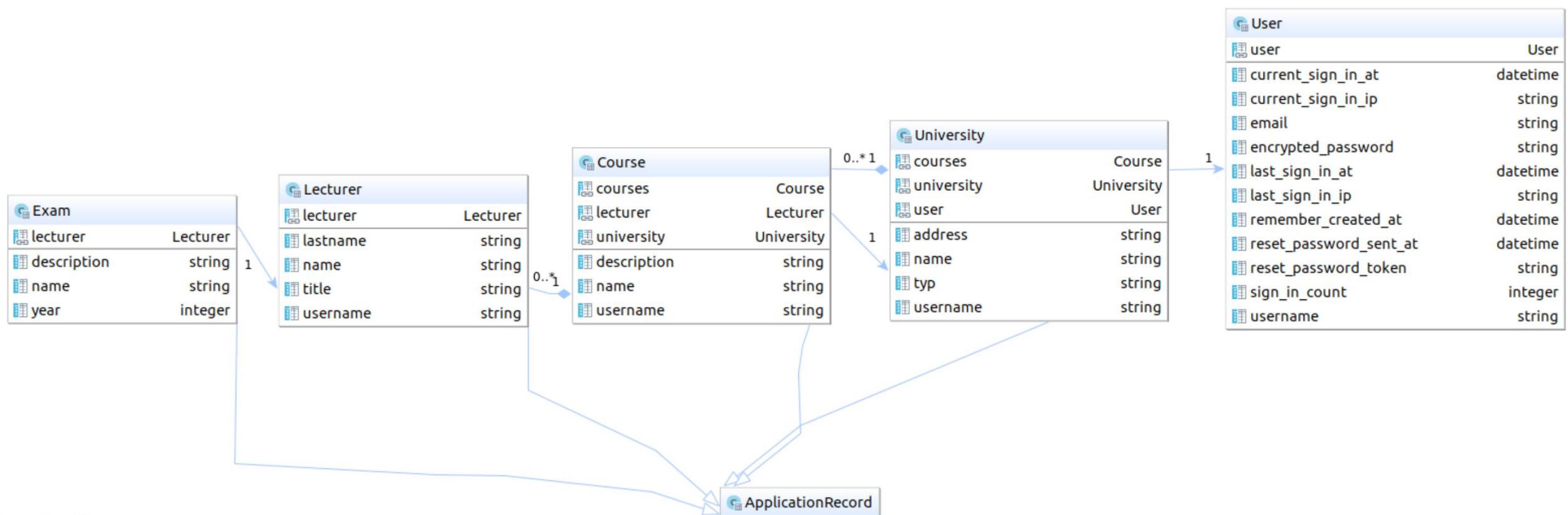
# Class Diagram

- Modell



# Class Diagram

- Modell



# Class Diagram

## DB-Shema





# Jira - Short term planning

- Agile methodology
  - Agile: It advocates adaptive planning, evolutionary development, early delivery, and continuous improvement, and it encourages rapid and flexible response to change.
- Jira - Scrum Board
  - Scrum: flexible, holistic product development strategy where a development team works as a unit to reach a common goal.  
=> Clients can change their minds of what they need and want
- Burndown Diagram
  - To see the work process (time countdown for sprints)

