

Software Engineering II: Project Organization and Management

Organization of the Exercises

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Exercise

- You can download the PDF for today's exercise in Moodle
- Review the slides on your computer
- Use the links in the slides to save time typing long URLs into your browser :-)

Exercise Philosophy

“Tell me and I will forget.

Show me and I will remember.

Involve me and I will understand.

Step back and I will act.”

— Chinese Proverb

Tutors



Diane
Xhymshiti



Mariana
Avezum



Ciprian
Lucaci



Amjad
Ibrahim

Outline

- Lecture and Exercise Schedule for the Semester
- Exercise Types
- Software Project
- Tools
- Ferienakademie Announcement
- Icebreaker

Preliminary Lecture Schedule, Wednesdays 8:15-9:45

- 1) April 15 Introduction
- 2) April 22 Project Organization I
- 3) April 29 Project Organization II
- 4) May 06 Software Lifecycle Models
- 5) May 13 Usability Engineering
- 6) May 20 Kanban
- 7) May 27 Change Management
- 8) June 03 Risk Management
- June 10 No Class**
- 9) June 17 Developing Winning Proposals
- 10) June 24 Estimation and Scheduling
- 11) July 01 tbd
- 12) July 08 Global Software Engineering
- 13) July 15 Project Management Antipatterns

Preliminary Exercise Schedule, Friday: 8:15-9:45

1) April 17 Organization of the Exercises & Team Icebreaker

2) April 24 Agile Methods

May 01 No Class

3) May 08 Meeting Management

4) May 15 Prototyping

5) May 22 Contracts

6) May 29 Branch and Merge Management

7) June 05 Testing and Continuous Integration

June 12 No Class

8) June 19 Continuous Delivery and Release Management

9) June 26 Estimation and Planning

10) July 03 Demo Management

11) July 10 Rationale Management

12) July 17 Repetitorium

Exercise Types

- **Team Exercise (always marked green in the slides)**
 - Learn advanced project management techniques and experience modern project management tools and workflows
- Case Study: Participate in a software project with 5 students and develop a mobile application
- Individual Exercise
 - **Interactive Tutorial (always marked brown in the slides)**
 - Participate in interactive tutorials during the exercise sessions
 - Resolve the tasks of the tutorial during the session
 - Solving these tasks also gives you the knowledge required for team exercises
 - Sometimes you also get homework :-)
 - **Quiz Questions (always marked purple in the slides)**
 - Answer to multiple questions given during lecture and exercise sessions



Exam and Bonus

- The exam will be based on the lecture content **and** exercises
 - ➔ Participation in the exercises gives you high chances to pass the exam with a good grade
- **Bonus:** You can obtain a bonus up to 1.4 for the exam grade by
 - 1) Participating in in-class exercises in the lecture
 - 2) Answering quizzes correctly
 - 3) Participating in individual exercises
 - 4) Creating certain deliverables in the team project
 - For each exercise and quiz you collect points
 - For each deliverable, your team (i.e. all members) collect points
 - At the end we sum up all points and map it to a bonus
 - **Important:** We can only apply the bonus to your exam grade, if you pass the exam with at least 4.0
 - **Important:** You cannot get a better final grade than 1.0

The exact bonus depends on your exam grade

Points	Bonus
0 % < Points < 20%	0.0
20% <= Points < 40%	0.3 -> 0.4
40% <= Points < 60%	0.7 -> 0.6
60% <= Points < 80%	1.0
80% <= Points <= 100 %	1.3 -> 1.4

Examples

Exam Grade	Exercise Points	Bonus	Final Grade
1.7	15%	0.0	1.7
2.3	45%	0.6	1.7
2.7	85%	1.4	1.3
4.0	55%	0.7	3.3
4.3	90%	1.3	fail
3.7	20%	0.4	3.3
3.7	40%	0.7	3.0
2.3	80%	1.3	1.0
1.7	60%	1.0	1.0

The bonus only applies if you pass the exam with at least 4.0

You cannot get a better final grade than 1.0

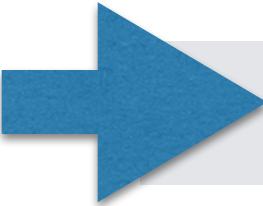
Software Project Plan

- The project is divided into five development phases, each two weeks long

Phase	Duration	Milestone
Warm-Up	April 17 - April 30	Project Organization Complete
1	May 01 - May 15	Project Plan Document
2	May 15 - May 29	Requirements Analysis Document
3	May 29 - June 12	System Design Document
4	June 12 - June 26	Object Design Document
5	June 26 - July 10	Source Code and Tests

