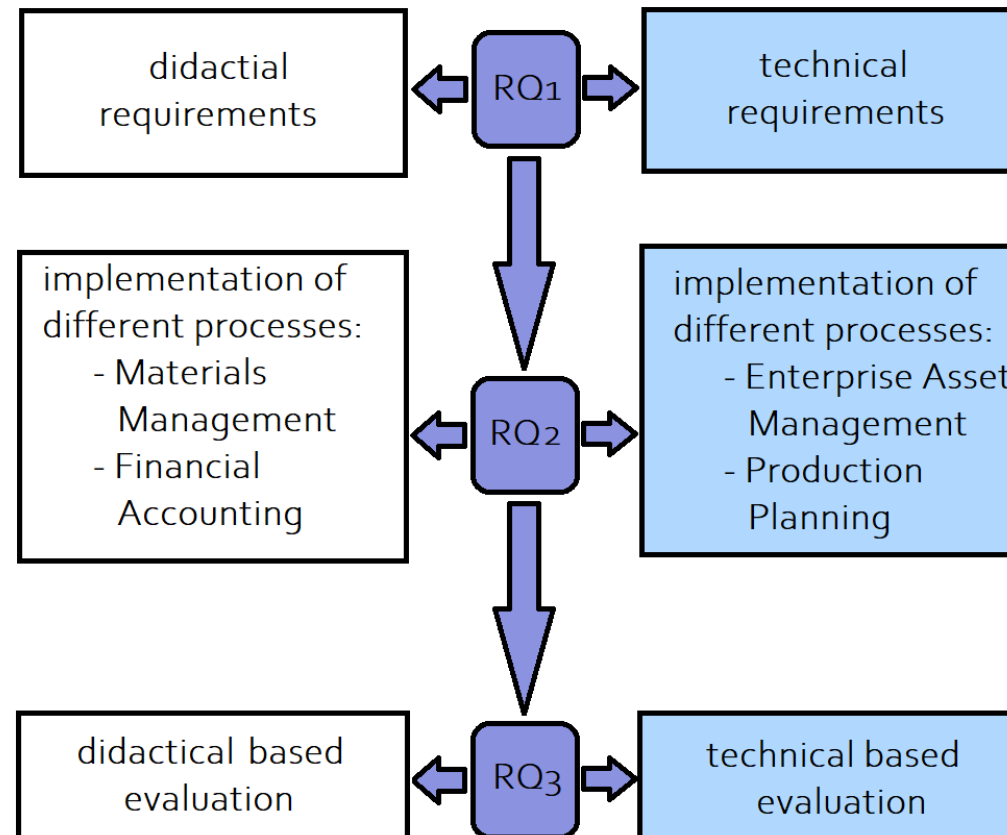


Abbildungen & Tabellen

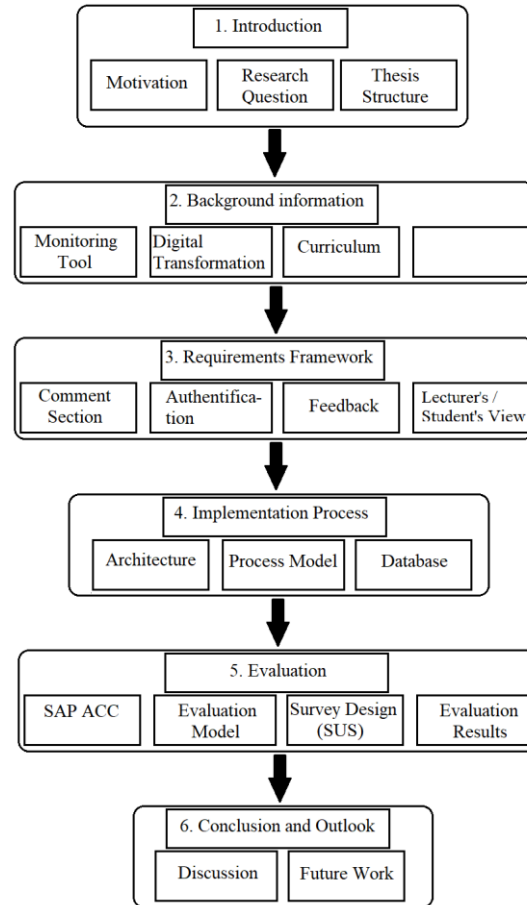
Furkan Gürbüz

03703701

Differentiation



Thesis Structure

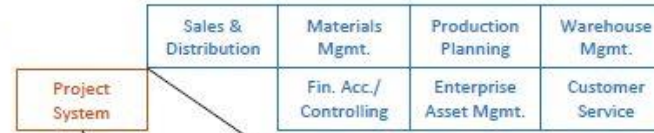


Literature Review Methodology

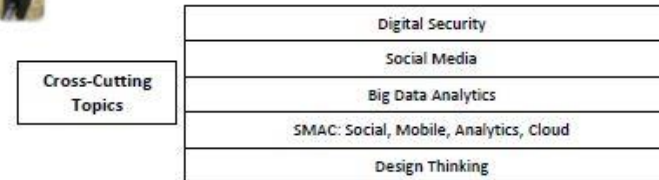
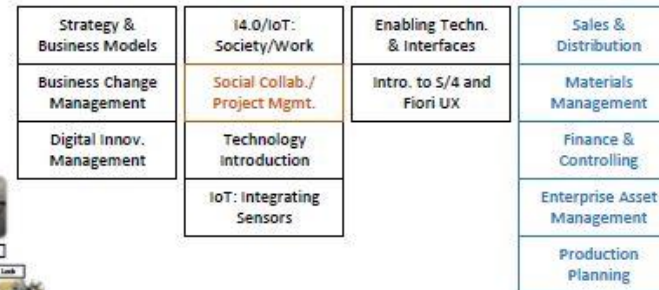
Actions	Results
Review Scope Define the databases to be queried	IEEE Xplore Digital Library, ACM Digital Library, AISEL, Scopus
Topic Conceptualization Only consider journal and conference articles using 2 queries.	479 total papers have been found
Literature Review Scanning of titles and abstracts	35 papers are considered relevant
Literature Analysis and Synthesis Reading the remaining papers	10 papers contain statements that can be transformed into requirements
Research Agenda Formulation requirements	24 requirements of 6 categories

Modules of Global Bike Company

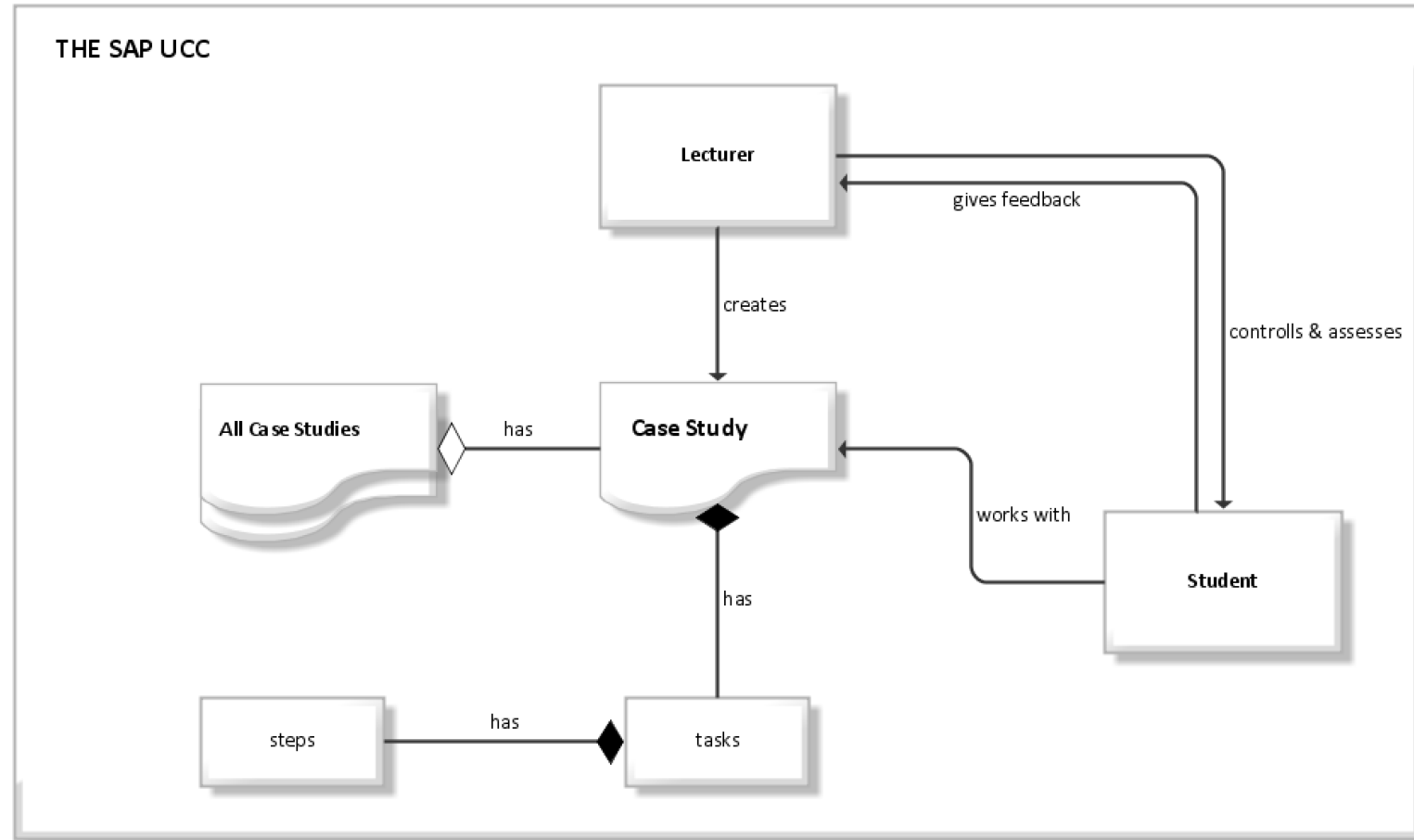
Today: GBI as a traditional manufacturing company



Tomorrow:
GBI as a bike-sharing
Product Service
System provider



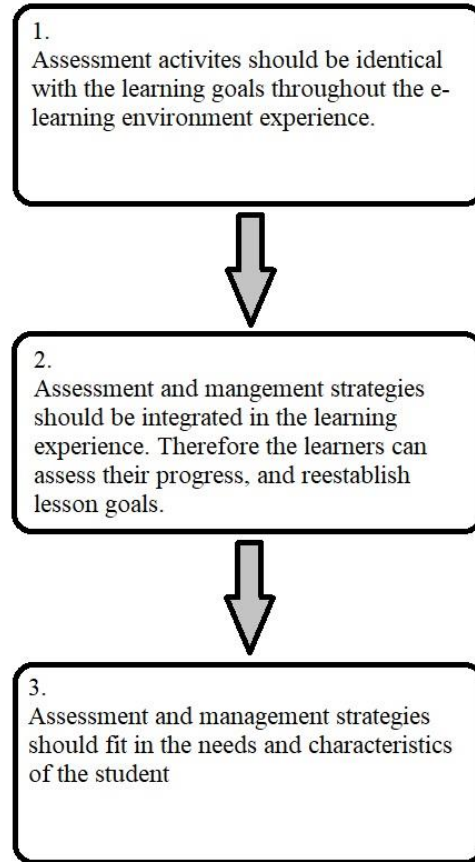
SAP UCC Case Studies



Use Case Organizational 1

Use Case	Login into the system (UC_OR1)		
Goal	Users can log in to the system and the system can detect the currently logged-in user.		
Preconditions	The User knows his/her login details		
Actor(s)	Lecturer/Student		
Main Success Scenario	1.	Lecturer/Student	types in the username
	2.	Lecturer/Student	types in the password
	3.	System	checks input values with the data values saved in the database: If input values are true redirects to the landing page; Else give out an error message
	4. Case: false	Lecturer/Student	starts from step 1 again.
	4. Case: true	System	checks the login details: If the username starts with GBS, then redirect to the student landing page; Else redirect to the lecturer landing page

Guidelines for e-learning assessment



Use Case Default 1

Use Case	The student selects a case study (UC_D1)		
Goal	The student wants to select the desired case study		
Preconditions	The student opened the website and logged himself/herself in (UC_OR1).		
Actor(s)	Student		
Main Success Scenario	1.	Student	clicks on dropbox
	2.	System	showcases hardcoded case study values
	3.	Student	clicks on desired case study
	4.	Student	clicks on arrow
	5.	System	checks entry values: If <u>true</u> redirect to the next page; Else give out an error message

Use Case Default 2

Use Case	The student sees the data (UC_D2)		
Goal	The Student wants to see the data of the selected case study (which he/she selected in UC_D1)		
Preconditions	The Student has done the actions of UC_D1, and the if case was identified as true by the system!		
Actor(s)	Student		
Main Success Scenario	1.	System	loads data from backend from specific student and case study
	2	Student	scrolls through the data and assesses his results

Use Case Admin 1

Use Case	Lecturer Selection of Student & Case Study (UC_A1)		
Goal	The Lecturer wants to select a specific student within a specific case study		
Preconditions	The Lecturer opened the website and logged himself/herself in (UC_OR1).		
Actor(s)	Lecturer		
Main Success Scenario	1.	Lecturer	clicks on the first dropbox
	2.	System	loads data from the backend
	3.	Lecturer	clicks on desired student ID
	4.	Lecturer	clicks on the second dropbox
	5.	System	showcases hardcoded case study values
	6.	Lecturer	clicks on desired case study
	7.	Lecturer	clicks on the arrow button to go to the next page
	7.	System	checks entry values: If <u>true</u> redirect to the next page; Else give out an error message