SCHNELL-FILTER: Nur meine Vorgänge

Zuletzt aktualisiert

## Aufgaben

## In Arbeit

## Fertig

 CHEET-34

↑ Preparing for Presentation

Requirements

2h

 CHEET-15

↑ Implementation Add Course

Implementation

0m

 CHEET-32

↑ Upgrade design

Analysis &amp; Design

1h

 CHEET-33

↑ Finishing Environment for midterm

Environment

0m

 CHEET-18

↑ Implementation Add Lecturer

Implementation

0m

 CHEET-35

↑ Testing for Demo

Test

0m

 CHEET-11

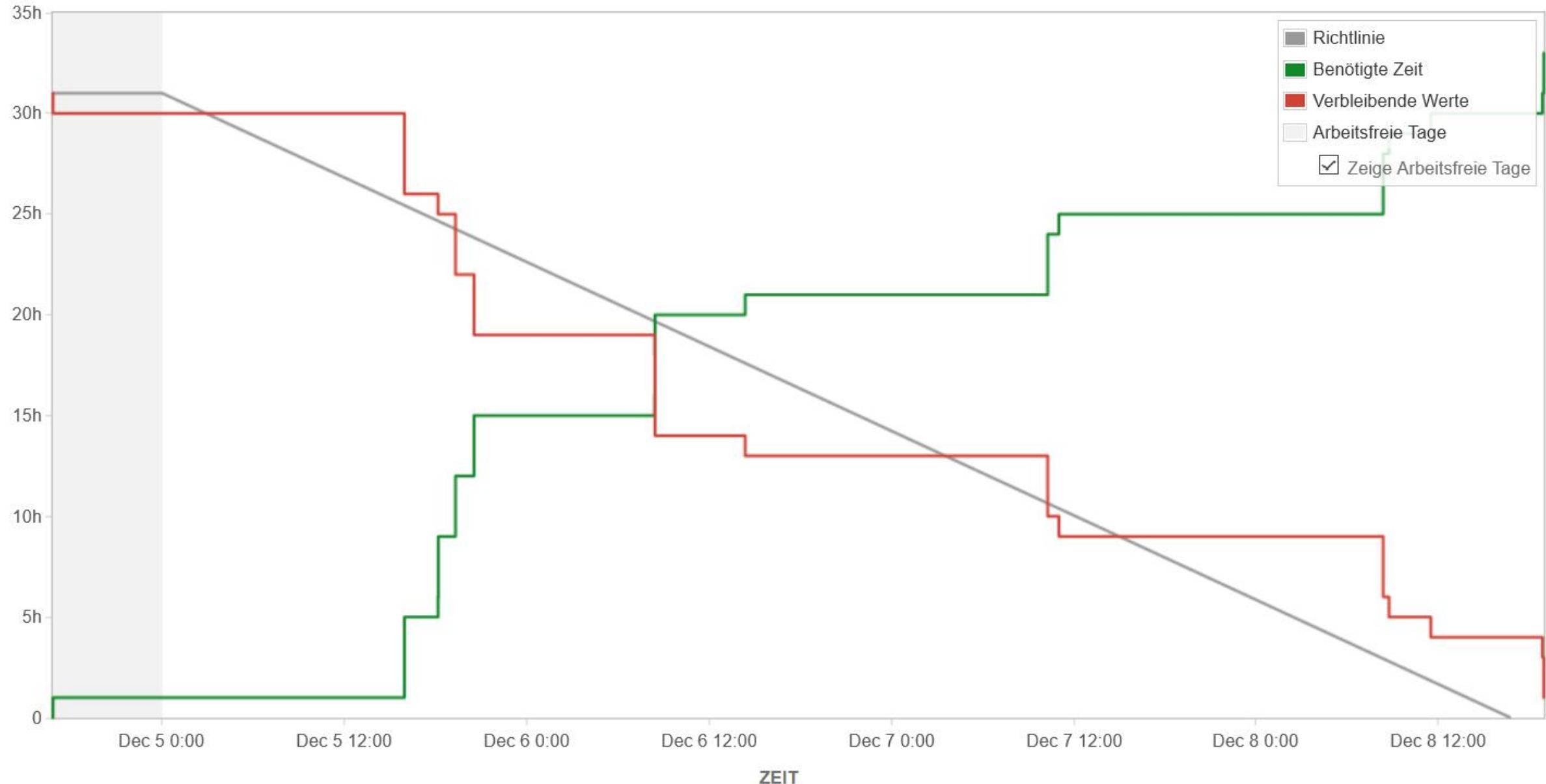
↑ Implementation Add University

Implementation

19

0m

## VERBLEIBENDE ZEIT GESCHÄFT



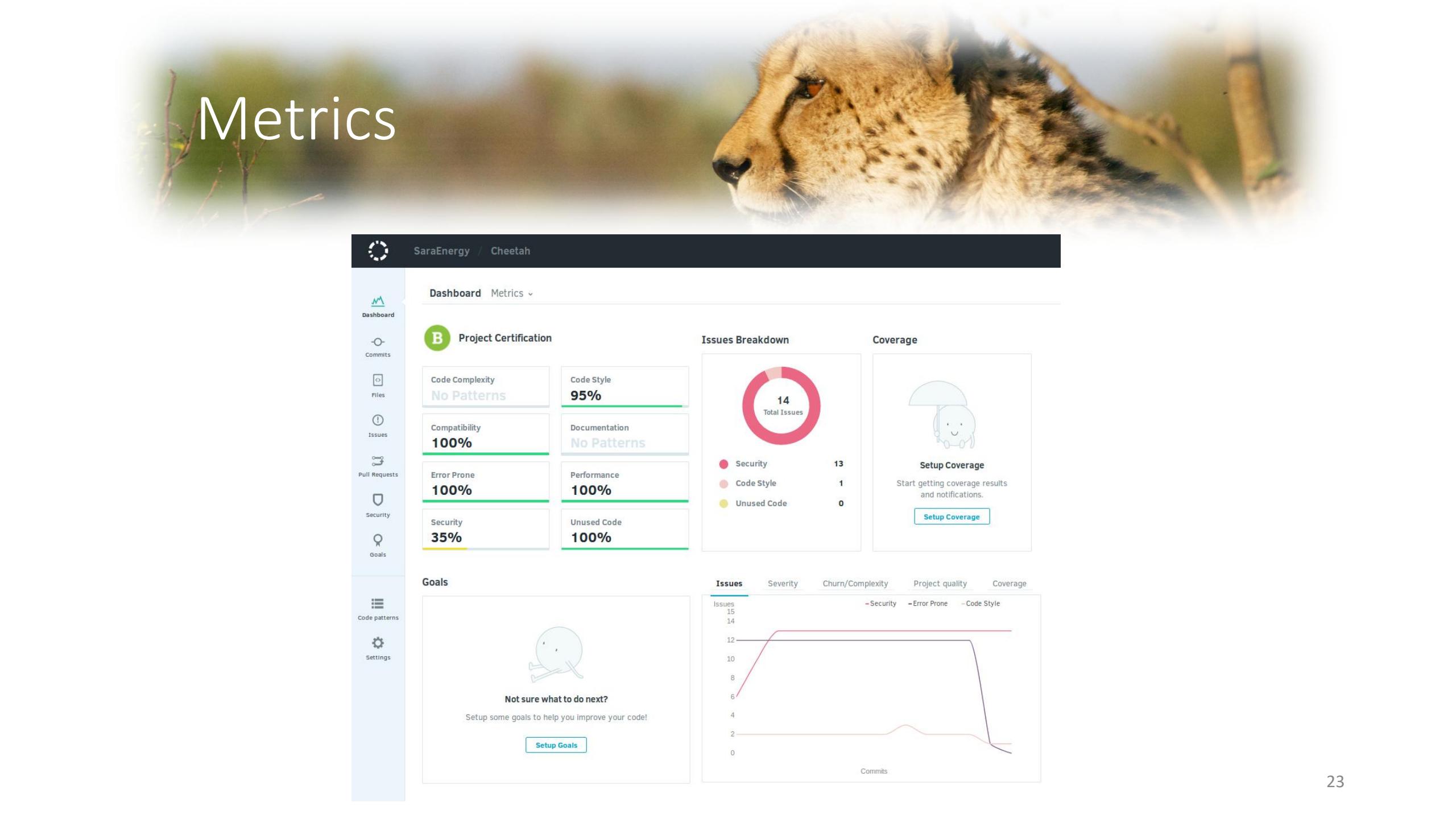


# Long term planning

- Why MS Project?
  - Long term planning tool
  - many diagrams to calculate ressources, costs and time
  - easy integration with other MS Products
  - support and reliability
  - offline usage possible
  - to create the Gantt Chart



# Metrics



SaraEnergy / Cheetah

Dashboard Metrics

**B Project Certification**

Code Complexity <b>No Patterns</b>	Code Style <b>95%</b>
Compatibility <b>100%</b>	Documentation <b>No Patterns</b>
Error Prone <b>100%</b>	Performance <b>100%</b>
Security <b>35%</b>	Unused Code <b>100%</b>

**Issues Breakdown**

14 Total Issues

- Security: 13
- Code Style: 1
- Unused Code: 0

**Coverage**

Setup Coverage

Start getting coverage results and notifications.