Software Project: Project Plan

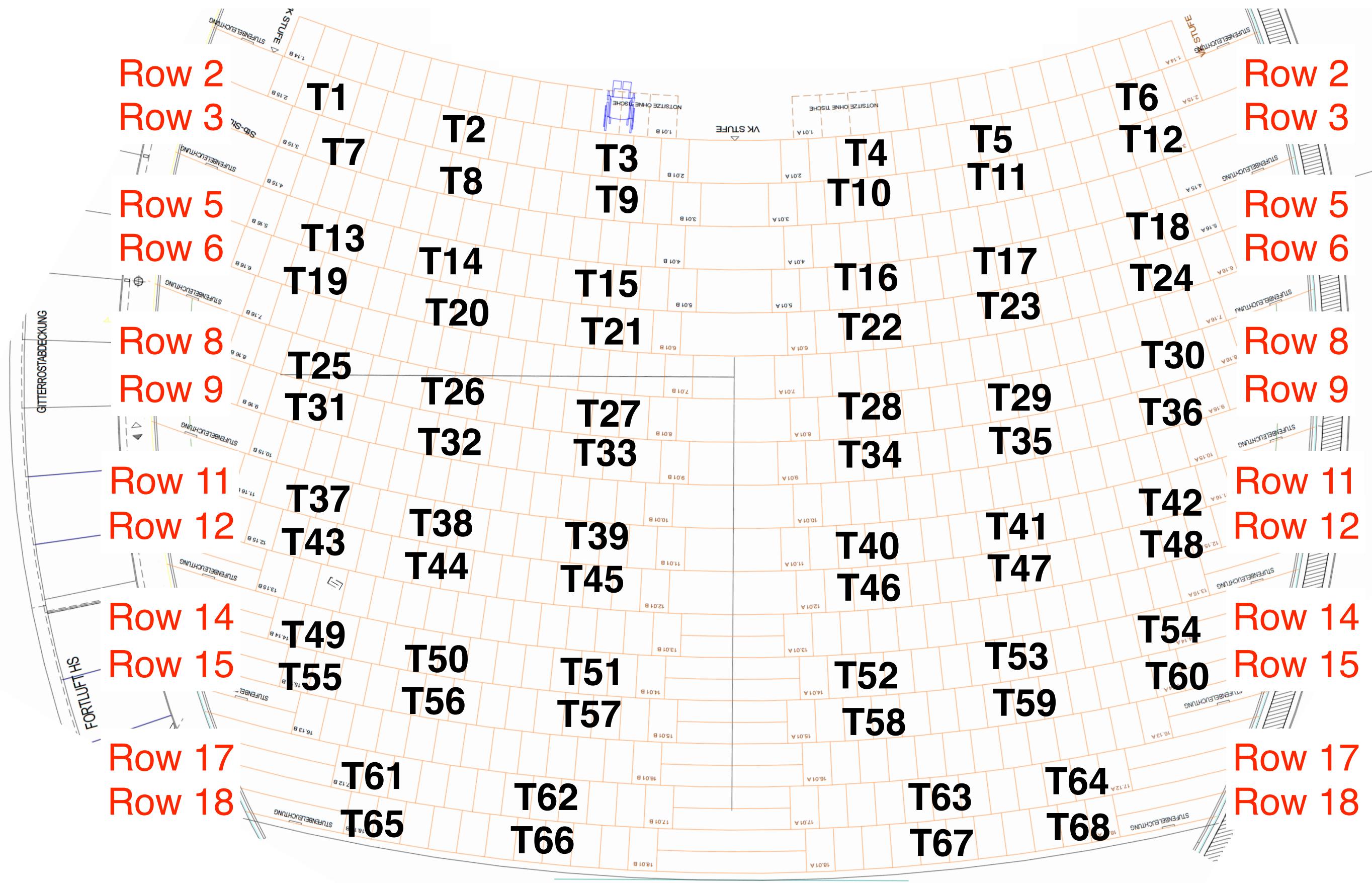
- The project is divided into warmup-phase and five development sprints, each two weeks long