Use Case Admin 2

Use Case	Lecturer visualized the data (UC_A2)		
Goal	The Lecturer wants to see the data of the selected student and case study (which he selected in UC_A1)		
Preconditions	The Lecturer has done the actions of UC_A1, and the if case was identified as true by the system!		
Actor(s)	Lecturer		
Main Success Scenario	1.	System	loads data from backend from specific student and case study
	2	Lecturer	scrolls through the data and monitors the results

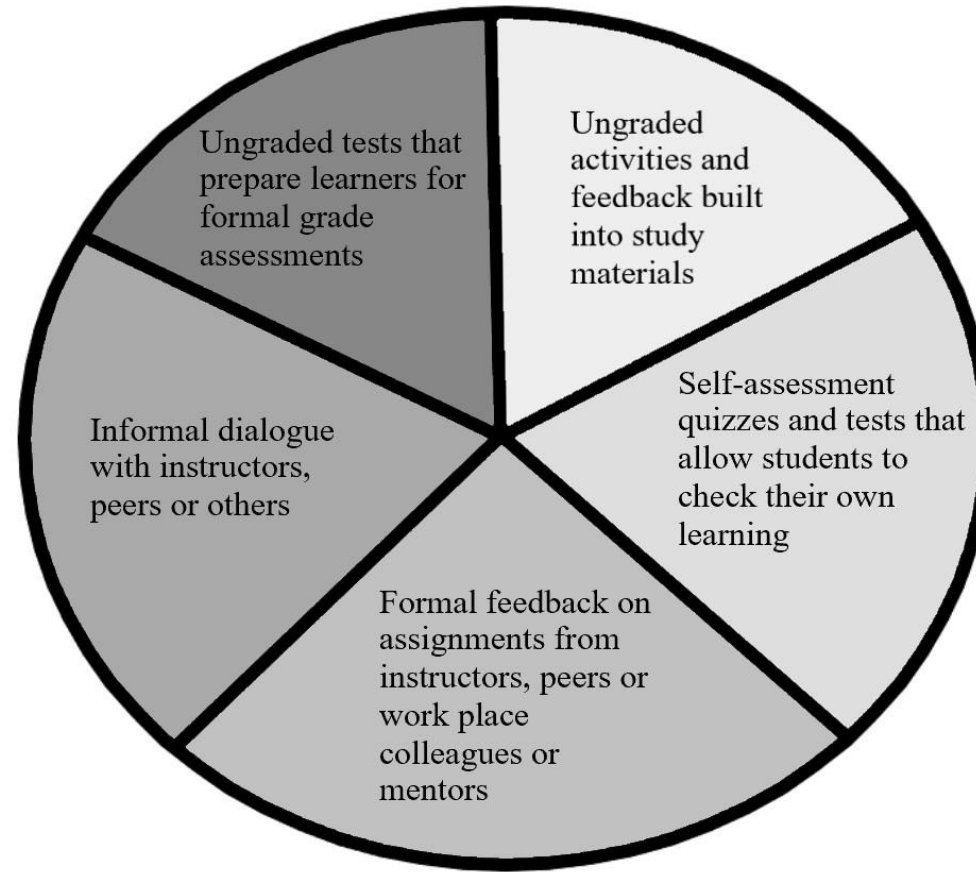
Use Case Admin 3

Use Case	Comment functionality for the lecturer (UC_CA1)		
Goal	The Lecturer wants to write a comment for the student within a case study, which were selected in UC_A1		
Preconditions	The Lecturer has already done UC_A1		
Actor(s)	Lecturer		
Main Success Scenario	1.	Lecturer	can write a comment on the student's task performance, or activity behavior, or learning progress for the selected case study and student
	2.	Lecturer	clicks on the comment section field and types in the comment
	3.	Lecturer	clicks on the send button
	4.	System	saves the typed-in comment into the database, with the specific user id and case study id.
	5.	System	If an error occurred during step 4, then the error message box is visualized; Else success message box is visualized

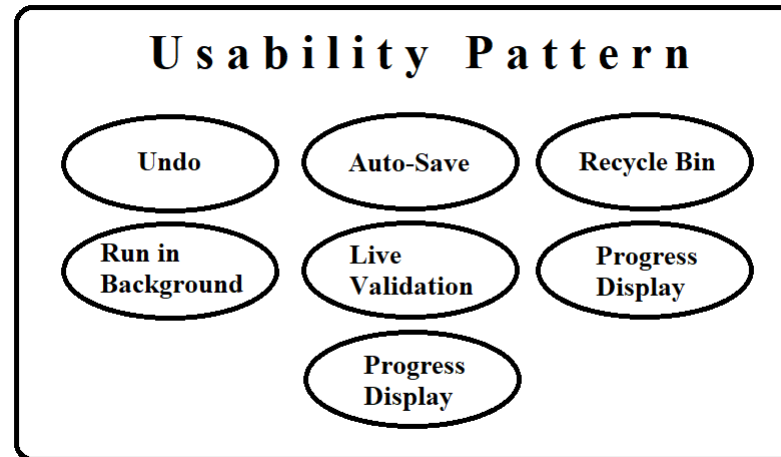
Use Case Admin 4

Use Case	Comment functionality for the student (UC_CD1)		
Goal	The Student wants to write a comment for the lecturer within a case study, which were selected in UC_D1		
Preconditions	The Student has already done UC_D1		
Actor(s)	Student		
Main Success Scenario	1.	Student	clicks on the comment section field and types in the comment
	2.	Student	Clicks on the send button.
	3.	System	saves the typed-in comment into the database, with the specific case study id.
	4.	System	If an error occurred during step 3, then the error message box is visualized; Else success message box is visualized

Assessment categories



Usability Pattern



Requirements from literature review

Requirement Identifier	Requirement Description
/OR01/ Access control	The system should differentiate between Admin and Default user, who has different levels of restrictions and adapt the UI accordingly
/SoAA01/ Fetching data of individual default user	The admin should be able to fetch students data from the database with a dialog (calling students id)
/SoAA02/ Fetching data of case study	The admin should be able to fetch data of selected case study from a drop-down menu
/SoAA03/ Visibility of data	The admin should be able to confirm and graphically see the data by pressing a button
/SoAA04/ Deletion of Selection	Admin can delete the entries (UI based) from SoAA01 and SoAA02
/SoAA05/ Activity Control	The admin can monitor the activity of the student. Therefore every SoAD needs to have a unique identifier, which needs to be saved in the database.

/CS01/ Admin Comment	The admin should be able to comment inside a comment section on the student's solution (asynchronous interaction).
/CS02/ Default User Comment	The default user should be able to respond to the comment of the admin or write a new comment to the admin (asynchronous interaction).
/CS03/ Visibility	The Comments inside the comment section are only visible for concerned users
/SoAD01/ Selecting Case Studies	The default user should be able to select a specific case study from a drop-down menu.
/SoAD02/ Visibility of Selection	The default user should be able to confirm and graphically see his/her results by pressing a button.
/SoAD03/ Delete selection	The default user should be able to delete (UI-based) the selection of SoAD01.
/SoAD04/ Overall Success rate	The default user should be able to see the overall success/failure rate by clicking on a button.

/FB01/ Admin feedback	the admin should be able to give a total grade/points for the selected default user within the whole case study. This feedback should be only visible to the concerned user. Therefore the points/grade has to be saved with the default users id
/FB02/ Default User feedback	The default user should have once permission to give feedback to the admin for a specific case study. This feedback should be sent (and saved in the database) to the admin's feedback page
/FB03/ Visibility feedback page (Admin)	The admin should be able to see all the feedback gathered on the feedback page (send by FB02).
/FB04/ Visibility feedback page (Default user)	The default user just should see one feedback for each case study on his/her feedback page (from FB01).
/NF07/ Usability	The user should be able to navigate throughout the tool within 3 steps

Basic Fiori UI Sample

The screenshot displays a Fiori application interface for a sales order. The interface is characterized by a blue, aqua, and white color theme. Annotations with blue arrows point to specific UI elements:

- Toolbar:** Located at the top right of the application window.
- important key values:** Points to a box containing the sales order ID (5000000008) and the order amount (164.00 USD).
- Tabs:** Points to the tab bar at the top of the main content area, which includes 'General Information', 'Sales Order Items', and 'Contacts'.
- simple data showcase:** Points to the 'Sales Order Items' table, which displays a list of items with columns for Item Position, Product ID, Total Gross Amount, Total Net Amount, Total Tax Amount, and USD Currency Code.
- blue, aqua, and white colour theme:** Points to the overall styling of the application.
- Footer:** Located at the bottom of the application window, containing the text 'Customize Action 1'.

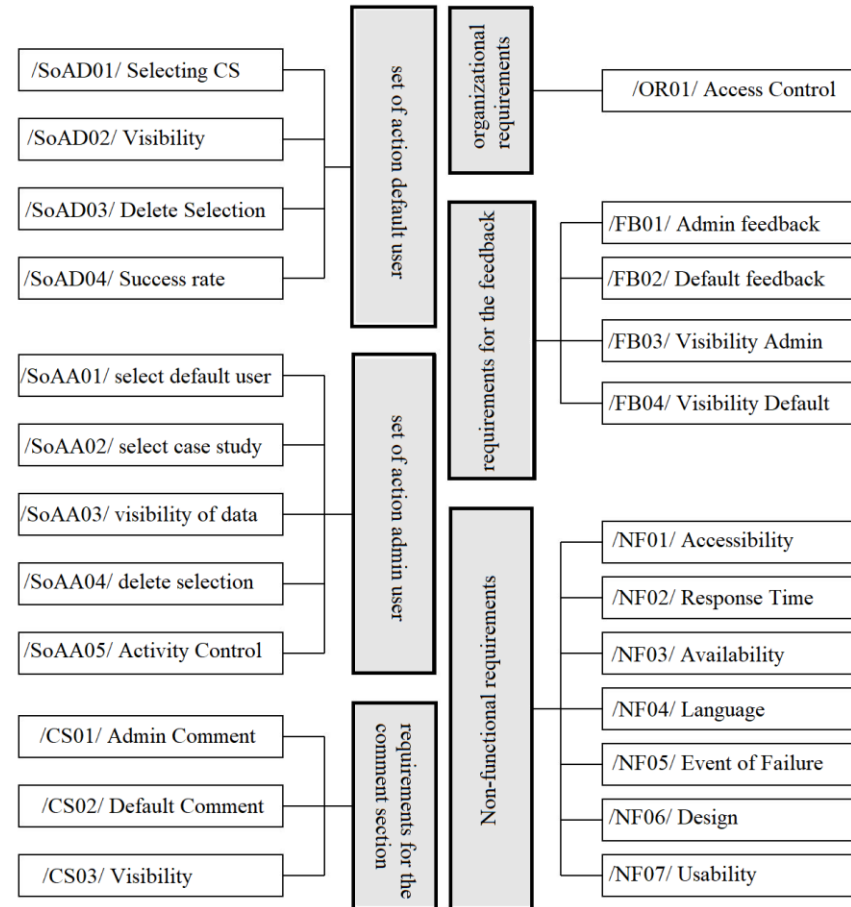
Sales Order Items Table:

Item Position	Product ID	Total Gross Amount	Total Net Amount	Total Tax Amount	USD Currency Code
1A	HIT-1000	21.42 USD	18.00 USD	3.42 USD	United States Dollar (USD)
2B	HIT-1001	14.00 USD	14.00 USD	0.00 USD	United States Dollar (USD)
3C	HIT-1002	30.18 USD	25.00 USD	5.18 USD	United States Dollar (USD)
4D	HIT-1003	45.96 USD	40.00 USD	5.96 USD	United States Dollar (USD)
5E	HIT-1004	10.04 USD	10.00 USD	0.04 USD	United States Dollar (USD)
6F	HIT-1005	61.60 USD	50.00 USD	11.60 USD	United States Dollar (USD)