**Goals**

Not sure what to do next?

Setup some goals to help you improve your code!

**Setup Goals**

**Issues** Severity Churn/Complexity Project quality Coverage

Issues: 15, 14, 12, 10, 8, 6, 4, 2, 0

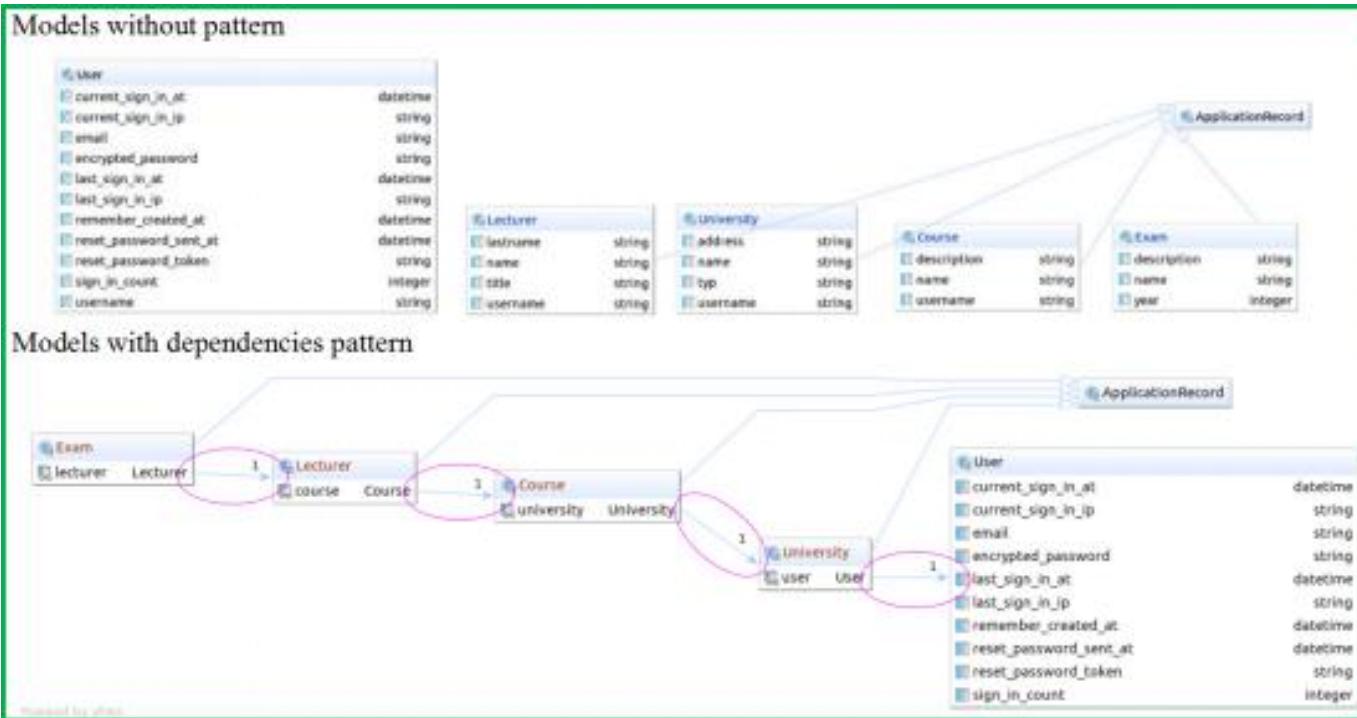
Severity: Security, Error Prone, Code Style

Churn/Complexity: Commits

Project quality: Not explicitly labeled but likely refers to the overall project quality metric shown in the chart.

