

# Learn IT Yourself

LERNZIELE SPIELERIESCH SELBST ERREICHEN

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# Agenda

- ▶ **Business**
- ▶ **Quality**
- ▶ **Technical Ability**

# Business

VISION

USE CASES

PROJECT MANAGEMENT

RUP

TIME ESTIMATION

# Our Vision

- ▶ **Blow up your motivation levels for reaching your goals!**
- ▶ **Turn mundane tasks such as studying into a game!**



# Vision – Structured Learning

- ▶ Make progress of learning digital and competitive
- ▶ Stay as motivated as you were in the beginning
- ▶ Split your learning goal into various tasks

# Vision - Motivation

## Competitive

- ▶ Points for completing tasks
- ▶ Highscore system
- ▶ Group statistics

## Self-reflection

- ▶ Individual rating of (completed) tasks
- ▶ Reward system outside groups
- ▶ Spend points on personal rewards

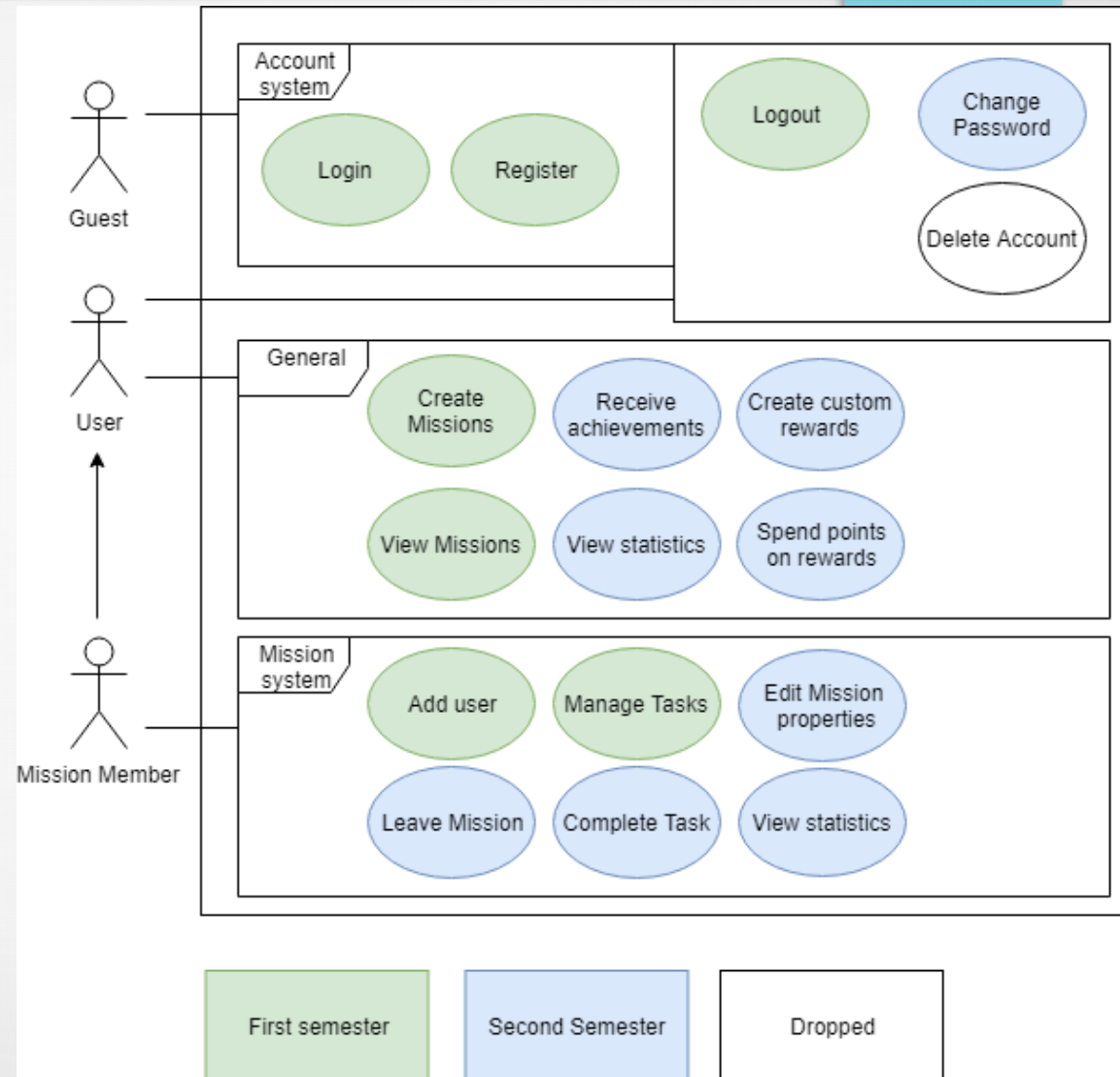
# Scope – Usecases

## Important Use-Cases:

- \* Create Mission
- \* Manage Tasks
- \* Rewards
- \* Achievements
- \* Statistics

## Dropped

- \* Delete Account



# Project Management

- ▶ **SCRUMMING** with project management tool „YouTrack“
- ▶ Every week new sprint planning
- ▶ Gives an overview of:
  - ▶ Spent time
  - ▶ Tasks ToDo/ in Progress/ Done
  - ▶ Work history



# Youtrack

Week\_21 (Transition)