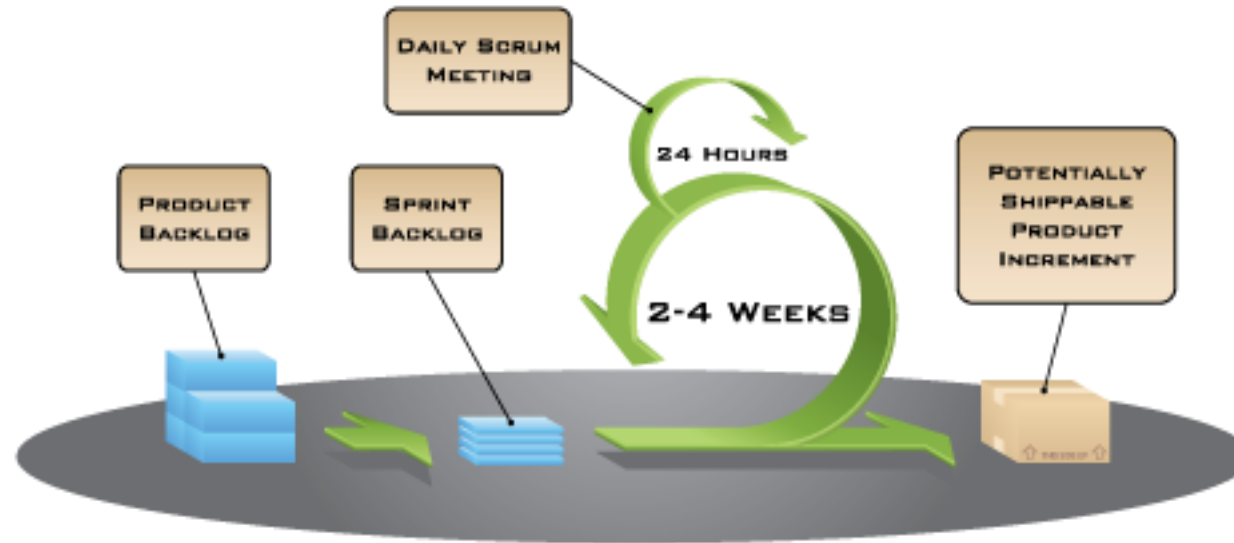
Requirements from existing solutions

Requirement Identifier	Requirement Description
/NF01/ Accessibility	The tool should be accessible with web browsers (Firefox, Chrome, etc.)
/NF02/ Response Time	The average response time should be less than 5 seconds
/NF03/ Availability	The tool should be available 99% times
/NF04/ Language	The tool should be in German and English
/NF05/ Event of Failure	When the tool crashes, it should be able to back up to its previous state
/NF06/ Design	The tool should maintain the overall design concept of SAP FIORI