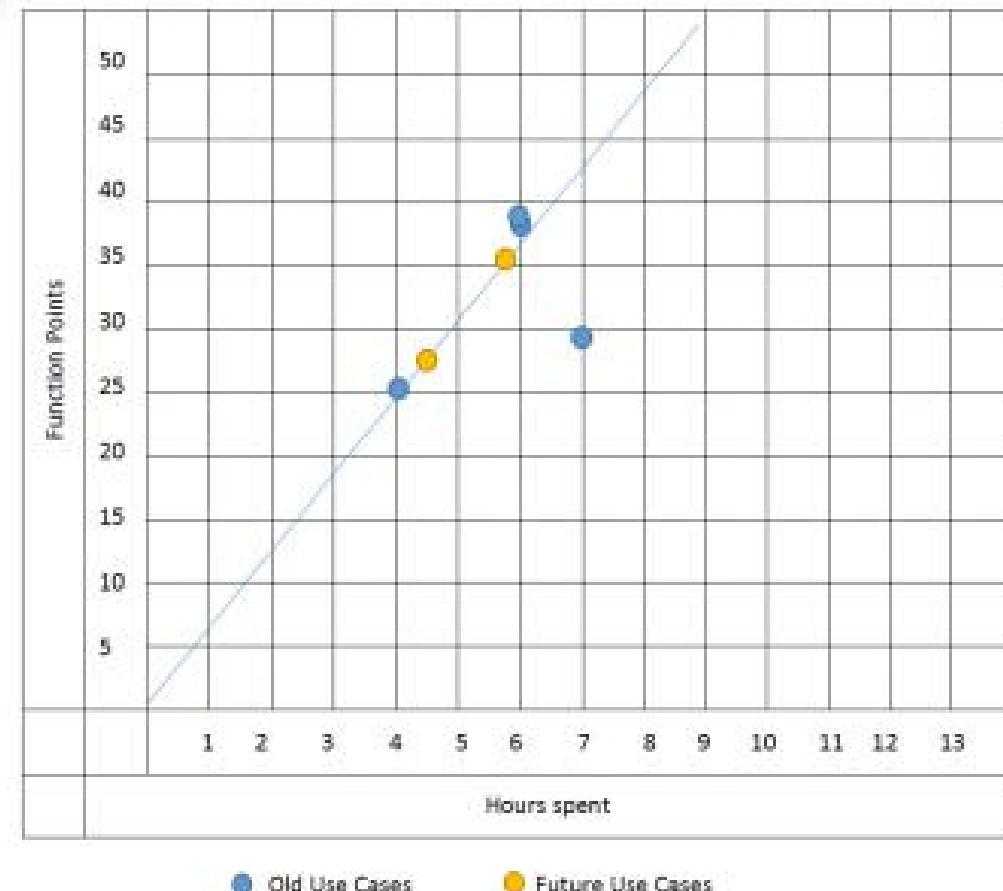
Coverage: Not explicitly labeled but likely refers to the coverage percentage shown in the coverage section.

# Pattern



# Function Point Calculation

- calculate the future



# Risk Management

Comparison

beginning

vs end

Risk Name	Risk Description	Risk Probability of Occurrence %	Risk Impact	Risk Factor	Risk Mitigation	Person in Charge of Tracking
unrealistic estimation	not enough time	60	10	6	smaller goals, work concentrate	together
long requirements catalogue	not able to complete all requirements	60	10	6	reduce amount of requirements	together
technical impossibilities	difficult to implement	80	6	4,8	find work around	together
Staff size and experience	no experience	70	4	2,8	gain experience	together
deficit with external components	not supported tools	50	2	1	find work around / use another tool	together
development environment	failure of environment	20	10	2	fix it	Damian
Deficit in performance ability of software	slow hardware	80	1	0,8	buy new Hardware	Lior

Risk Name	Risk Description	Risk Probability of Occurrence %	Risk Impact	Risk Factor	Risk Mitigation	Person in Charge of Tracking
unrealistic estimation	not enough time	30	10	3	smaller goals, work concentrate	Sara
long requirements catalogue	not able to complete all requirements	30	10	3	reduce amount of requirements	Sara
technical impossibilities	difficult to implement	60	6	3,6	find work around	Lior
Staff size and experience	no experience	50	4	2	gain experience	Sara
deficit with external components	not supported tools	40	2	0,8	find work around / use another tool	Damian
development environment	failure of environment	20	10	2	fix it	Damian
Deficit in performance ability of software	slow hardware	70	1	0,7	buy new Hardware	Lior