11 — 17 Jun



2 days left

S



XL

TV



Open

2h

In Progress

2d1h40m

To Verify

3h30m

Done

1d

## Uncategorized Cards

14 cards

LEARNIT-148 Normal Task Construction

[Doc] Edit Class Diagram



2h

LEARNIT-140 Normal Task Construction

Do User Tests



+2

1h40m

LEARNIT-176 Show-stopper Task Construction

[Back] edit completeTask.php



1h

LEARNIT-191 Normal Task Construction

Create Video



2h

LEARNIT-189 Normal Task Construction

Final Presentation



+2

4h

LEARNIT-190 Normal Task Construction

[Back][Fix] Fix deleteReward and CreateMission



2h

LEARNIT-192 Normal Task Transition

Create the CI and Tech Stack blogpost



2h

LEARNIT-157 Normal Task Construction

[Doc] Finish Testplan



2h

LEARNIT-195 Normal Task Construction

[Front] Change Frontend to work with getAchievements



30m

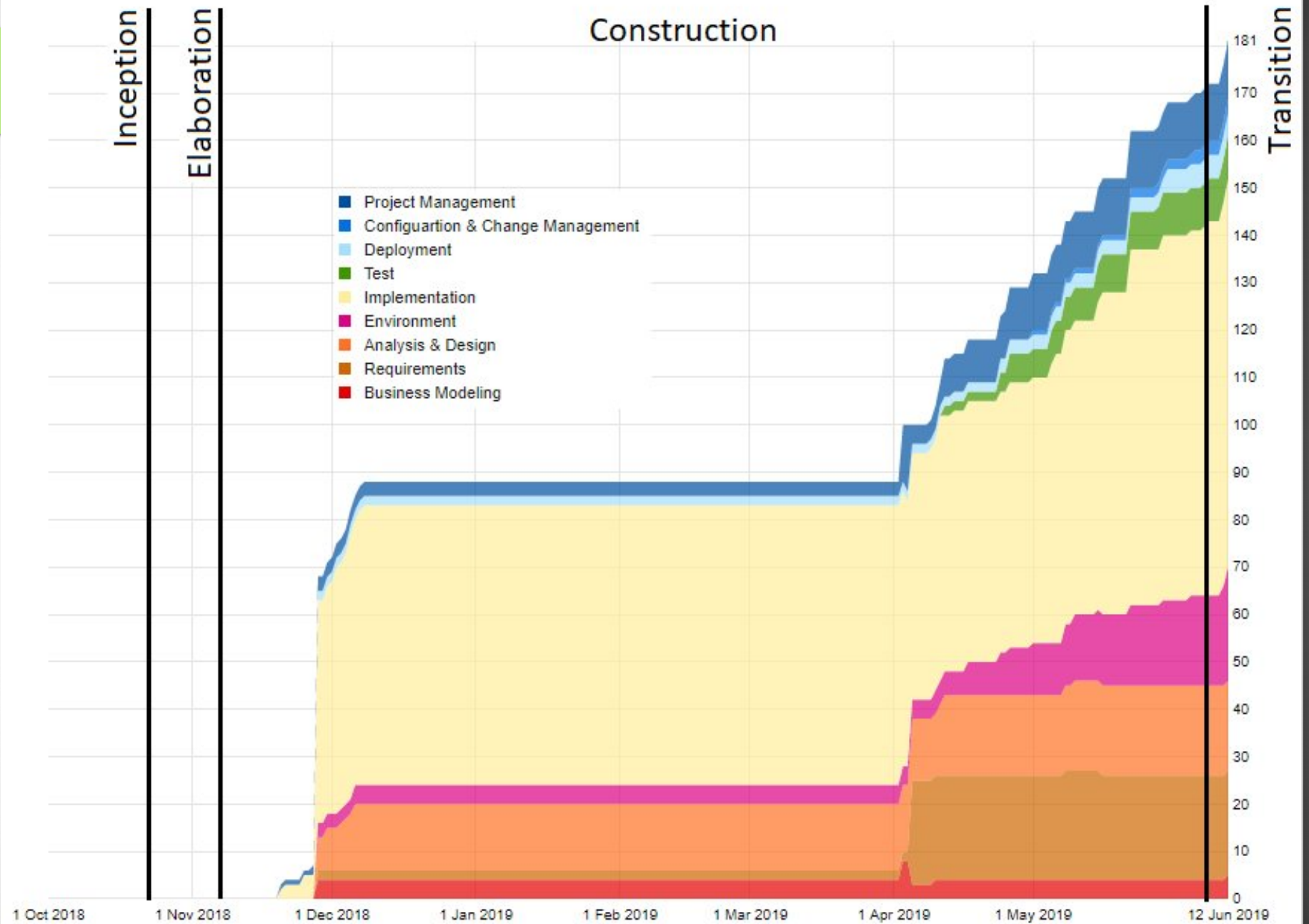
LEARNIT-164 Show-stopper Task Construction