Requirement Results

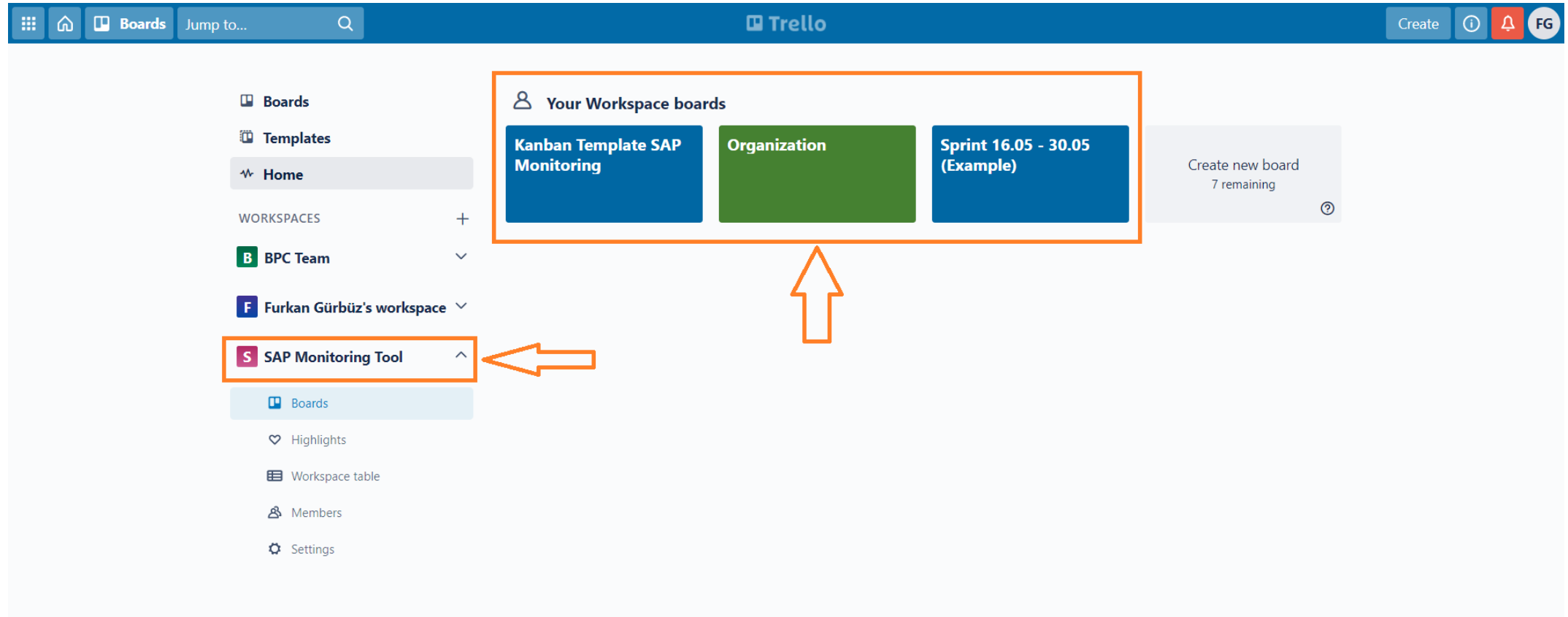


Typical Scrum lifecycle model

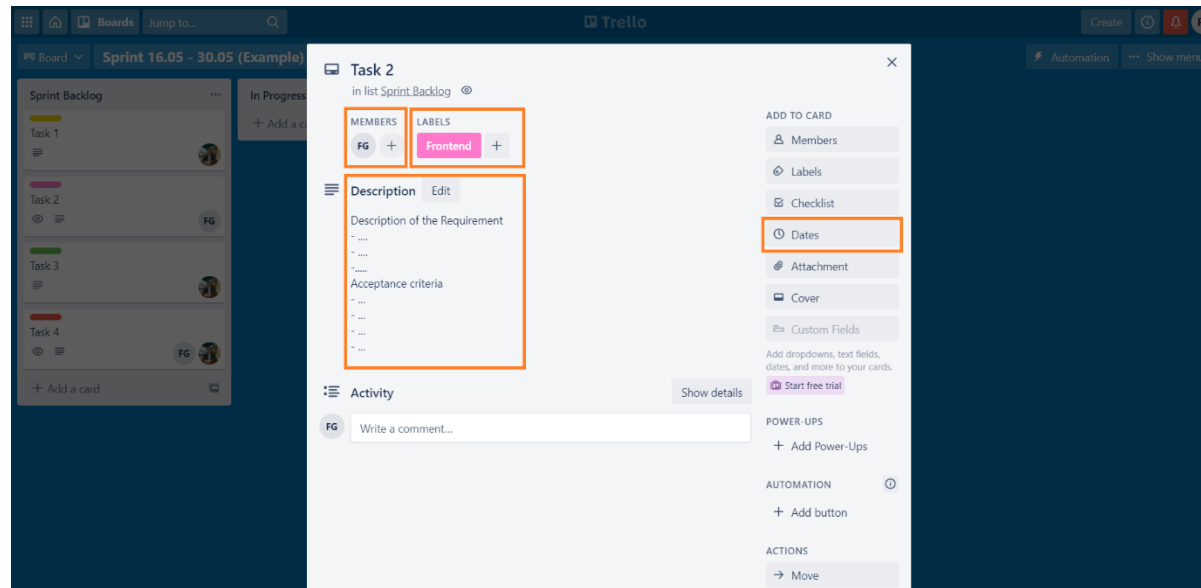


COPYRIGHT © 2005, MOUNTAIN GOAT SOFTWARE

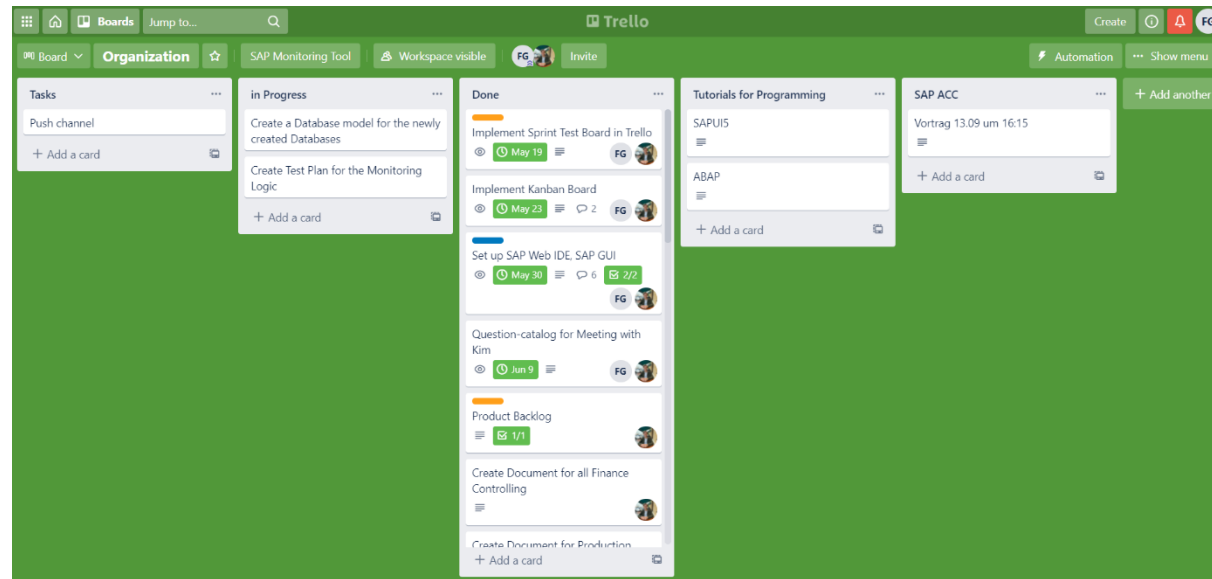
Trello Workspace



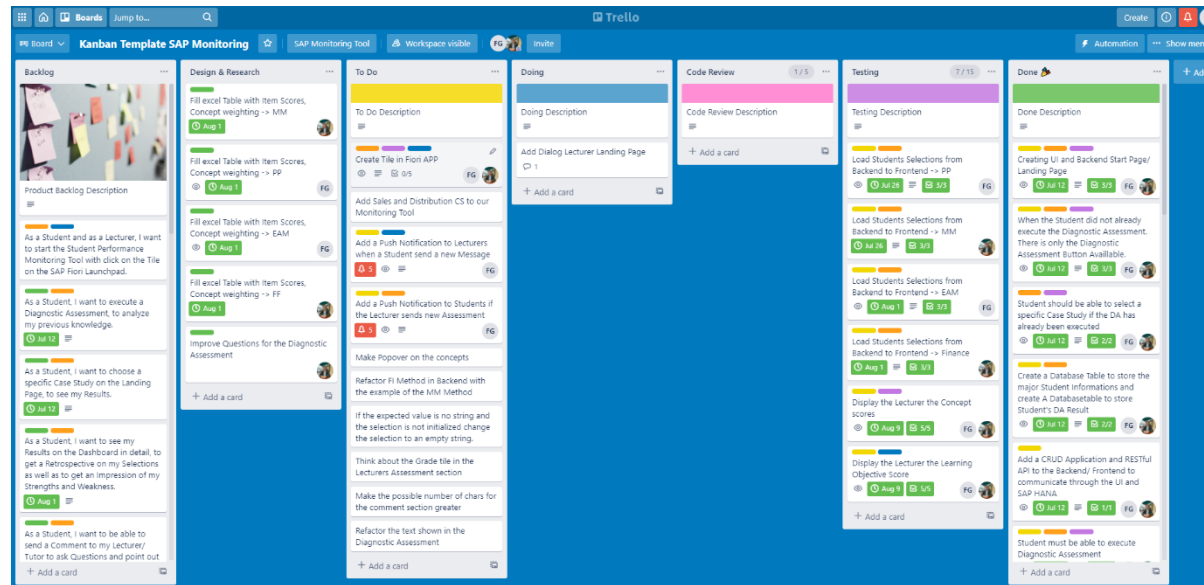
Trello Task description



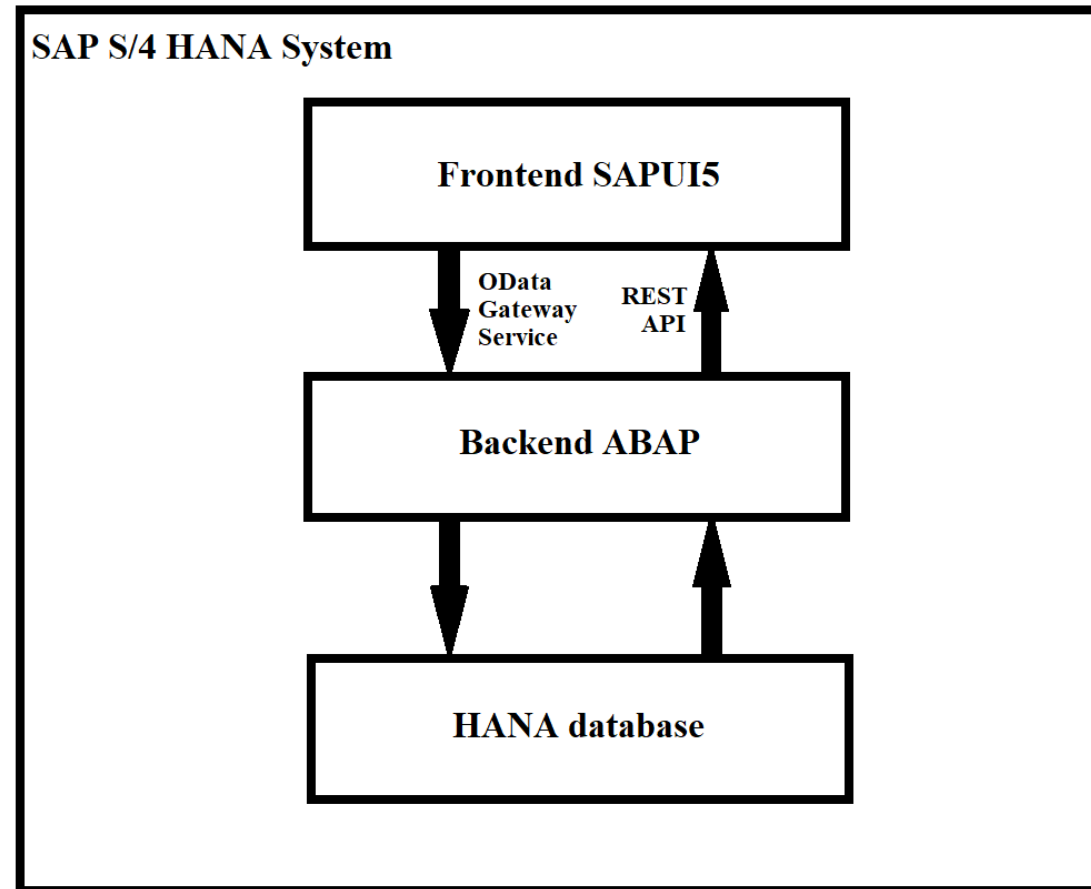
Trello Organizational Board



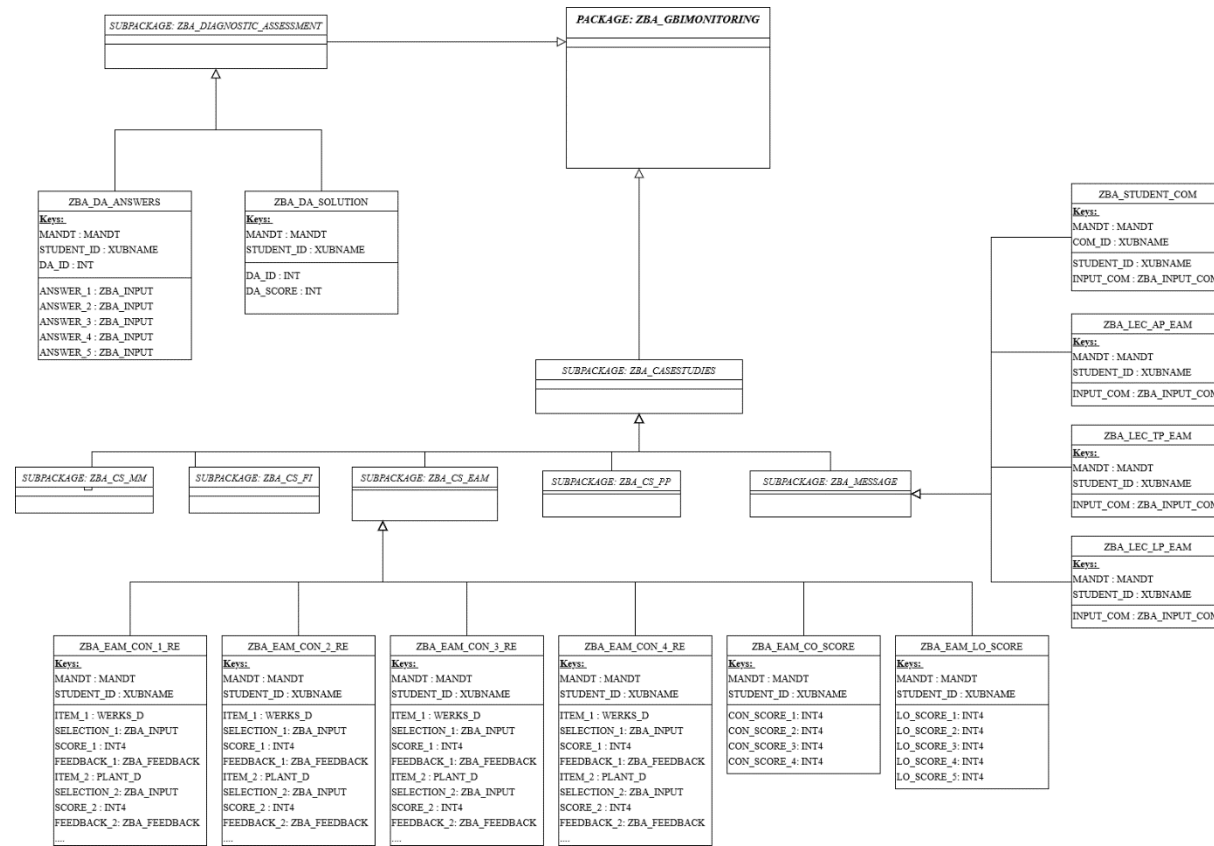
Trello Main Kanban Board



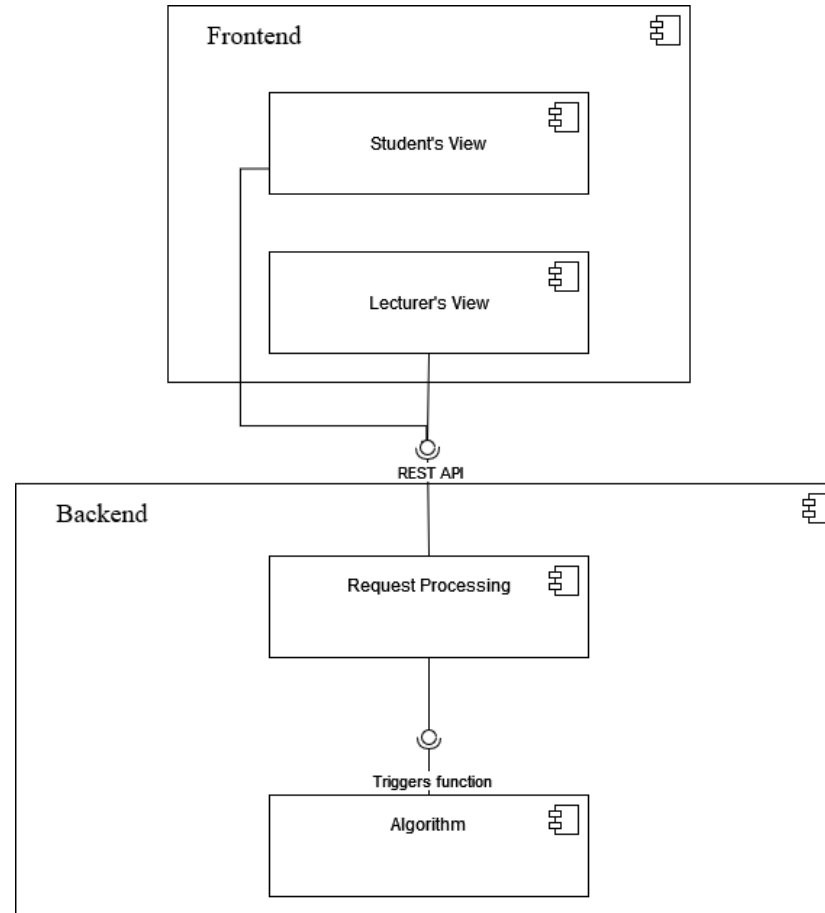
SAP S/4 Hana System



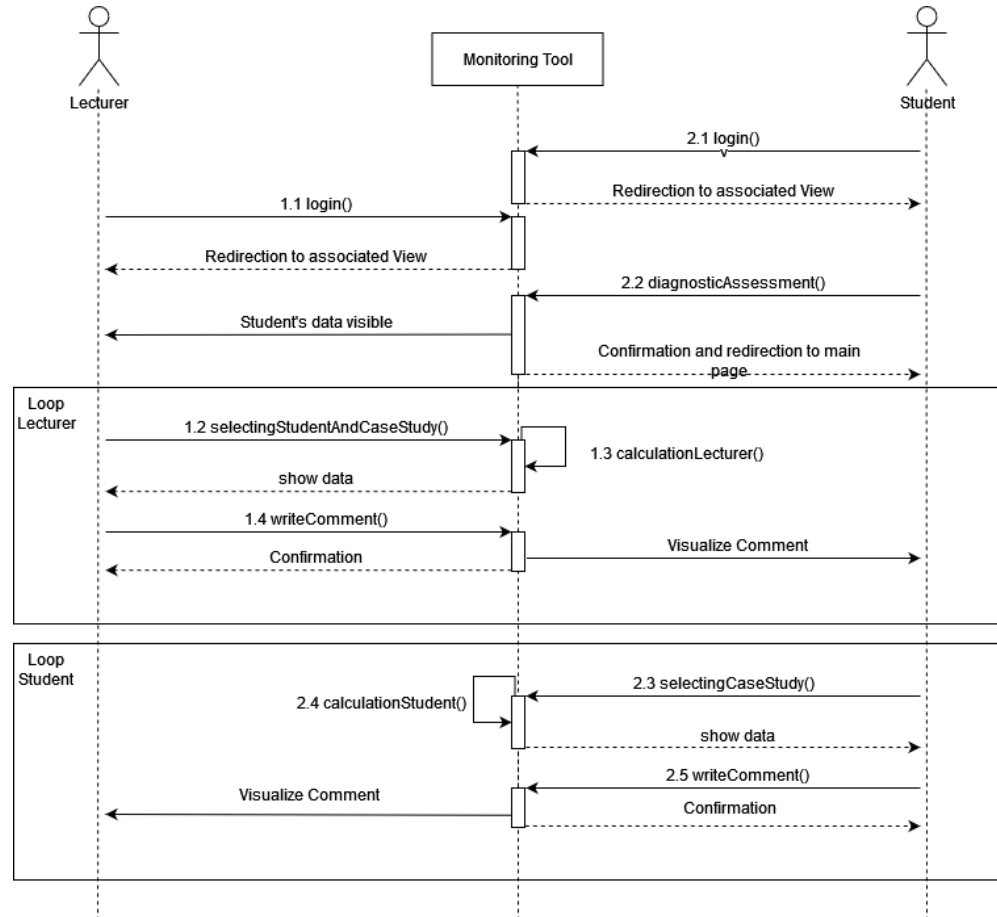
Conceptual UML data model



Component diagram




Sequence diagram



Lecturer Landing Page


Lecturer's Landing Page

Welcome to the GBS Student Performance Monitoring Tool

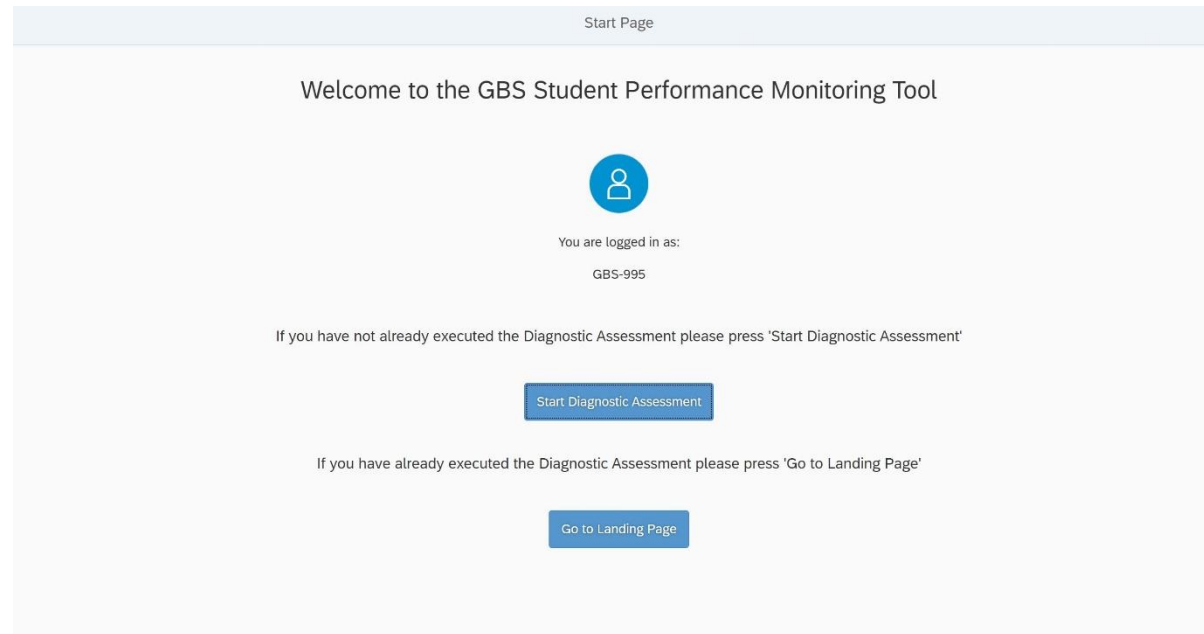


You are logged in as:

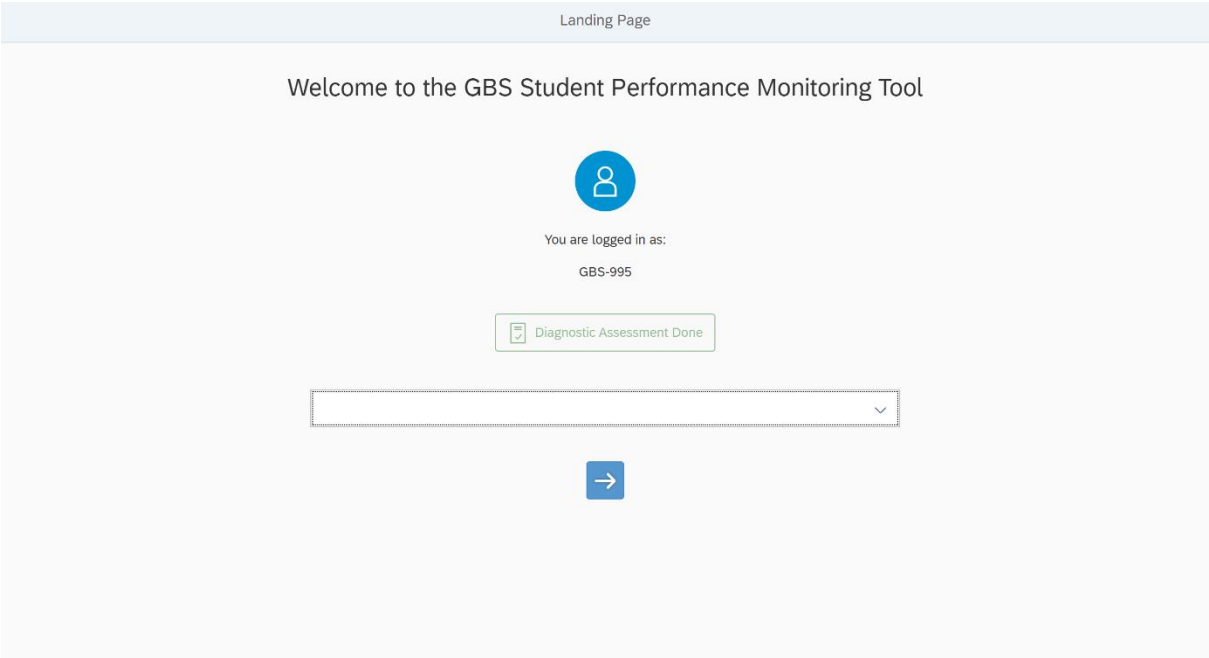
Lecturer



Student Pre-landing Page



Student Landing Page



Student Dashboard for Production Planning

Dashboard for Production Planning

Learning Objective: Understand how the Digital Transformation changes Production Planning

Create Material Master Data

Create Production Master Data

Demand Management

Start Production Order

Confirm Production Completion

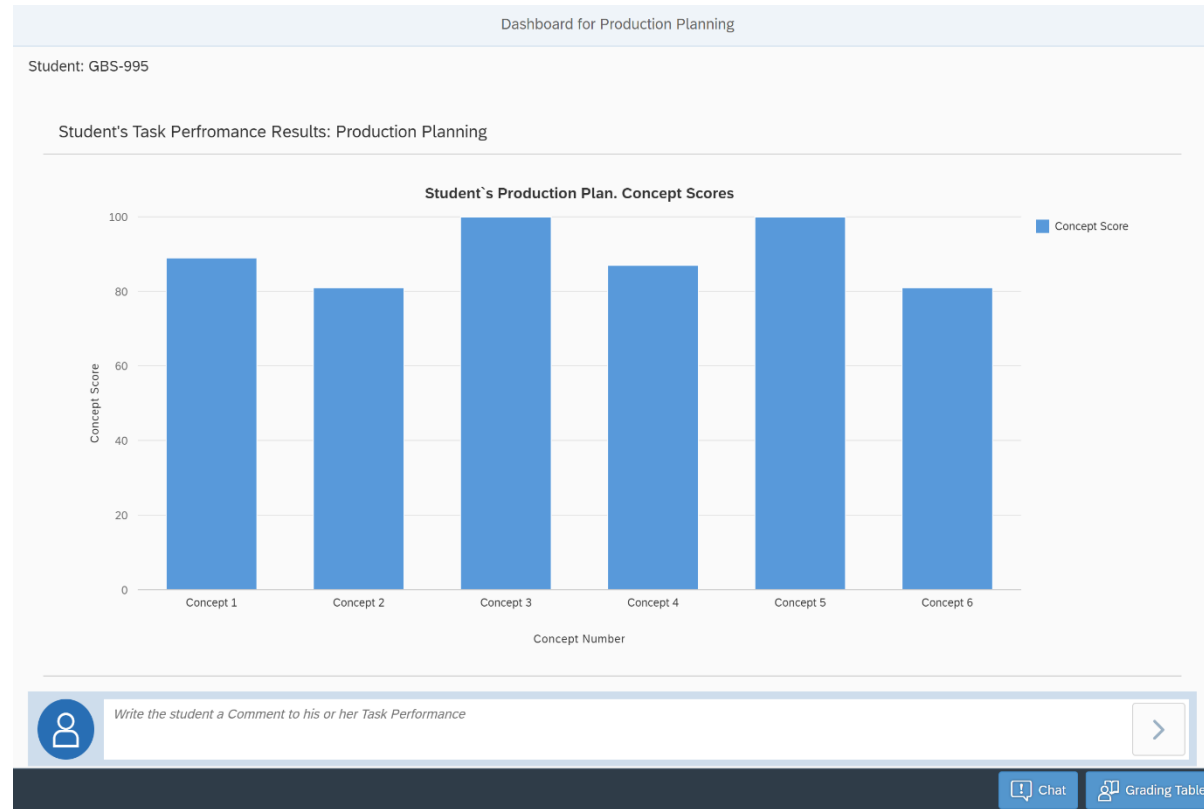
Process Stock Transport

Concept Task: To be able to use the Bikes for the bike rental services, the bikes have to be transferred to Munich. First, the material master data for the bike, as it was created in task 1, has to be copied to the plant in Munich. Second, a stock transport order has to be created for the material transfer. Third, a goods issue has to be posted in plant Dallas, followed by a goods receipt in plant Munich. Thereby, the physical transport of the materials can be

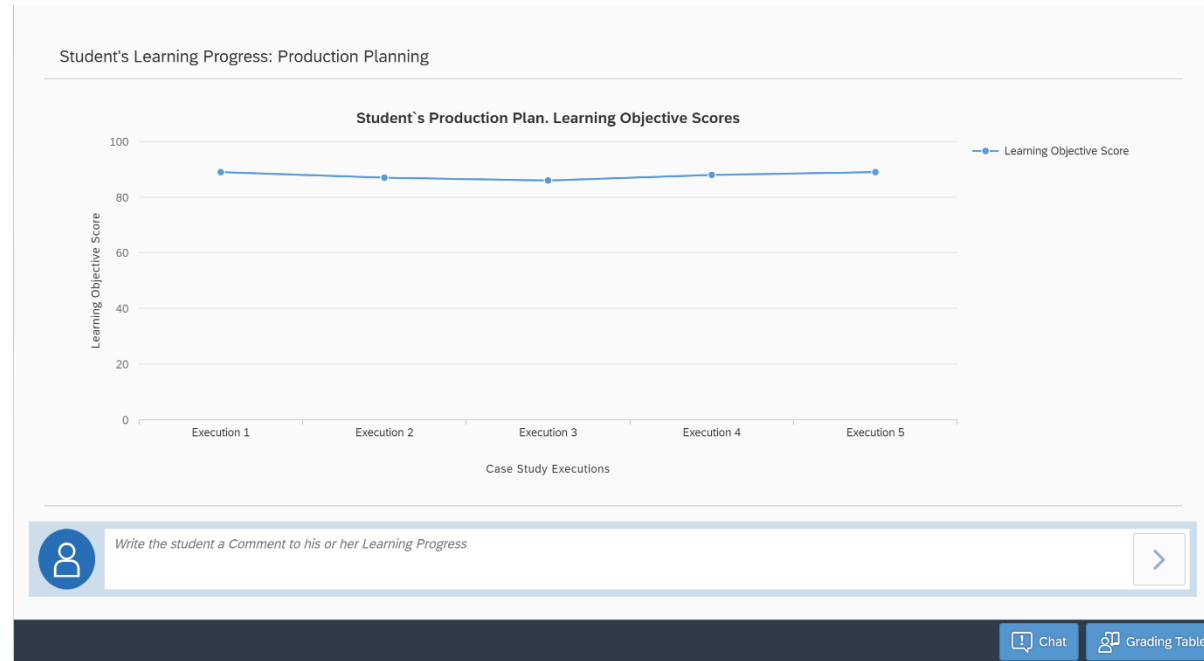
Item	Your Selection	Score	Feedback
Material Number	DXTP1995	100 %	Perfectly done
Material type	Finished Product	100 %	Perfectly done
Industry Sector	Retail	100 %	Perfectly done
Plant	MU00	100 %	Perfectly done
Standard Price	400.00	20 %	You selected an unexpected value for the Standard Price. Please have a look once again in the Case study what the item is about!
Unrestricted Use	5.000	100 %	Perfectly done

→ Lecturer's Assessment

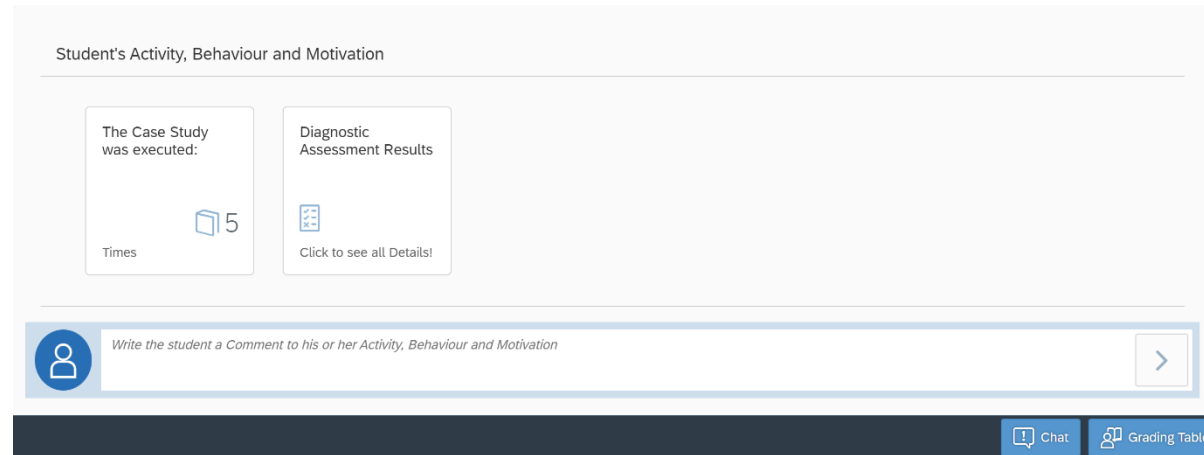
Lecturer Dashboard for Production Planning




Dashboard for Production Planning 2



Dashboard for Production Planning 3



Diagnostic Assessment Results Page

Diagnostic Assessment Results		
<div><div></div><div>Here you can see all given answers of student GBS-995. Thereby 'X' stands for the answer Yes, '-' stands for the answer No. The first column of this table shows the questions that have been chronologically asked the student. The second column shows the student's answer given to the specific question. The third column shows the average percentile score of how many students who executed the diagnostic Assessment answered this question with 'Yes'.</div></div>		
Diagnostic Assessment Result of Student: GBS-995		
Sum of all Students executed the Diagnostic Assessment: 6		
Question	Answer	Average Score of Students who answered this question with 'YES'
(1) I have already worked actively with SAP S/4HANA and know exactly how to use it. For example in a working student job or an internship.	-	66.6666666666667 %
(2) I am aware of the impact to which the structure of the Materials Management, Production Planning, EAM and Finance business units will change as a result of GBI's digital transformation.	X	33.33333333333336 %
(3) I am taking this course because I want to train to work with SAP S/4HANA and to understand how it works and how it is structured. The goal is to get an expert in working with SAP S/4HANA.	X	100 %
(4) Ideally, I would like to try to go through each case study at least three times, so that the knowledge I have gained in the context of digital transformation and SAP ERP will be improved.	-	33.33333333333336 %
(5) I will consciously use the Student Performance Monitoring Tool to self-reflect my results and to see in the retrospective which concepts I am still struggling with	X	100 %

Comment functionality Student

Create Material Master Data

Create Production Master Data

Demand Management


Start Production Order

Confirm Production Completion


Process Stock Transport

Concept Task: To be able to use the Bikes for the bike rental services, the bikes have to be transferred to Munich. First, the material master data for the bike, as it was created in task 1, has to be copied to the plant in Munich. Second, a stock transport order has to be created for the material transfer. Third, a goods issue has to be posted in plant Dallas, followed by a goods receipt in plant Munich. Thereby, the physical transport of the materials can be...