# Unit testing

## Ruby testing

With errors



A screenshot of a RubyMine IDE window titled "Cheetah\_3 - ~/RubymineProjects/Cheetah\_3 - .../test/controllers/testhome\_controller\_test.rb - RubyMine 2017.1.3". The window shows a list of test methods in the left sidebar under "test/controllers". The main pane displays the output of a test run, showing numerous errors. The errors are all of the same type: "Minitest::UnexpectedError: ArgumentError: Invalid response name: successesd". These errors are traced back to specific lines in "lecturers\_controller\_test.rb" at line 16 and "text\_controller\_test.rb" at line 26. The output also shows the total time taken (1.29830s), the number of tests run (30), assertions (12), failures (0), and skips (0). The process finished with an exit code of 0.

```
require 'test_helper'

1 require 'test_helper'

Terminated
test_should_get_edit 1s 8ms
test_should_get_index 19ms
test_should_get_destroy 8ms
test_should_get_create 4ms
test_Text_Test 5ms
test_should_get_home 2ms
test_the_truth 1ms
test_should_get_create 15ms
test_should_get_destroy 2ms
test_should_get_index 8ms
test_should_get_edit 2ms
test_should_get_new 7ms
test_Lecturer_Test 6ms
test_the_truth 13ms
test_should_get_show 1ms
test_should_get_new 1ms
test_should_get_index 1ms
test_Exsam_test 1ms

Stopped. 15 of 21 tests failed - 1s 101ms

Minitest::UnexpectedError: ArgumentError: Invalid response name: successesd
  test/controllers/lecturers_controller_test.rb:16:in `block in <class:LecturersControllerTest>'
  test/controllers/lecturers_controller_test.rb:16:in `block in <class:LecturersControllerTest>'

Minitest::UnexpectedError: ArgumentError: Invalid response name: successesd
  test/controllers/lecturers_controller_test.rb:6:in `block in <class:LecturersControllerTest>'
  test/controllers/lecturers_controller_test.rb:6:in `block in <class:LecturersControllerTest>'

Minitest::UnexpectedError: ArgumentError: Invalid response name: successesd
  test/controllers/text_controller_test.rb:26:in `block in <class:TextControllerTest>'
  test/controllers/text_controller_test.rb:26:in `block in <class:TextControllerTest>'

Minitest::UnexpectedError: ArgumentError: Invalid response name: successesd
  test/controllers/text_controller_test.rb:21:in `block in <class:TextControllerTest>'
  test/controllers/text_controller_test.rb:21:in `block in <class:TextControllerTest>'

Minitest::UnexpectedError: ArgumentError: Invalid response name: successesd
  test/controllers/text_controller_test.rb:31:in `block in <class:TextControllerTest>'
  test/controllers/text_controller_test.rb:31:in `block in <class:TextControllerTest>'

Finished in 1.29830s
30 tests, 12 assertions, 0 failures, 15 errors, 0 skips

Process finished with exit code 0
```

# Unit testing

## Ruby testing

Without errors



A screenshot of the RubyMine IDE interface. The title bar shows "Cheetah\_3 - ~/RubymineProjects/Cheetah\_3 - testhome\_controller\_test.rb - RubyMine 2017.1.3". The menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help. The toolbar has icons for Open, Save, Run, Stop, and others. The main window shows a project tree for "Cheetah\_3 [Cheetah] ~/RubymineProjects/Cheetah\_3" with files like exams\_controller\_test.rb, lecturers\_controller\_test.rb, text\_controller\_test.rb, courses\_controller\_test.rb, and testhome\_controller\_test.rb. A "Console" tab is active, displaying the output of a test run: "All 30 tests passed - 1s 215ms". The output lists 14 test files and their execution times. Below the console, the message "14 files were loaded." is shown, followed by "Running tests... Started", "Finished in 1.26200s", "30 tests, 28 assertions, 0 failures, 0 errors, 0 skips", and "Process finished with exit code 0". The bottom status bar shows "Tests Passed: 30 passed (moments ago)", "6:30 LF: UTF-8: Git: Unittesting:", and "Event Log".