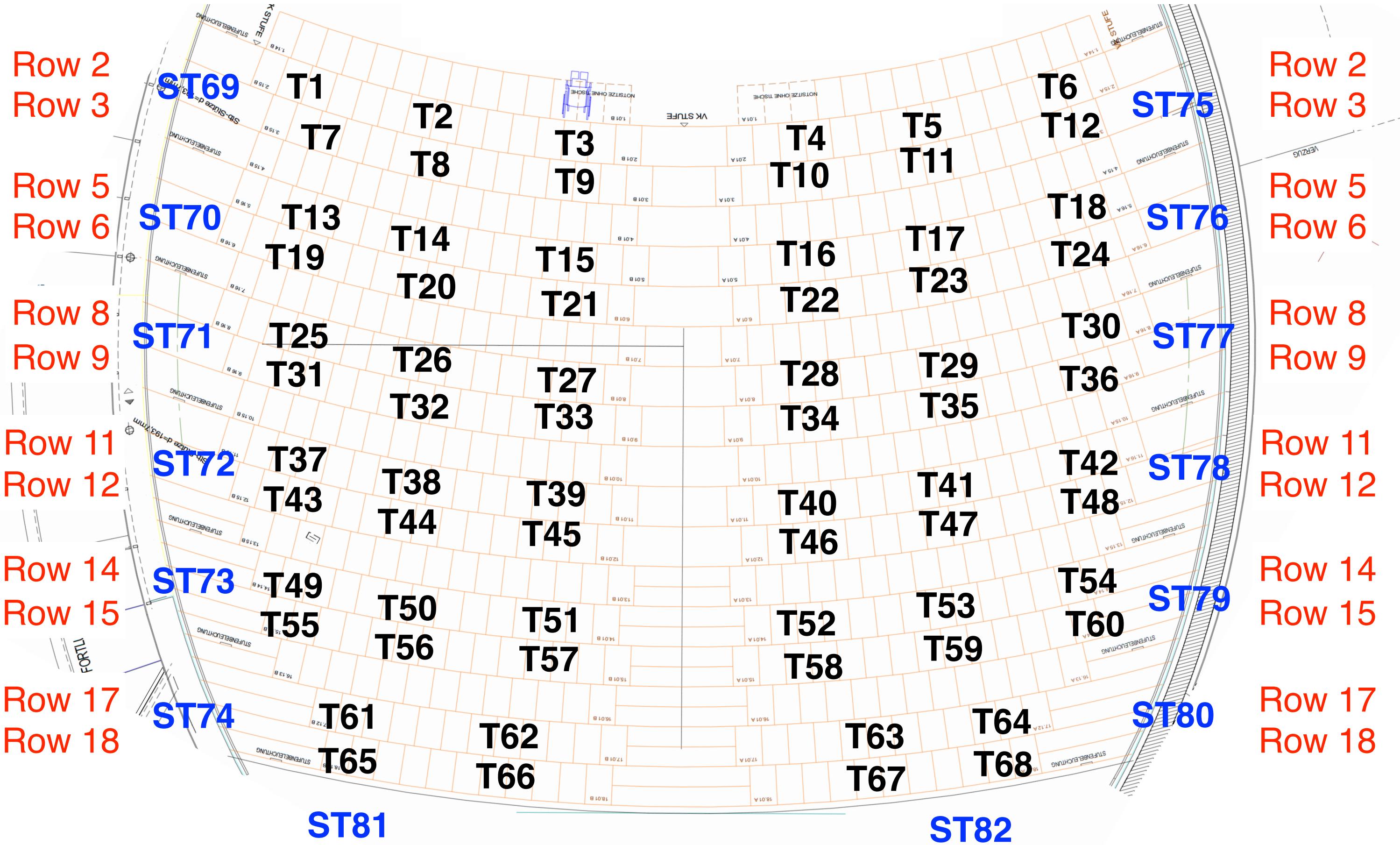


Phase	Duration	Milestone
Warm-Up	April 17 - May 08	Project Organization Complete
Sprint 1	May 08 - May 22	Potential Product Increment #1
Sprint 2	May 22 - June 05	Potential Product Increment #2
Sprint 3	June 05 - June 19	Potential Product Increment #3
Sprint 4	June 19 - July 3	Potential Product Increment #4
Sprint 5	July 3 - July 17	Potential Product Increment #5

Software Project: Project Organization

- We assigned you to a team
- Check the [Team Assignment List](#) in Moodle
- **Team Exercise: Find your team members and stay together for the rest of this class**





Team Balancing

- Based on yours answers from the surveys in the lecture, we created balanced teams on two project management heuristics
 - **Development Experience:** Each team should have at least one experienced developer
 - **Preferred Development Environment, Operating System and Smartphone:**
 - The team should have the same development preference (Android, iOS or Windows)
 - The team should be able to install the integrated development environment, also called IDE, (Android Studio, Xcode or Visual Studio) on their laptop
 - The team should be able to test the app on the target environment (Android Phone, iPhone/iPad or Windows Phone)

Seating heuristics for exercises

- Heuristic for the seating in the lecture hall during exercises from now on
 - Take a seat next to your team members, because we will have more team exercises in class
 - Leave every third row (1, 4, 7, 10, 13, 16) empty, so that the tutors can walk through these rows and help you

Software Project: Project Organization

- For each POM team we define 3 roles:
 - 1) Scrum Master: responsible for the process and resolves impediments
 - 2) Product Owner: defines the product and is responsible for results
 - 3) Developer: organizes itself and realizes product increments