[Back] Receive Achievements

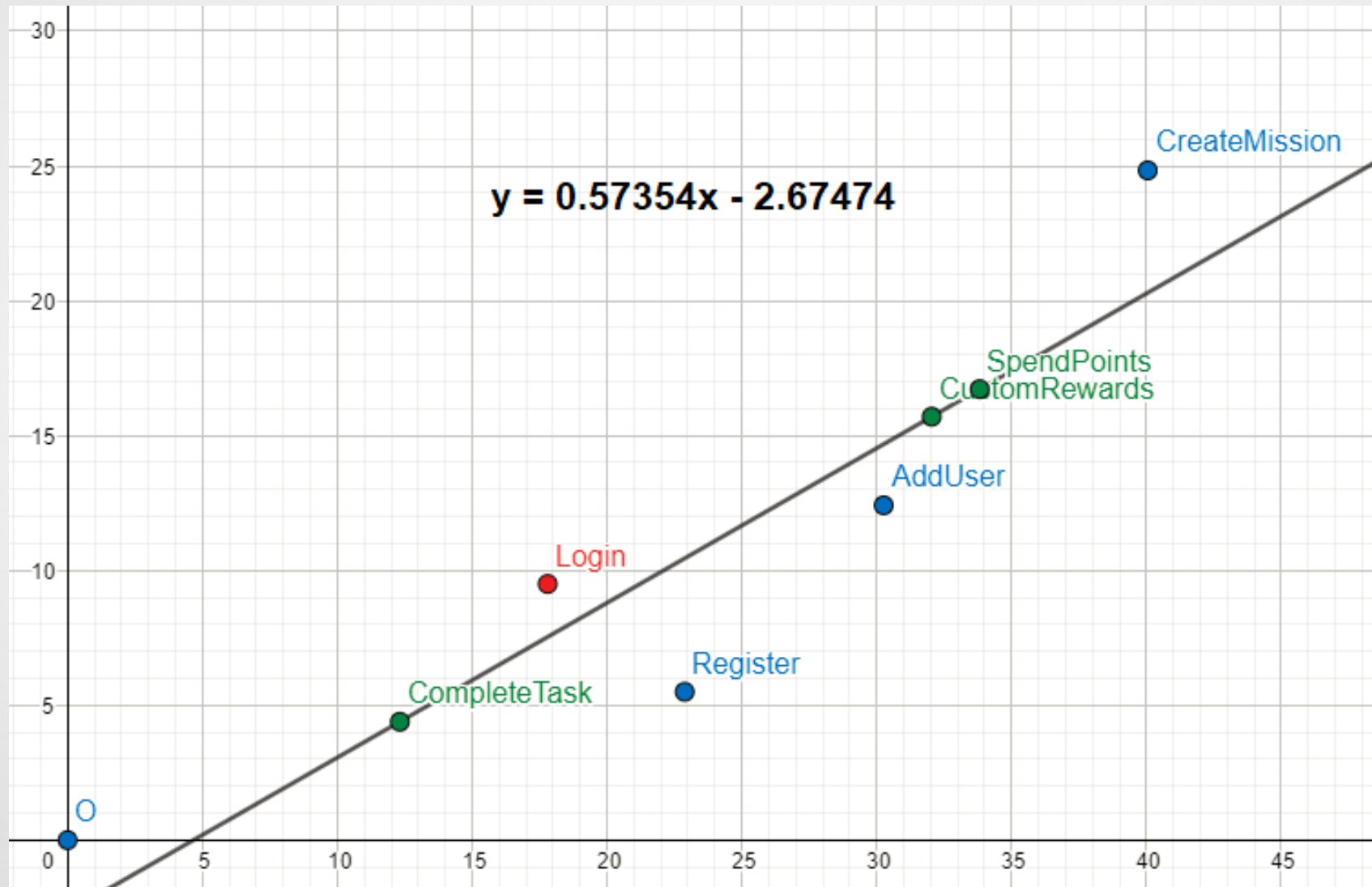


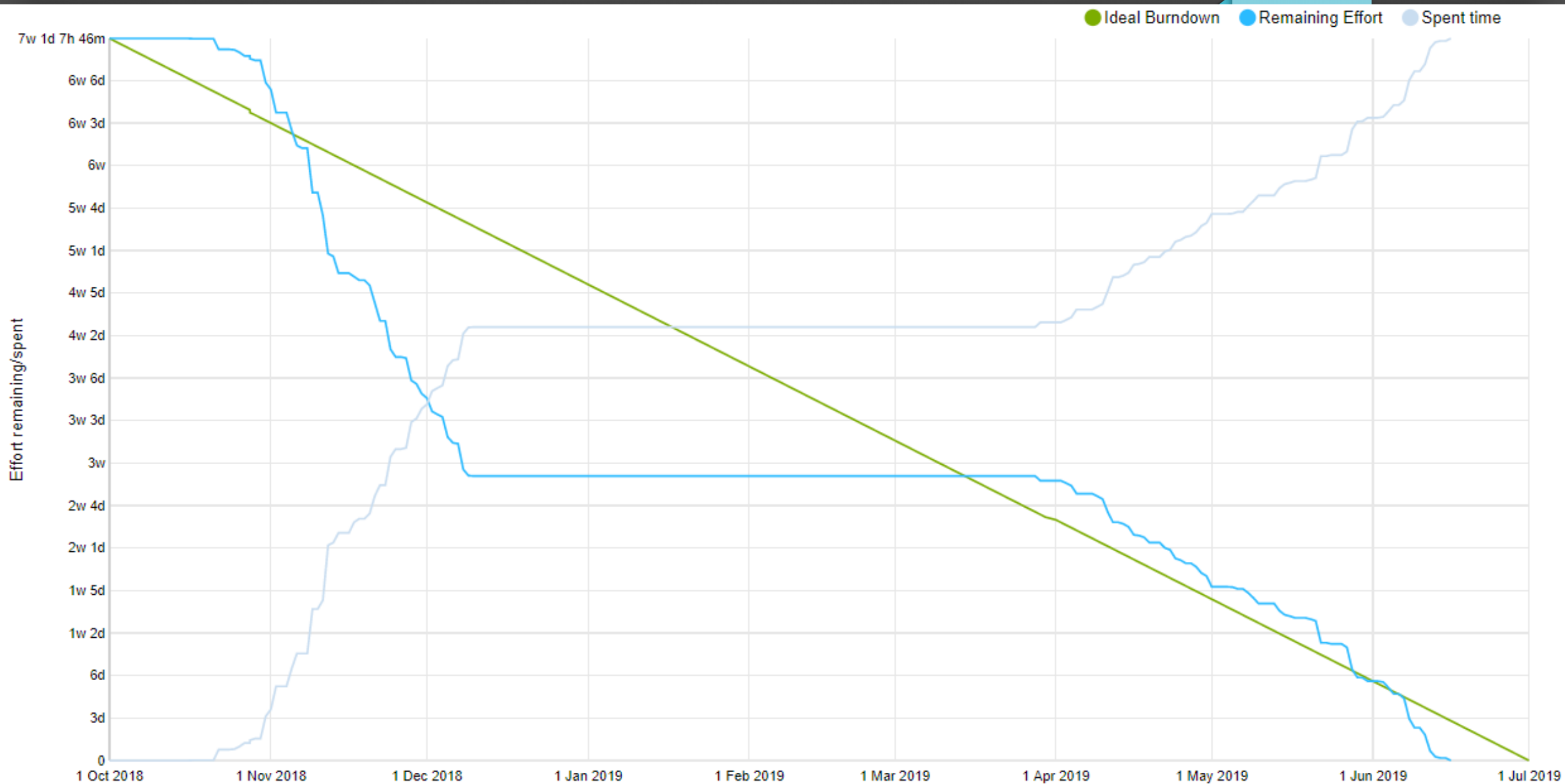
4h

# RUP



# FP Time Estimation







# Quality

TESTING

AUTOMATION

RISK MANAGEMENT

ARCHITECTURE

PATTERNS

METRICS

# Testing

## Unit Testing



- ▶ Testing the functionality of individual functions

## User Testing

- ▶ Testing the usability

## Functional Testing



- ▶ Testing a complete functionality of the application

# Continuous Integration

## Development



## Version Control



## Continuous Integration

Trigger



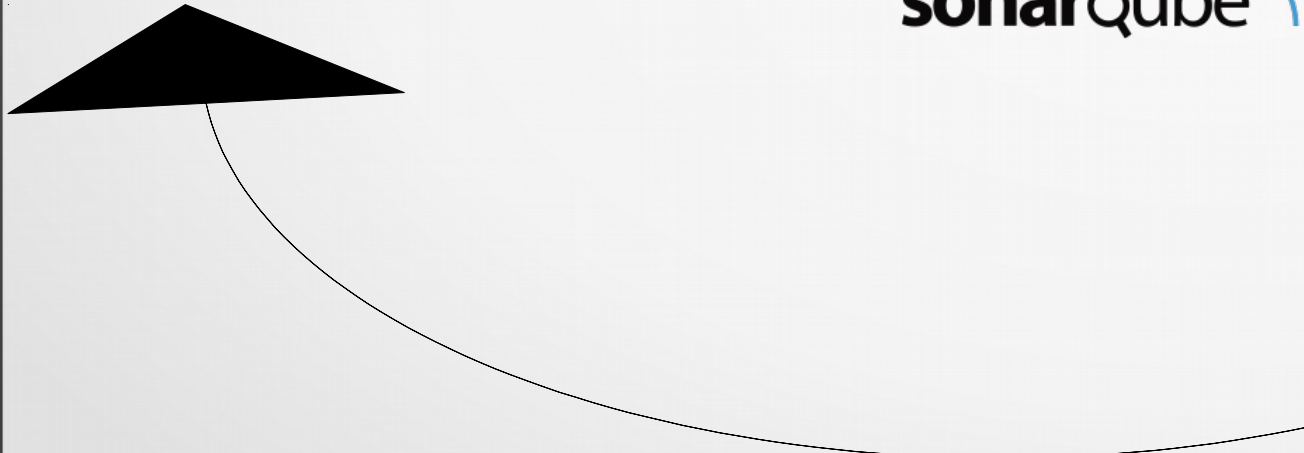
Build and  
Test



cucumber



Feedback

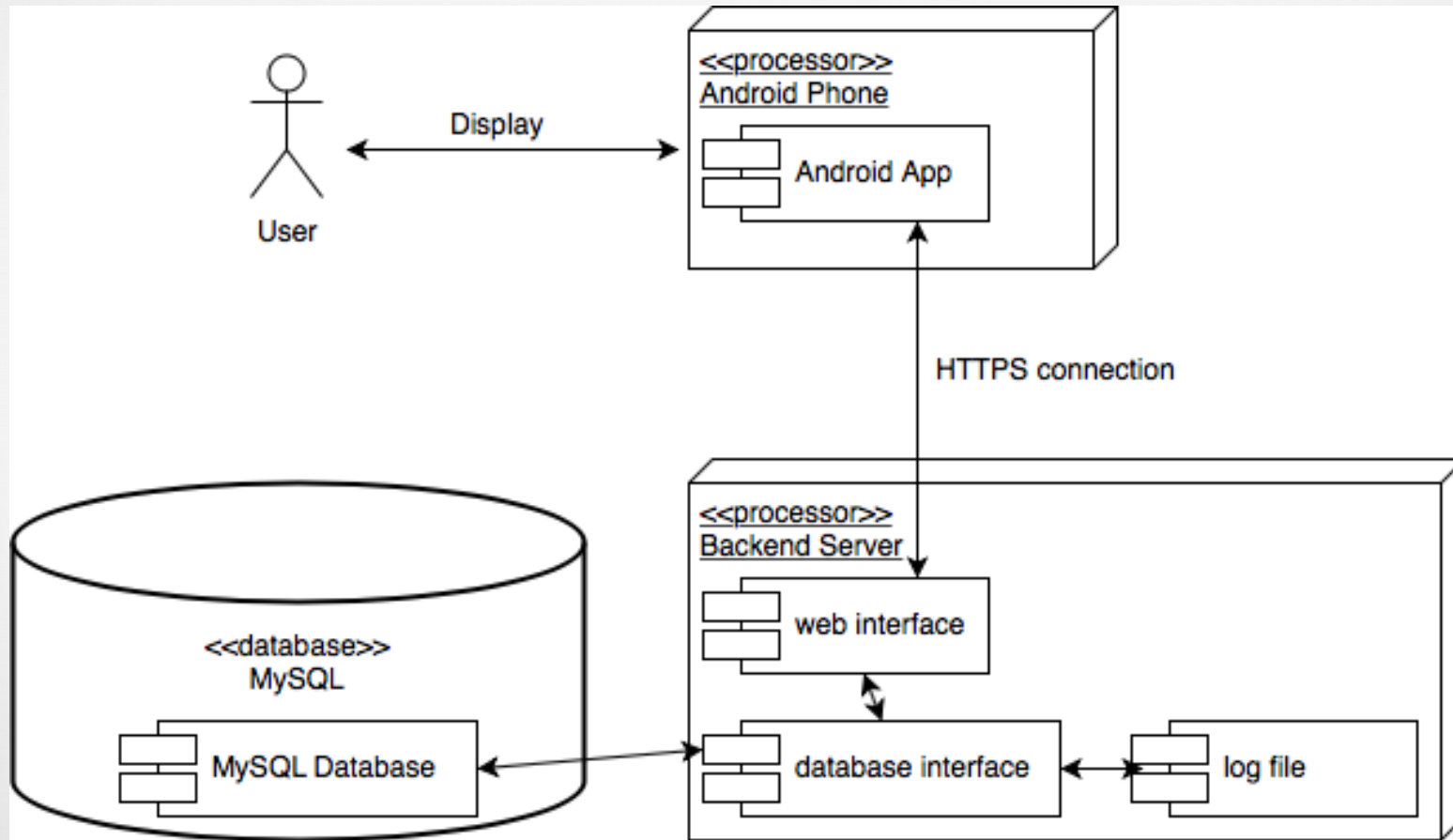


# Risk Management

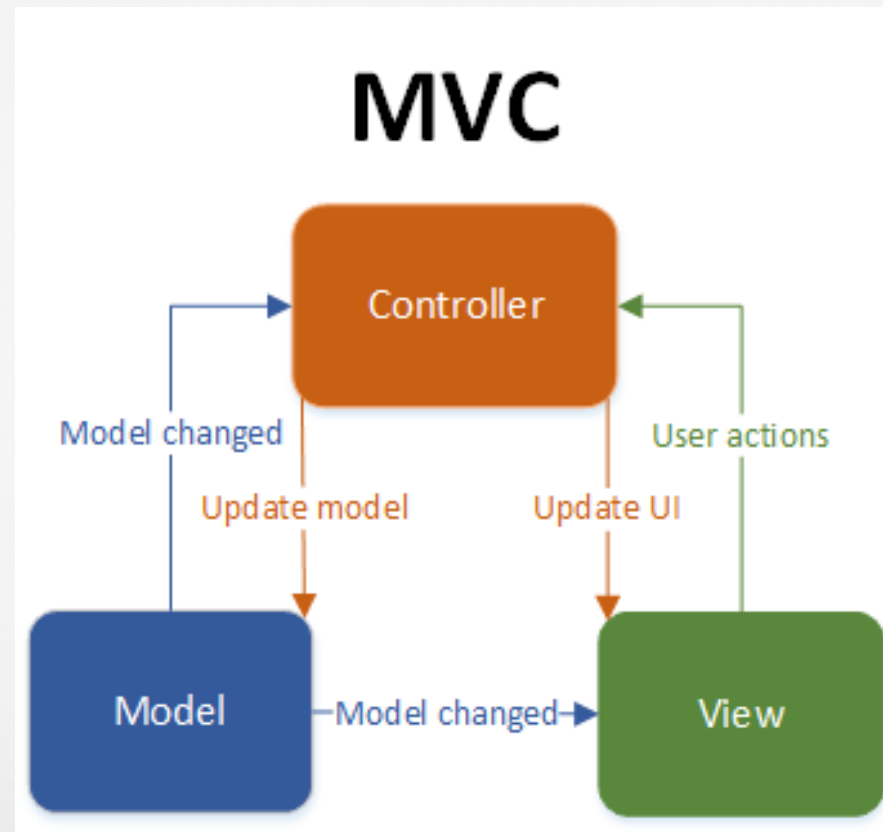
| Risk Name                   | Risk Description  | Risk Probability | Risk Impact | Risk Mitigation  | Person in Charge | Risk Factor |
|-----------------------------|---|------------------|-------------|--|------------------|-------------|