Item	Your Selection	Score	Feedback
Material Number	DXTP1995	100 %	Perfectly done
Material type	Finished Product	100 %	Perfectly done
Industry Sector	Retail	100 %	Perfectly done
Plant	MU00	100 %	Perfectly done
Standard Price	400.00	20 %	You selected an unexpected value for the Standard Price. Please have a look once again in the Case study what the item is about!
Unrestricted Use	5.000	100 %	Perfectly done



Here you can write a Comment to your Lecturer



→ Lecturer's Assessment

Lecturer's assessment Page

Assessment for Production Planning

Task Performance

Good job 995

Activity Feedback


Good job 995

Learning Progress











Good job 995

Your Grade

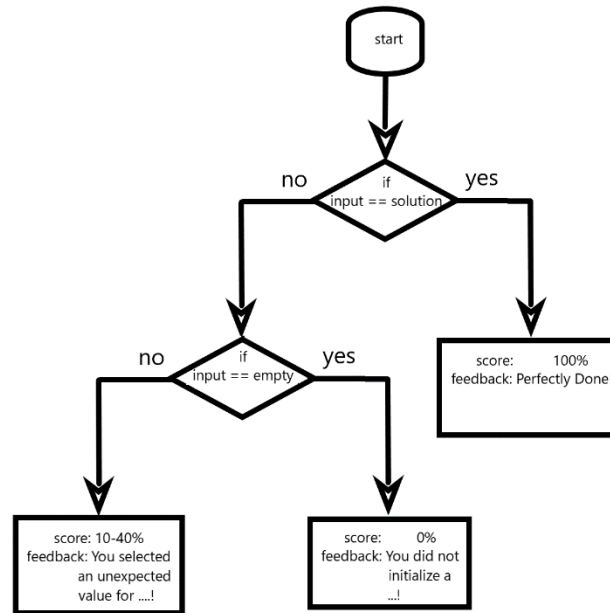
Good

 0

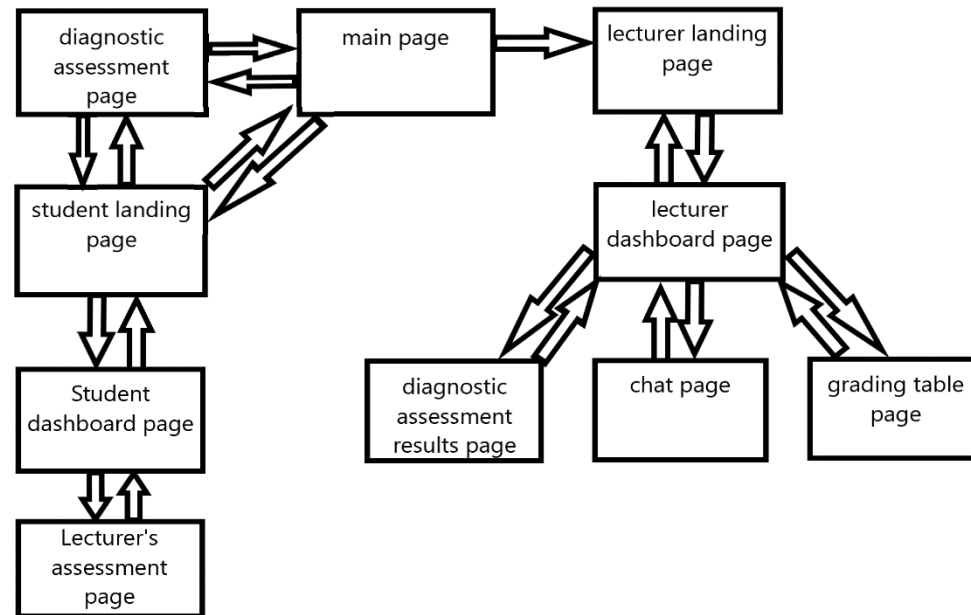
Comments and Messages from Students

Comments and Messages of Students	
	GBS-995: Test Message 1!
	GBS-995: Test Message 2!
	GBS-995: I dont understand the create an invoice for a customer concept can you please explain it in the next lecture ones more! Regards.
	GBS-995: You have not finished Concept 3 and 4
	GBS-995: zweimal Name of organisation! sollte search term sein
	GBS-995: Please re-engineer the Score and Feedback till the conference on the 13th of September :)!
	GBS-994: hi i am 994
	GBS-995: Hi how are you?
	GBS-995: Hi Lecturer, i liked this case study very much! Nothing to complain about.
	GBS-995: Hey Lecturer, nice tool! It helps me to improve my knowledge!

Conceptual model for feedback generation



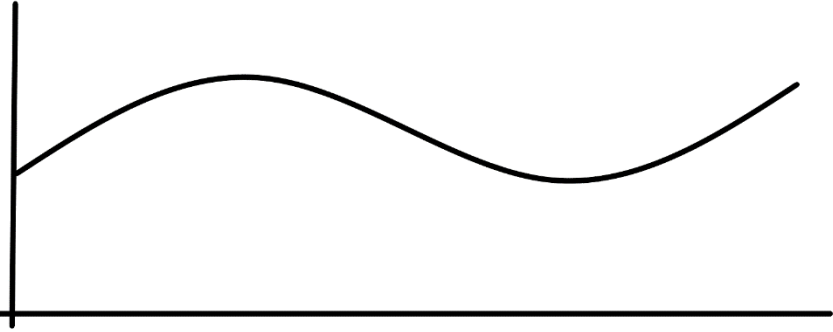
Click-flow and pages diagram



Mock-up Page for Student

HEADER			
INFORMATION AND DESCRIPTIONS			
TABLE STRUCTURE FOR DATA VISUALIZATION			
	USER INPUT	FEEDBACK	SCORE
COMMENT			
FOOTER			PAGE NAVIGATION

Mock-up Page for Lecturer

HEADER	
INFORMATION AND DESCRIPTIONS	
TABLE STRUCTURE FOR DATA VISUALIZATION	
	
COMMENT	
FOOTER	PAGE NAVIGATION

System Usability Scale

System Usability Scale	
1. I think that I would like to use this system frequently.	6. I thought there was too much inconsistency in this system.
2. I found the system unnecessarily complex.	7. I would imagine that most people would learn to use this system very quickly.
3. I thought the system was easy to use.	8. I found the system very cumbersome to use.
4. I think that I would need the support of a technical person to be able to use this system.	9. I felt very confident using the system.
5. I found the various functions in this system were well integrated.	10. I needed to learn a lot of things before I could get going with this system.

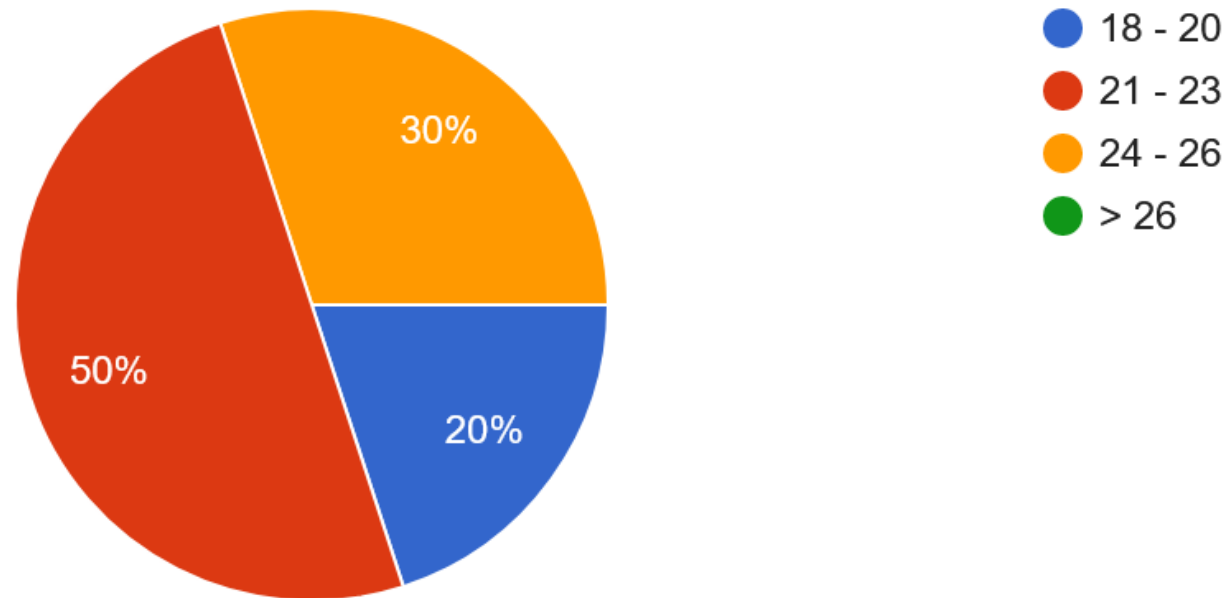
Evaluation folder in Google Drive

Name ↑	Eigentümer	Zuletzt geändert	Dateigröße
 1) VIDEO ANSCHAUEN	Furkan Gürbüz	27.09.2021 Furkan Gürbüz	—
 2) Monitoring Tool Link & Zugang	Furkan Gürbüz	29.09.2021 Furkan Gürbüz	—
 3) FORMULAR AUSFÜLLEN	Furkan Gürbüz	28.09.2021 Furkan Gürbüz	—
 beispiel case study	Furkan Gürbüz	27.09.2021 Furkan Gürbüz	—

Age Distribution

How old are you?

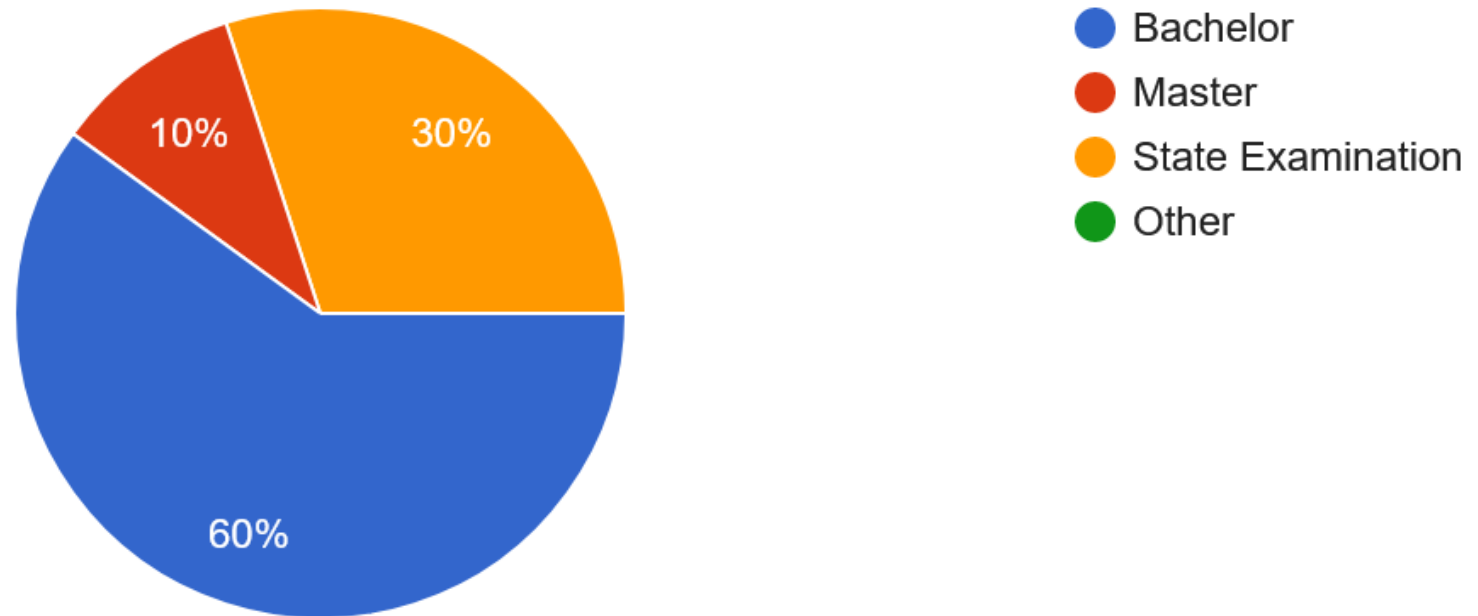
10 Antworten



Degree Distribution

Which degree are you aiming for in your current degree?

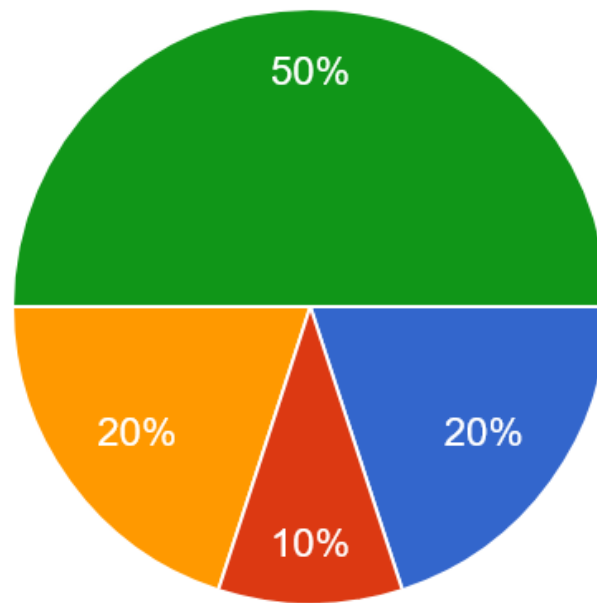
10 Antworten



Course of Study Distribution

What is your current course of study?