→ More about these roles in Exercise Session 02
- Each POM team consists of 1 Scrum Master, 1 Product Owner and 3 Developers
- You rotate these roles in each Sprint so that everyone in the team experiences all three roles
- **Moodle Quiz Question #1: The rules Scrum Master, Product Owner and Developer describe what kind of project?**
- **Moodle Quiz Question #2: What kind of project organization do we propose for the team exercise?**
- **Team Exercise #1: Choose a team name by April 21**

Software Project: Problem Statement

- There are three different problem statements (in Moodle) that you can choose from
 - 1) [Flight App](#)
 - 2) [Reservation App](#)
 - 3) [Lecture App](#)
- **Team Exercise #2: Decide which problem statement you want to work on in your project by April 21**

Problem Statement Template

1. The Problem
2. Scenarios
3. Requirements
4. Target Environment
5. Deliverables
6. Schedule
7. Client Acceptance Test
8. Top-Level Design (optional)
9. Team Organization (optional)
10. Development Environment (optional)

Flight App Problem Statement

- Show flight information
- Add new flight trip
- Display destination information
- Give feedback
- Request service
- Watch flight safety rules

Reservation App Problem Statement

- Search for restaurants
- See restaurant details
- Filter search results
- Reserve table
- Save calendar event
- Confirm reservation
- Cancel reservation

University App Problem Statement

- Search for available lectures
- Check lecture details
- Update profile
- Add comments
- Request friendship
- Browse friends lectures
- See announcements
- Post updates to timeline
- See lectures calendar

Software Project: Target Platform

#	Target Platform	IDE	Development Computer	Programming Language	Smartphone Device
1	Android	Android Studio	Windows, Mac or Linux	Java	Android Smartphone
2	iOS	Xcode	Mac	Objective-C or Swift	iPhone / iPod or iPad
3	Windows Phone	Visual Studio	Windows	C#	Windows Smartphone

- You have to choose one of these platforms
- Notes: Choose the platform where your team has:
 - At least one Smartphone Device
 - Enough Development Computers (Laptop)
 - Experience with the IDE, Programming Language and Target Platform
- **Team Exercise #3: Decide as a team which platform you like to choose by April 21**

Software Project: Target Platform - more details

#	Target Platform	IDE	Development Computer	Download Link	Programming Language	Smartphone Device
1	Android 4.x or 5.x	Android Studio	Windows, Mac or Linux (http://developer.android.com/sdk/index.html#Requirements)	http://developer.android.com/sdk/index.html	Java	Android Smartphone
2	iOS 8	Xcode 6	Mac with OS X 10.10 (https://developer.apple.com/xcode)	https://developer.apple.com/xcode/downloads	Objective-C or Swift	iPhone / iPod or iPad
3	Windows Phone 8	Visual Studio 2013	Windows 8 Pro (64-bit) (https://msdn.microsoft.com/en-us/library/windows/apps/ff402529)	https://www.visualstudio.com/products/visual-studio-community-vs	C#	Windows Smartphone
	Windows Phone 7		Windows 8, 7 or Vista (http://www.microsoft.com/en-us/download/details.aspx?id=27570)			

- **Individual Homework: Install the IDE of the platform of your choice on your development computer by April 21**

Integrated Development Environment (IDE)

- Software application that provides comprehensive facilities to computer programmers for software development
 - Graphically design the user interface of an application
 - Edit, compile, debug, test, package the source code
 - Consists of a source code editor, build automation tools and a debugger.
- Most modern IDEs have intelligent features like code completion, immediate compile errors and refactoring
- Xcode is free (you need an AppleID)
- Android Studio is free
- For Visual Studio 2013 you have two options
 - 1) Visual Studio 2013 Community —> Free by default
 - 2) Visual Studio 2013 Professional —> Register at Microsoft DreamSpark: <https://www.dreamspark.com/Student/Default.aspx>

Software Project: Workflows

- As a technology manager and developer you have to **use** tools to collaborate and deliver artifacts
- In the exercises we use the following workflows:
 - Decision Making and Issue Tracking
 - Meeting Management, Documentation, Collaboration
 - Continuous Integration
 - Configuration Management
 - Continuous Delivery

Software Project: Workflows and Tools

- As a technology manager and developer you have to **use** tools to collaborate and deliver artifacts
- ➔ In the exercises we use the following workflows and tools:
 - Decision Making and Issue Tracking: **JIRA**
 - Meeting Management, Documentation, Collaboration: **Confluence**
 - Continuous Integration: **Bamboo**
 - Configuration Management: **Stash**
 - Continuous Delivery: **HockeyApp**
- ➔ We introduce these workflows and the associated tools in separate exercise sessions