# Unit testing

## Travis - Continuous Integration

With errors



The screenshot shows the Travis CI web interface. At the top, there's a navigation bar with links for "Travis CI", "Blog", "Status", and "Help". On the right side of the header, there's a user icon for "LiorEnergy" and a green Jenkins logo.

The main area displays a repository named "Damian1234523 / Cheetah". Below the repository name, it says "Build #33". The build status is shown as "build error".

The build log shows the following command sequence:

```
▶ 1 Worker information
▶ 6 Build system information
73
▶ 74 $ export DEBIAN_FRONTEND=noninteractive
110 $ sudo apt-get install libssl1.0.0
134 $ git clone --depth=50 --branch=travis https://github.com/Damian1234523/Cheetah.git Damian1234523/Cheetah
145 $ sudo service mysql start
148 $ rvm use 2.3.1 --install --binary --fuzzy
174 $ export BUNDLE_GEMFILE=$PWD/Gemfile
175 $ ruby --version
176 ruby 2.3.1p112 (2016-04-26 revision 54768) [x86_64-linux]
177 $ rvm --version
178 rvm 1.26.10 (latest-minor) by Wayne E. Seguin <wayneeseguin@gmail.com>, Michal Papis <mpapis@gmail.com> [https://rvm.io/]
```

On the right side of the log, there are performance metrics and logs for each command:

- Worker info: fix.CVE-2015-7547, update libssl1.0.0, git.checkout, services, rvm
- System info: 1.18s, 0.01s, 20.90s
- fix.CVE-2015-7547: 1.18s
- update libssl1.0.0: 0.01s
- git.checkout: 20.90s
- services: 0.01s
- rvm: 20.90s

Below the log, there are buttons for "Job log" and "View config", and links for "Remove log" and "Raw log".

# Unit testing

## Travis - Continuous Integration

without errors



The screenshot shows the Travis CI web interface. At the top, there's a navigation bar with links for "Travis CI", "Blog", "Status", "Help", and a user icon. On the right side of the header, it says "LiorEnergy" with a green icon. Below the header, there's a search bar labeled "Search all repositories" and a "My Repositories" section. Under "My Repositories", there are two entries: "Damian1234523/Cheetah" (Build #50, duration 2 min 35 sec, finished 2 minutes ago) and "LiorEnergy/Jenkins-Test" (Build #:-, duration:-). The main content area shows a repository named "Damian1234523 / Cheetah". It displays a build log for "Build #38 Job #38.1" which just passed. The log shows a successful Travis build with commit 6a4be28, compare 3448dc0..6a4be28, and branch travis. LiorEnergy authored and committed the changes. The log also includes sections for "Worker information" and "Build system information", along with a detailed timeline of build steps and metrics like CPU usage and memory usage.

Travis CI

Blog Status Help

LiorEnergy

Search all repositories

My Repositories +

Damian1234523 / Cheetah

build error

Current Branches Build History Pull Requests > Build #38 Job #38.1

More options

Job log View config

Remove log Raw log

Worker information

Build system information

73

74 \$ export DEBIAN\_FRONTEND=noninteractive

110 \$ sudo apt-get install libssl1.0.0

134 \$ git clone --depth=50 --branch=travis https://github.com/Damian1234523/Cheetah.git Damian1234523/Cheetah

145 \$ sudo service mysql start

148 \$ rvm use 2.3.1 --install --binary --fuzzy

174 \$ export BUNDLE\_GEMFILE=\$PWD/Gemfile

175 \$ ruby --version

176 ruby 2.3.1p112 (2016-04-26 revision 54768) [x86\_64-linux]

177 \$ rvm --version

178 rvm 1.26.10 (latest-minor) by Wayne E. Seguin <wayneeseguin@gmail.com>, Michal Papis <mmpapis@gmail.com> [https://rvm.io/]

179 \$ bundle --version

fix.CVE-2015-7547  
update libssl1.0.0  
git.checkout  
services  
rvm

worker\_info  
system\_info

1.29s  
0.01s  
23.40s