10 Antworten

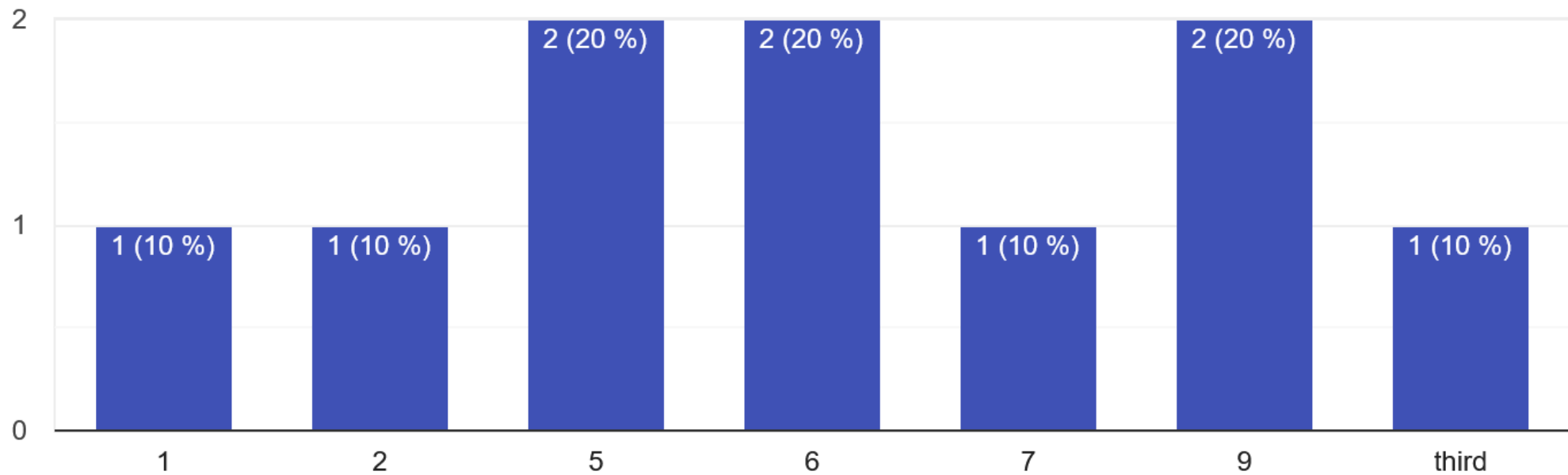


- Information Systems
- Computer Science
- Business Administration
- Other

Semester Distribution

In which semester are you for the above-mentioned course of study?

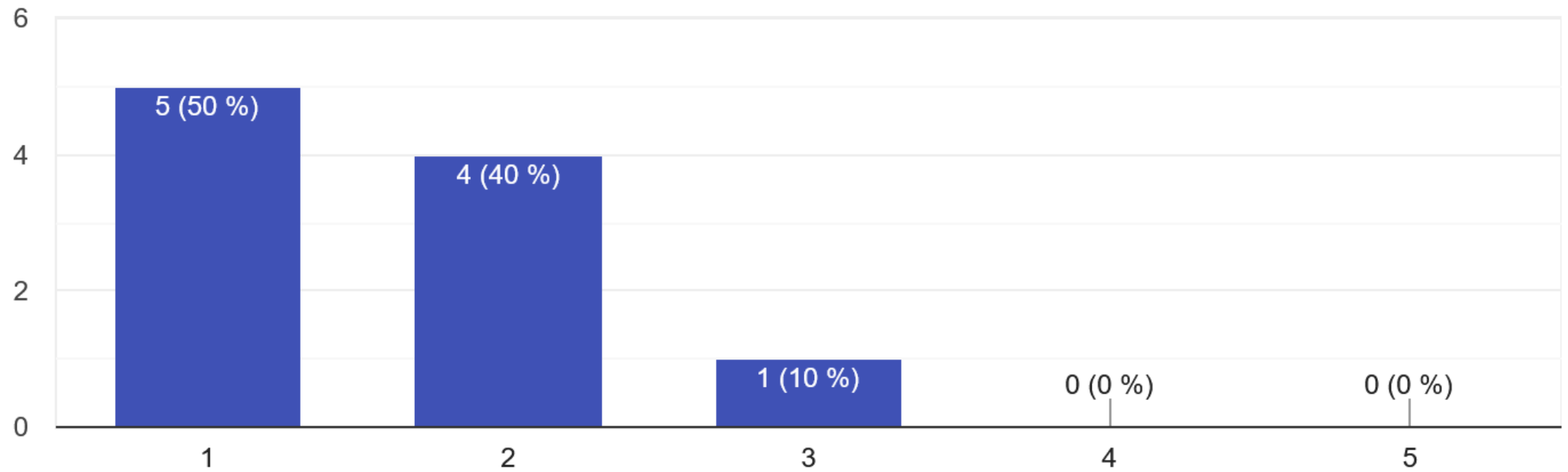
10 Antworten



Complexity

I found the monitoring tool unnecessarily complex

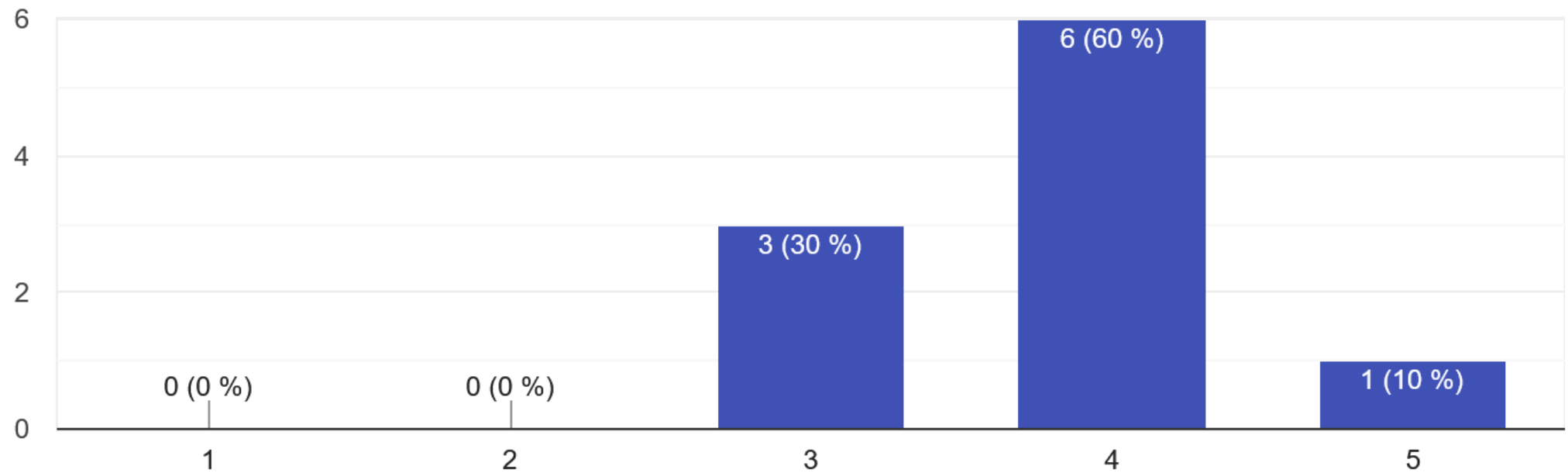
10 Antworten



Regular Usage

I think I would like to use the monitoring tool frequently

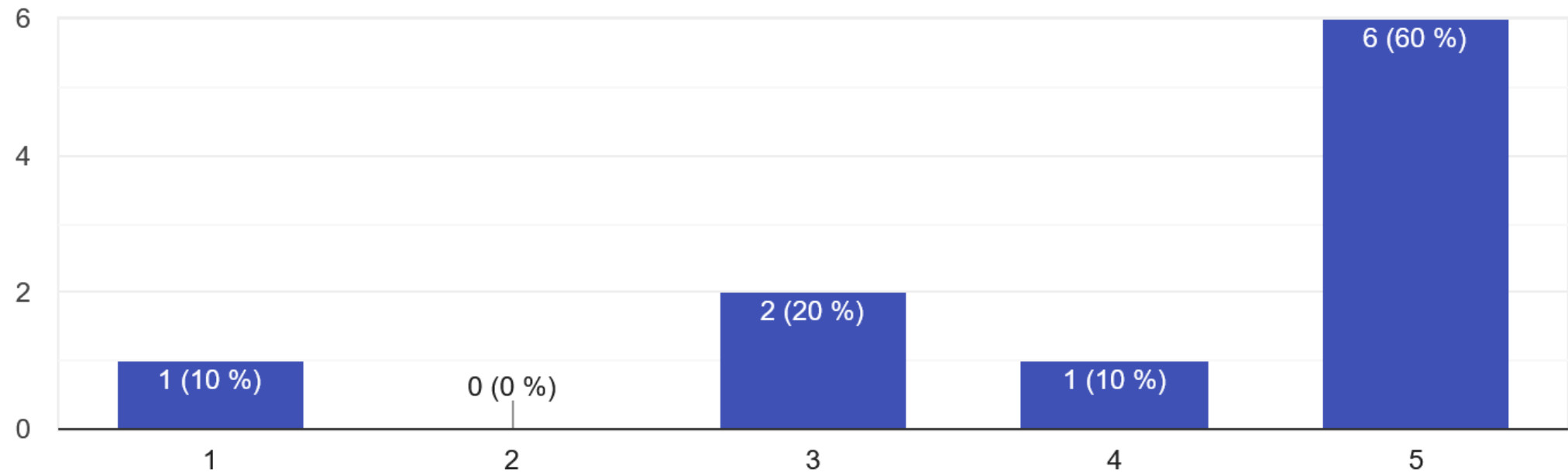
10 Antworten



Easy to Use

I thought the monitoring tool was easy to use

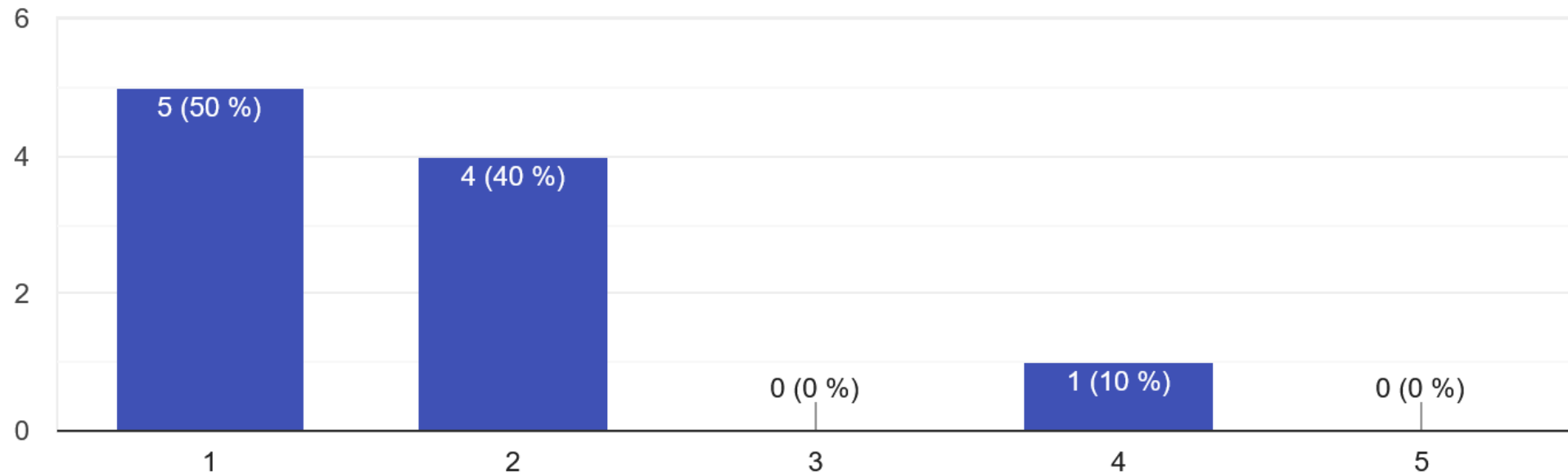
10 Antworten



Help for Usage

I think that I would need the support of a technical person to be able to use the monitoring tool