Access to the Tools

- We created a **POM 15 Account** and send you an email with username and password
 - ➡ **Check your TUMOnline email for your account (also check the spam folder)**
- You can access these tools with your **POM 15 Account** on the following URLs:
 - JIRA: <https://jirabruegge.in.tum.de>
 - Confluence: <https://confluencebruegge.in.tum.de>
 - Bamboo: <https://bamboobruegge.in.tum.de>
 - Stash: <https://repobruegge.in.tum.de>
- ➡ Hint: Bookmark these links in your browser, because you need them several times from now on

This is your primary
TUMOnline email that
you see in our account



Use the same
email-address as
in your POM 15
Account

Individual Exercise 1: Configure your Account

Task 1: Login to JIRA to test your account

Task 2: Create an account at gravatar.com with your email address of TumOnline

Homework: Upload a real picture of yourself to Gravatar

- You can then use this picture for your profile in JIRA, Confluence, Bamboo and Stash

Task 1: Login to JIRA to test your account

The screenshot shows the LS1 JIRA System Dashboard. At the top, there is a blue header bar with the LS1 JIRA logo, navigation links for Dashboards and Agile, a search bar, and a Log In button. Below the header, the main title "System Dashboard" is displayed, along with a "Tools" dropdown menu. The central part of the page is a "Login" form. It contains fields for "Username" (pom15_krusche) and "Password" (represented by a series of dots). A red box highlights these two fields. Below the password field is a checkbox labeled "Remember my login on this computer". Further down, a message reads "Not a member? To request an account, please contact your JIRA administrators." At the bottom of the form is a "Log In" button, which is also highlighted with a red box.

Task 2: Create an account at gravatar.com with your TUMOnline email address

The screenshot shows the Gravatar homepage. At the top, there is a navigation bar with links for "What is Gravatar?", "How to Use Gravatar", and "Help". There are also links for "dict.leo.org", "WordPress.com", and a "Sign In" button. The main header features the Gravatar logo and the tagline "A Globally Recognized Avatar". Below the header, there is a descriptive text about what a Gravatar is, followed by two small thumbnail images of a man with a beard, one in a white frame and one in a black frame. To the right of these images is a profile card for a user named "Matt". The profile card includes a small blue Gravatar icon, the name "Matt", the location "embarcadero and townsend, sf ca", and a bio: "In 2002 I started contributing to Open Source software, and life has just gotten better from there. Co-founder of WordPress, founder Automattic.". A "View Complete Profile" button is located below the bio. At the bottom of the page, there are two calls-to-action: "Introducing Gravatar NAME" on the left and a large red-bordered "Create Your Own Gravatar" button on the right.

What is Gravatar? How to Use Gravatar Help dict.leo.org WordPress.com Sign In

Gravatar A Globally Recognized Avatar

Your Gravatar is an image that follows you from site to site appearing beside your name when you do things like comment or post on a blog. Avatars help identify your posts on blogs and web forums, so why not on any site?



Matt
embarcadero and townsend, sf ca
In 2002 I started contributing to Open Source software, and life has just gotten better from there. Co-founder of WordPress, founder Automattic.

[View Complete Profile](#)

Introducing Gravatar NAME

Create Your Own Gravatar

Task 2: Create an account at gravatar.com with your TUMOnline email address

WordPress.com ist auch verfügbar in [Deutsch](#)

 Signing up for Gravatar with WordPress.com

[I already have a WordPress.com account!](#)

Not sure what this is all about?
[We can help clear that up for you.](#)

E-mail Address

Username

Password

Triple-check your email. It's the only way we can contact you.

This is what we'll call you. It needs to be at least four letters or numbers.

Don't be afraid to use symbols like !"£ \$%^&() along with numbers and letters.

You agree to the [fascinating terms of service](#) by submitting this form.

[Sign up →](#)

A yellow callout bubble points to the "E-mail Address" field, which is highlighted with a red border. A red box also highlights the "Sign up →" button.

Task 2: Create an account at gravatar.com with your TUMOnline email address

Confirmation email sent!

We've sent an email to krusche+test@in.tum.de.

In the email you'll find a link that when clicked on will bring you back to the site and start using Gravatar.

If for some reason you do not receive the activation email, [contact us](#) and we'll do our best to get you back on track.

PLEASE check your junk/spam folder before contacting us, as it is very common to have email delivery problems because of automated filters.