| Repository loss             | Git Repository breaks or Github goes down   | 1%               | 10          | Having local backups   | Jonas            | 0.1         |
| Server loss                 | Losing our Backend because of problems with our provider Contabo  | 3%               | 10          | Backup of all the Code and Data (regularly)                              | Jannik and Mert  | 0.3         |
| Hacker attacks              | Sensible data like User Passwords are exploited (Data Loss) or Virus infection                              | 5%               | 7           | Implementing proper Security Measures                                    | Everyone         | 0.35        |
| Local Code loss             | Losing local Code changes because of technical problems   | 20%              | 2           | Frequent pushes to Git   | Everyone         | 0.4         |
| Member Loss                 | Losing a Team Member (temporarily/permanently) due to e.g. a medical condition thus falling out of schedule | 1%               | 8           | -  | Everyone         | 0.8         |
| Unsatisfying results        | In the end the App does not fully represent the looks and features of what was initially planned            | 20%              | 9           | Defining and implementing Use Cases correctly and prototyping frequently | Everyone         | 1.8         |
| Unexpected Bugs             | Code contains bugs which could e.g. crash the App or display wrong data in a productive scenario            | 30%              | 7           | Proper and frequent testing  | Everyone         | 2.3         |
| Unexpected complexity of UC | UC is more complex and takes more time than expected  | 50%              | 6           | Proper planning or cutting down on Features                              | Jonas            | 3           |
| Bad Code                    | Bad Code makes understanding hard   | 50%              | 6           | Refactoring  | Everyone         | 3           |