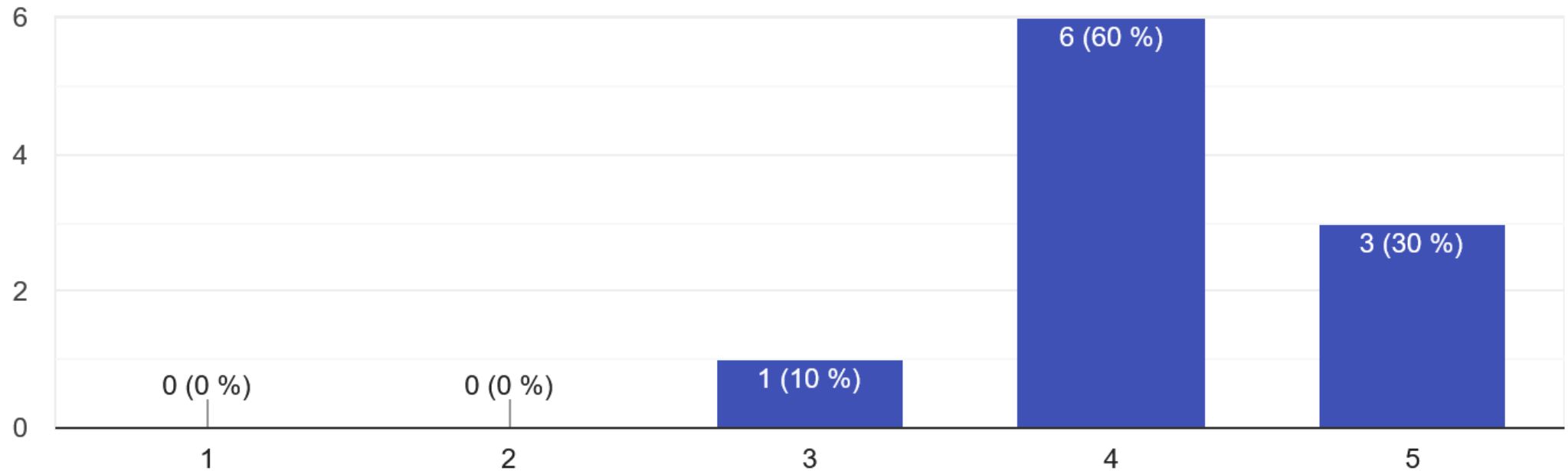
10 Antworten



Integration of the functionalities

I found the various functions in the monitoring tool were well integrated

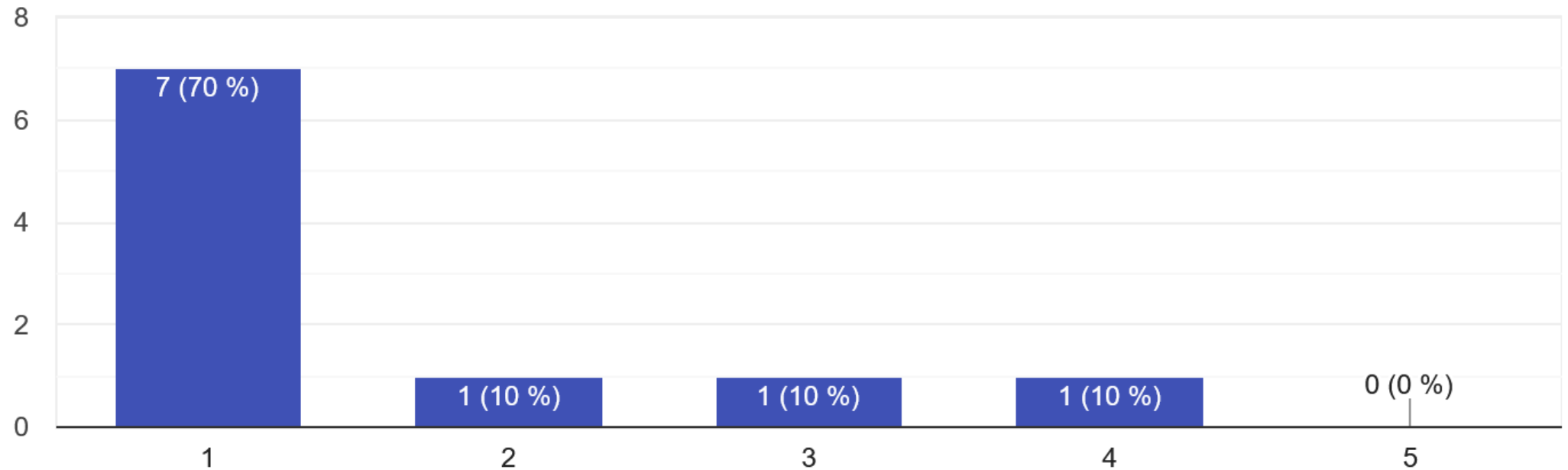
10 Antworten



Inconsistency of the monitoring tool

I thought there was too much inconsistency in the monitoring tool

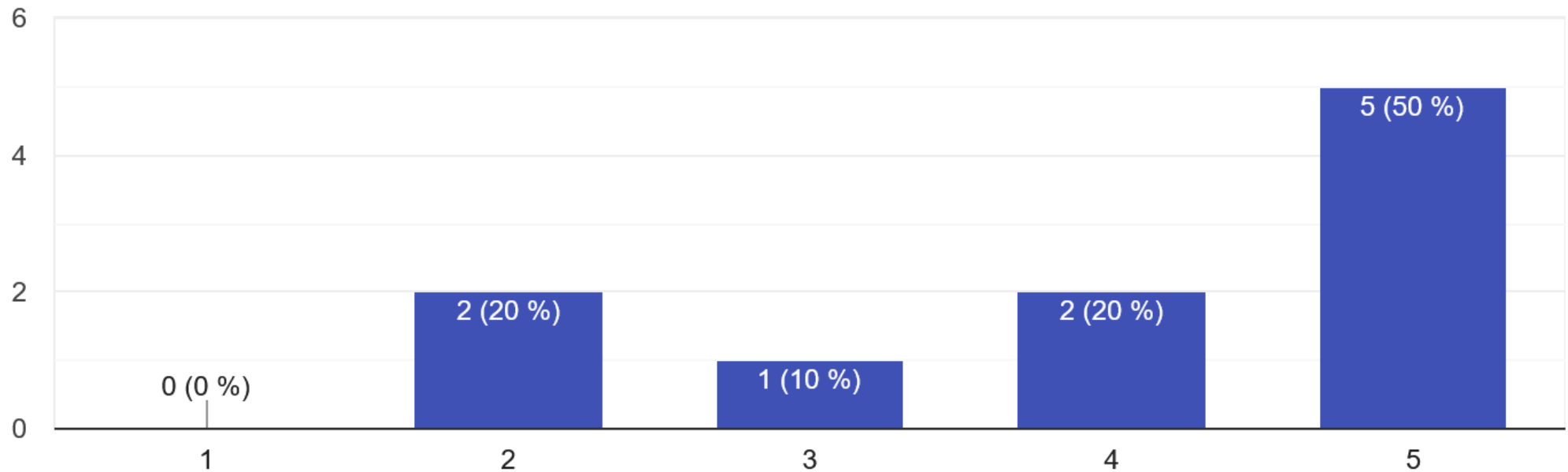
10 Antworten



Quick learning

I would imagine that most people would learn to use the monitoring tool very quickly

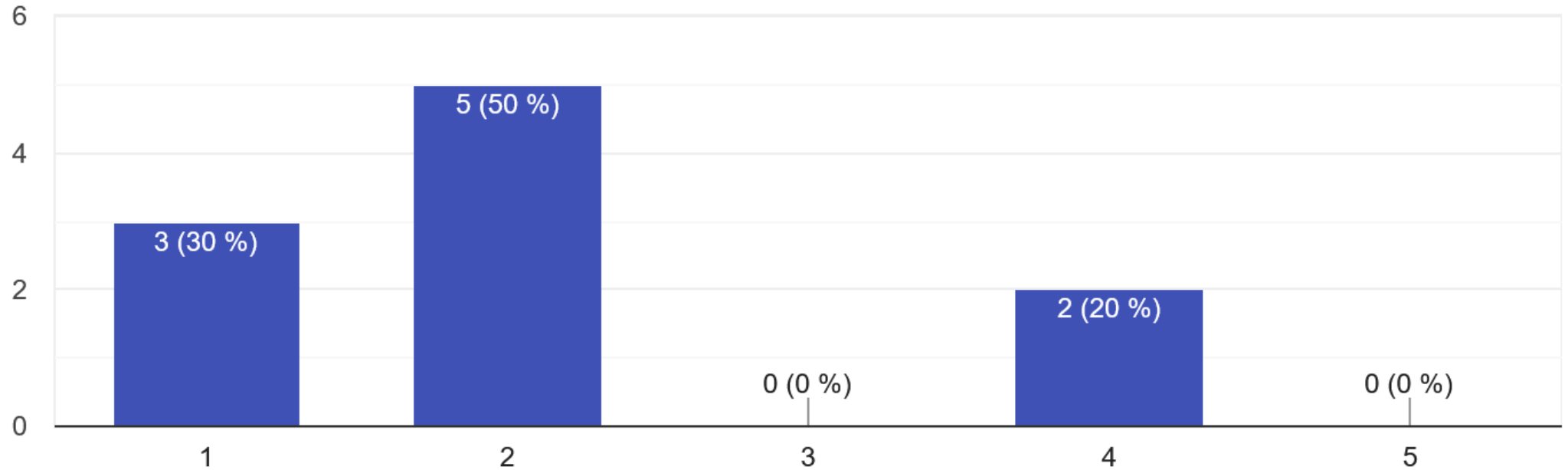
10 Antworten



Cumbersome Usage

I found the Monitoring tool very cumbersome to use

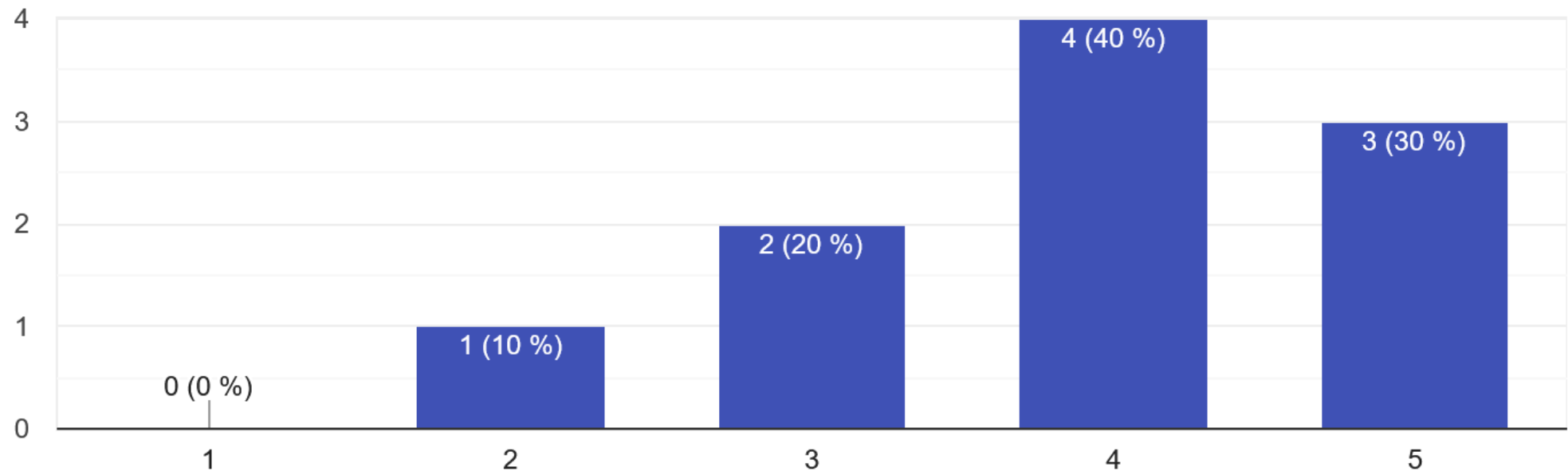
10 Antworten



Confidence while Using the monitoring tool

I felt very confident using the monitoring tool

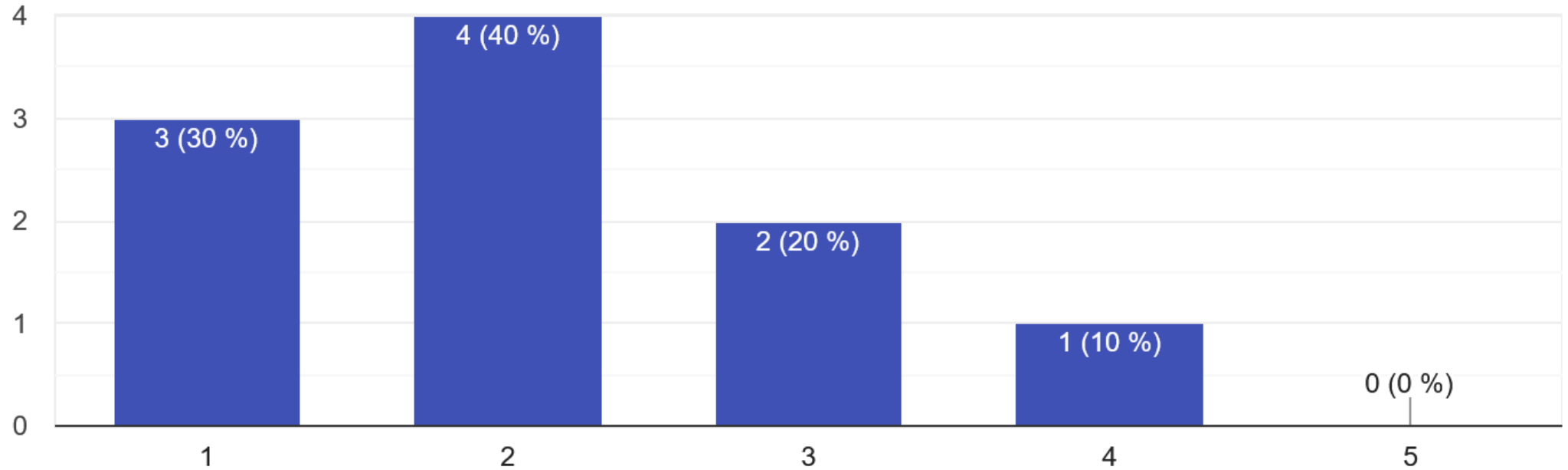
10 Antworten



Preknowledge before using the monitoring tool

I needed to learn a lot of things before I could get going with the monitoring tool

10 Antworten



SUS score calculation

Question 1	3,8	Question 2	1,4
Question 3	4,1	Question 4	1,7
Question 5	4,2	Question 6	1,6
Question 7	4,0	Question 8	2,1
Question 9	3,9	Question 10	2,1
Total Odd:	20	Total Even:	8,9
Result:	$20 - 5 = 15$	Result:	$25 - 8,9 = 16,1$
SUS Score	$(15 + 16,1) * 2,5 = \mathbf{77,75}$		

SUS score interpretation