Question & Answer Management

- If you have questions, check the Q&A Page in Confluence first. You can write new questions by adding a comment
 - <https://confluencebruegge.in.tum.de/display/POM15EXAMPLE/Questions+and+Answers>
- We offer additional Q&A Sessions every Wednesday between 10:30 and 11:30 with the tutors in the seminar room (01.07.014)
 - You can come and ask for help if you have severe problems finishing an exercise (e.g. you cannot login)
 - We will not help you with coding issues

Summer School Announcement: Ferienakademie 2015

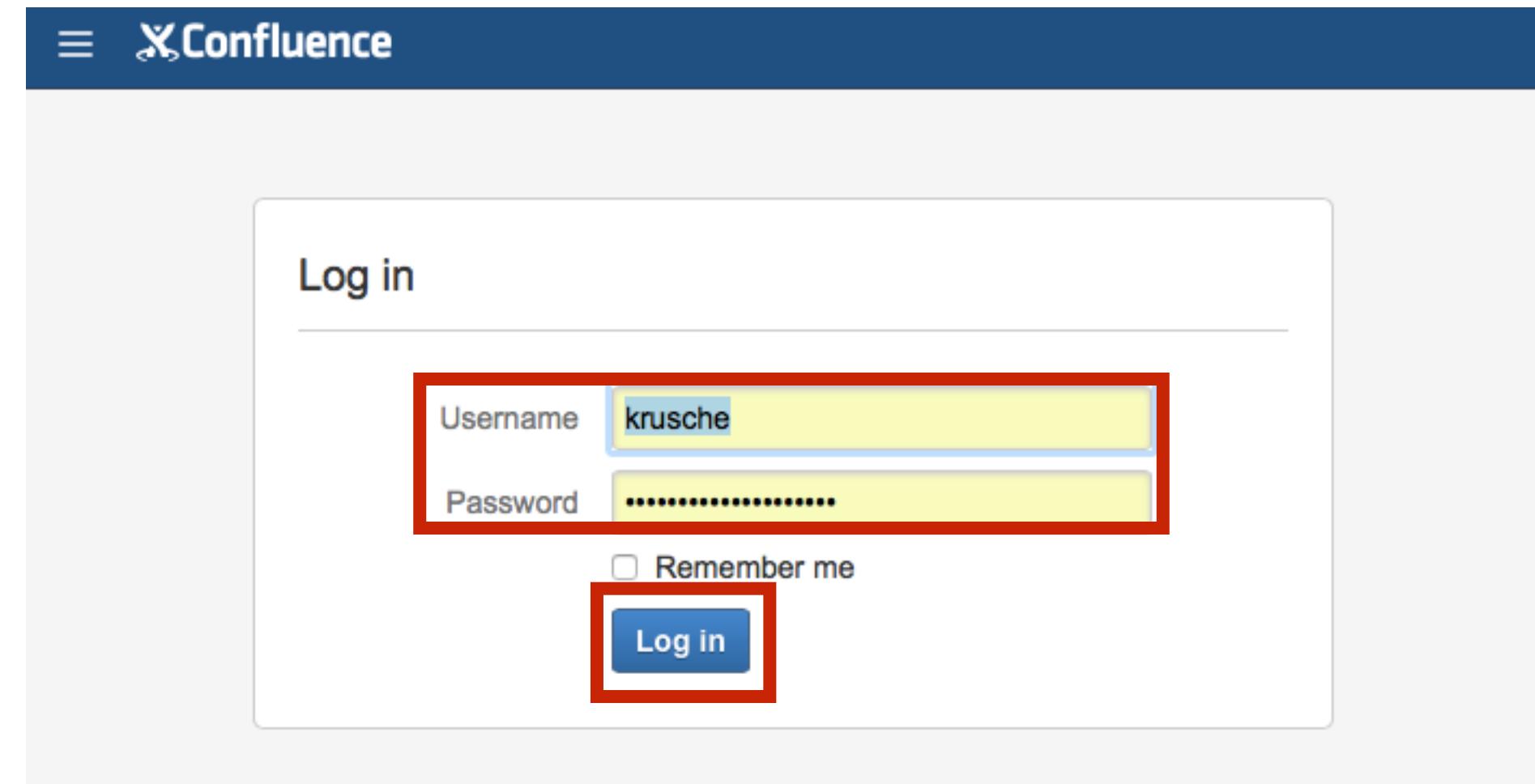
- <https://www.ferienakademie.de:8443/fa/student>
- More details in Lecture 02 Slot

The image shows a yellow header banner for the Ferienakademie 2015 application system. On the left is the FAU logo with the text "Friedrich-Alexander Universität Erlangen-Nürnberg". In the center is the TUM logo with the text "Technische Universität München". On the right is the University of Stuttgart logo with the text "Universität Stuttgart". Below these logos, the word "Ferienakademie" is written in large, bold, black letters. Underneath "Ferienakademie", there is a black horizontal bar containing the text "Ferienakademie > Online Application System" on the left and "Deadline May 10, 2015" on the right.