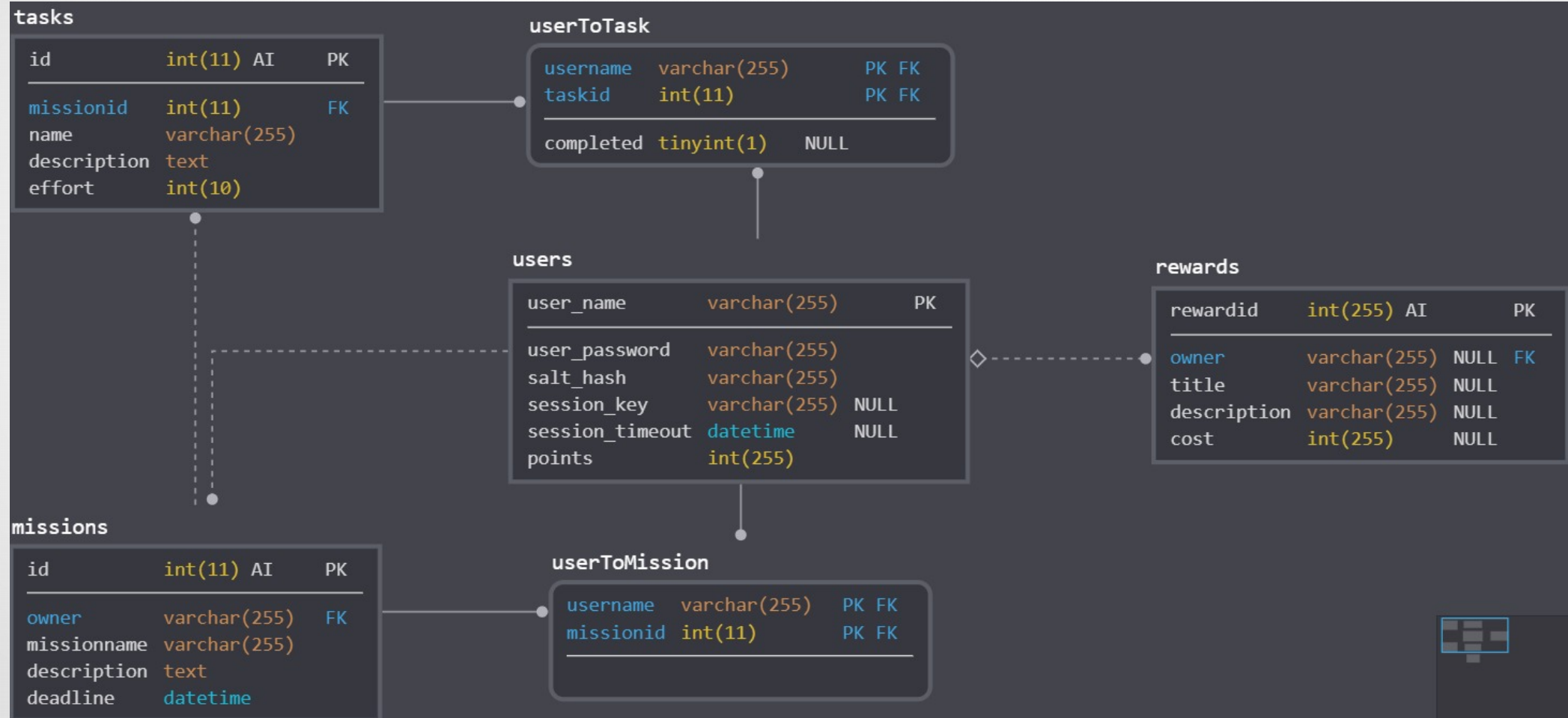
# Architecture



# Architecture II



# Architecture III

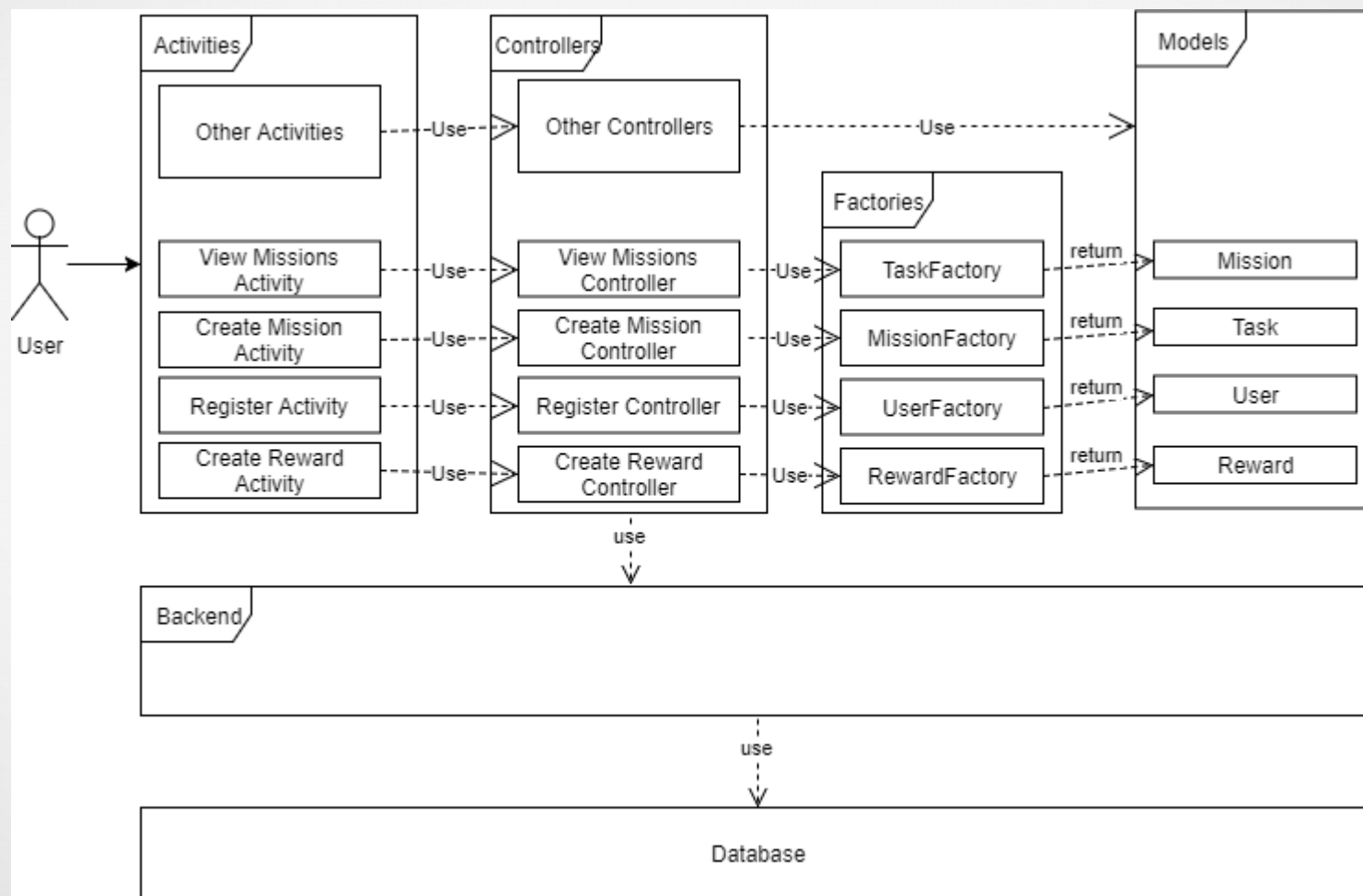


# Design Patterns

- ▶ Factory Method Pattern
- ▶ Idea: Disguise the construction of a model with another class, the factory
- ▶ In our case: Static methods to create new model objects
- ▶ -> filled with data, then returned



# Design Patterns II



# Metrics

sonarcloud



My Projects

My Issues

M

Mert-Guenduez / learnityourself



master



Overview

Issues

Measures

Code

Activity

Administration

Quality Gate



Failed

B

Security Rating on New Code is worse than A

Reliability

Measures

28

C

Bugs

started 11 hours ago

Security

Measures

65

E

Vulnerabilities

23

Security Hotspots

Maintainability

Measures

13d

A

Debt

346

Code Smells

# Metrics II

Method metrics Class metrics Package metrics Module metrics Project metrics

| class  | OCavg | WMC |
|--|-------|-----|
| learnityourself.dhbw.learnityourself.utility.HTTPRequestHandler            | 3,50  | 7   |
| learnityourself.dhbw.learnityourself.OptionsActivity                       | 2,00  | 6   |
| learnityourself.dhbw.learnityourself.controller.AuthorizedController       | 2,00  | 6   |
| learnityourself.dhbw.learnityourself.RegisterActivity                      | 2,00  | 6   |
| learnityourself.dhbw.learnityourself.AddMissionMemberCreateMissionActivity | 1,93  | 29  |
| learnityourself.dhbw.learnityourself.CreateCustomRewardActivity            | 1,70  | 17  |
| learnityourself.dhbw.learnityourself.CreateMissionActivity                 | 1,69  | 49  |