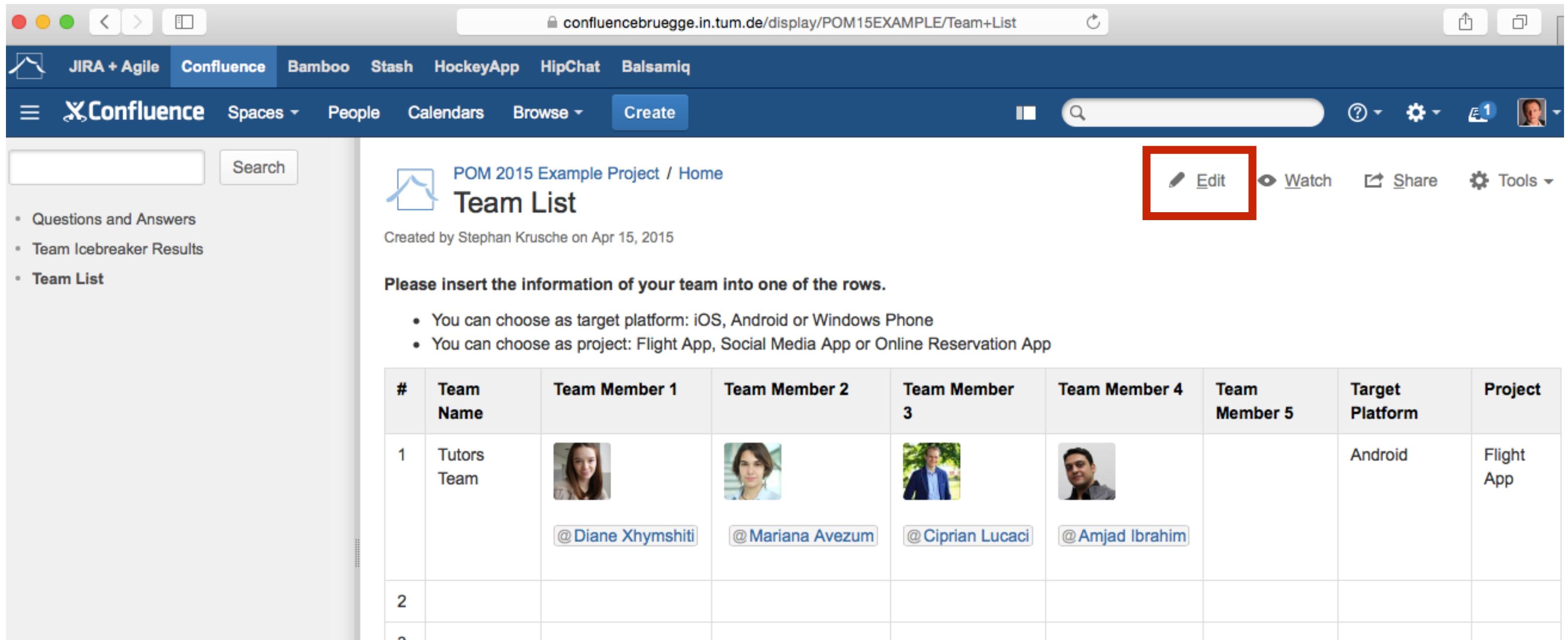
Summary

- **Your team exercise is due by April 21 (AOE)**
 - Choose your team name
 - Choose the target platform of your preference and the problem statement of your preference
 - Insert this information as well as your Confluence pictures into Confluence: <https://confluencebruegge.in.tum.de/display/POM15EXAMPLE/Team+List>
 - ➔ See a how-to in the following slides
- **Your individual homework is due by April 21 (AOE)**
 - Install the chosen IDE on your laptop that you bring to class
 - AOE = Anywhere on Earth: Have a look at <http://www.ieee802.org/16/aoe.html>

Login to Confluence



Open the URL, click Edit and change the table



The screenshot shows a Confluence page titled "Team List". The page is created by Stephan Krusche on April 15, 2015. It contains instructions to insert team information into a table. The table has columns for Team Name, Team Member 1, Team Member 2, Team Member 3, Team Member 4, Team Member 5, Target Platform, and Project. One row is visible, showing the "Tutors Team" with four members: Diane Xhymshti, Mariana Avezum, Ciprian Lucaci, and Amjad Ibrahim. The "Edit" button in the top right corner is highlighted with a red box.

#	Team Name	Team Member 1	Team Member 2	Team Member 3	Team Member 4	Team Member 5	Target Platform	Project
1	Tutors Team	 @ Diane Xhymshti	 @ Mariana Avezum	 @ Ciprian Lucaci	 @ Amjad Ibrahim		Android	Flight App
2								
3								