| learnityourself.dhbw.learnityourself.controller.OptionsController          | 1,67  | 5   |
| learnityourself.dhbw.learnityourself.controller.LoginController            | 1,50  | 6   |
| learnityourself.dhbw.learnityourself.controller.RegisterController         | 1,50  | 3   |
| learnityourself.dhbw.learnityourself.AddMissionMemberActivity              | 1,44  | 13  |
| learnityourself.dhbw.learnityourself.model.AddUserAdapter                  | 1,43  | 10  |
| learnityourself.dhbw.learnityourself.model.TaskAdapter                     | 1,40  | 7   |
| learnityourself.dhbw.learnityourself.ManageTaskActivity                    | 1,36  | 15  |
| learnityourself.dhbw.learnityourself.model.RewardAdapter                   | 1,36  | 15  |
| learnityourself.dhbw.learnityourself.ViewTaskActivity                      | 1,25  | 10  |
| learnityourself.dhbw.learnityourself.controller.MainController             | 1,23  | 16  |
| learnityourself.dhbw.learnityourself.controller.ViewRewardsController      | 1,22  | 11  |
| learnityourself.dhbw.learnityourself.model.UserAdapter                     | 1,20  | 6   |
| learnityourself.dhbw.learnityourself.model.MissionAdapter                  | 1,20  | 6   |
| learnityourself.dhbw.learnityourself.MainActivity                          | 1,20  | 12  |
| learnityourself.dhbw.learnityourself.ViewRewardsActivity                   | 1,20  | 6   |
| learnityourself.dhbw.learnityourself.model.MissionMemberAdapter            | 1,20  | 6   |
| learnityourself.dhbw.learnityourself.ViewMissionsActivity                  | 1,17  | 7   |
| learnityourself.dhbw.learnityourself.ViewMissionActivity                   | 1,17  | 14  |