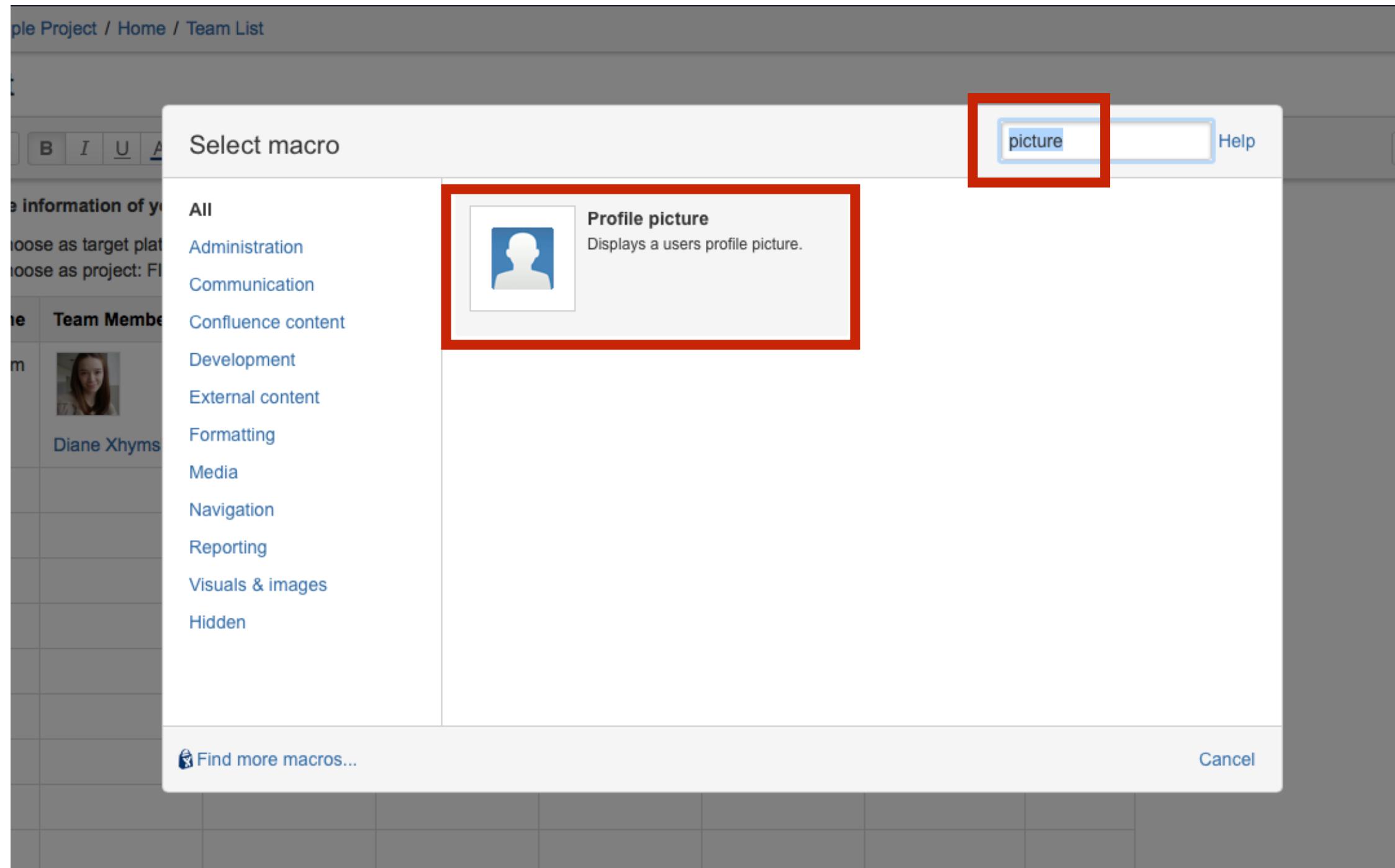
Reference Confluence Picture

- During Edit, choose + and then Other Macros

The screenshot shows the Confluence editor interface. At the top, there's a navigation bar with 'Confluence', 'Spaces', 'People', 'Calendars', 'Browse', 'Create', and a search bar. Below the navigation is a breadcrumb trail: 'POM 2015 Example Project / Home / Team List'. The main content area is titled 'Team List' and contains a table with four columns: '#', 'Team Name', 'Team Member 1', 'Team Member 2', 'Team Member 3', 'Team Member 4', and 'Team'. A row is filled with data: #1, 'Tutors Team', four user profile pictures, and their names: Diane Xhymshti, Mariana Avezum, Ciprian Lucaci, and Amjad Ibrahim. To the right of the table is a floating macro inserter with a red box highlighting the '+' button. A dropdown menu is open, also with a red box around it, showing various macro options like 'Image', 'Link', 'Attachment', etc., with 'Other macros' at the bottom also highlighted with a red box. A tooltip at the bottom right says 'Open the macro browser (⌘↑A)'. The table has a red border.

#	Team Name	Team Member 1	Team Member 2	Team Member 3	Team Member 4	Team
1	Tutors Team					
2						
3						
4						

In the Macro Browser, search for picture



Choose picture, type in your username and click insert