Method metrics Class metrics Package metrics Module metrics Project metrics

| class   | OCavg | WMC |
|---|-------|-----|
| learnityourself.dhbw.learnityourself.utility.HTTPRequestHandler | 2,25  | 9   |
| learnityourself.dhbw.learnityourself.OptionsActivity            | 2,00  | 6   |

# Automation

- ▶ Tests, DIE, git, YouTrack SHOW Integration
- ▶ Automated testing is important, why is it important. Are you mentioning that in your talk, are you explaining how it is integrated into your project. what does this mean for the client?  
**Present proof that yours are executed.**  
So - not only are you implementing it technically, but you are also arguing in your presentation how it is integrated into your project management and software engineering process and methodology of running your project.  
You dont need to mention it 4 times, but for me I need to see whether you cover all aspects of the testing during your talk.

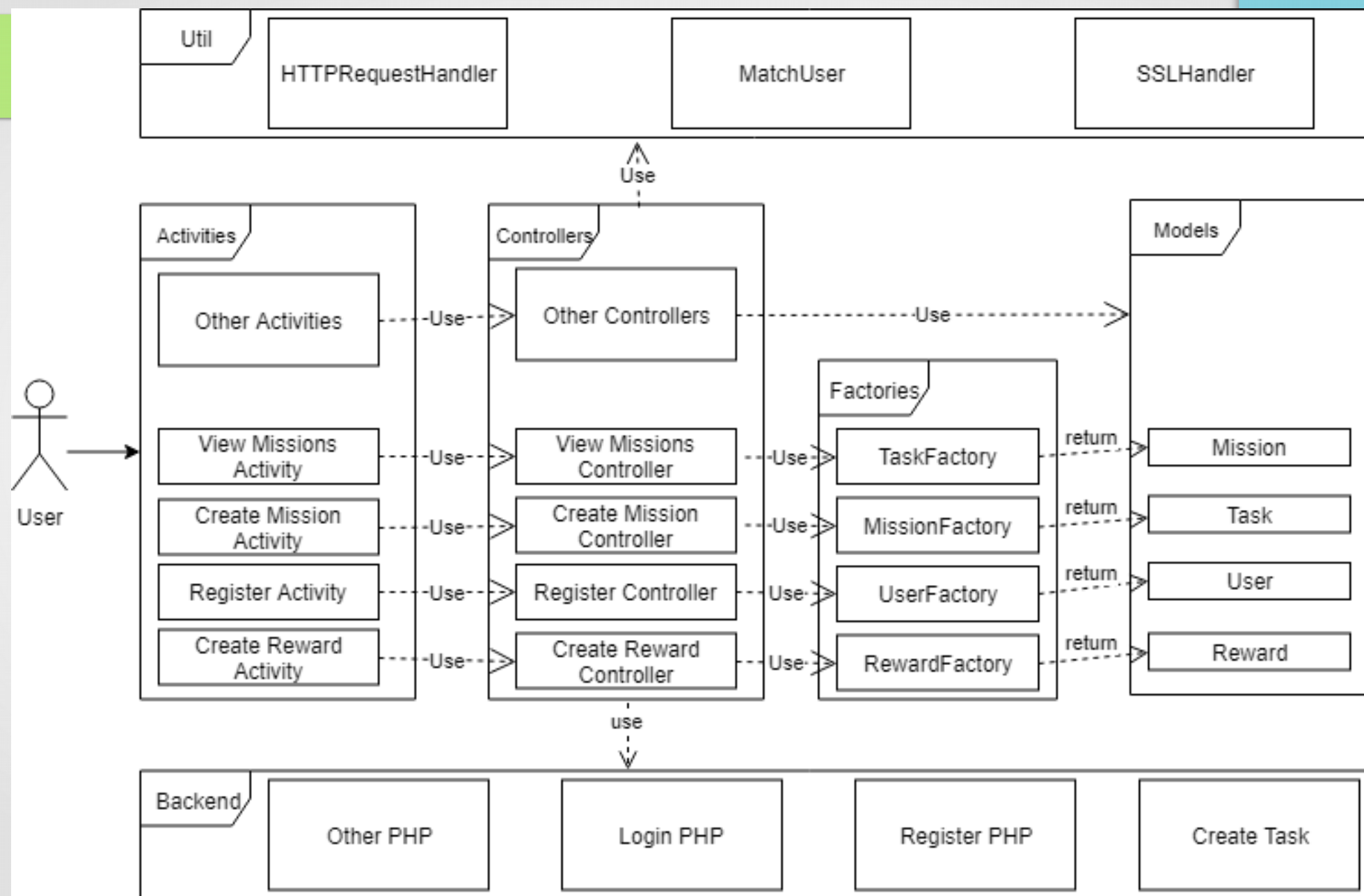


# Technology

CLASS DIAGRAM

TECHNICAL ABILITY

LIVE DEMO



# Technical Ability

- ▶ Account
- ▶ CRUD Missions
- ▶ CRUD Tasks
- ▶ CRUD Rewards
- ▶ Statistics
- ▶ Achievements

# Demo