
MOBILE SOFTWARE ENGINEERING WS 2017/2018

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Timetable – Working Version

Date	Content
28.09.17	Introduction & Digitale Dörfer Project
05.10.17	How to build the right apps - Innovation and Creativity
12.10.17	Shaping the Idea, Business Model and Product Philosophy
19.10.17	Mobile Requirements Engineering
26.10.17	Mobile Experience Design
02.11.17	Mobile Prototyping
09.11.17	Mobile Usability Testing and Product Philosophy Evaluation
16.11.17	Mobile Development Approaches
23.11.17	Mobile Architecture
30.11.17	Mobile Security
07.12.17	Mobile Quality Assurance
14.12.17	Synchronization Concepts
21.12.17	Sell your Product to the customer and 2nd Product Philosophy Evaluation
28.12.17	no lecture
04.01.17	no lecture
11.01.17	Exam Preparation & Real World Project
18.01.17	Final Presentation

Slides

- Lecture slides and information can be downloaded here
- <https://oc.iese.de/index.php/s/SVZGhPW6bkzlUg1>
- <http://tinyurl.com/y837rmcx>
- <http://bit.ly/ms017>
- Passwort: MSO2017

Inhalt

- Building Personas
- Definition of to-be Situation
- Definition of interaction cases
- Description of system functions

Shhhhh! The most important tip:



**YOU
ARE
NOT
THE
USER**

!



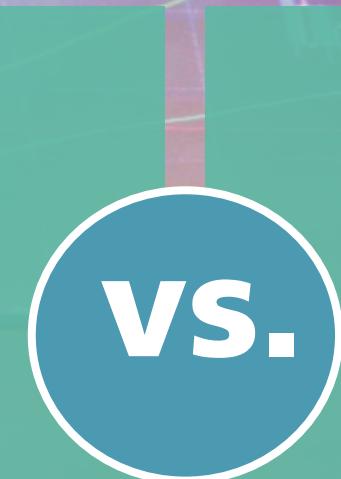
Requirement-Engineering Goals:

Identification of the Stakeholders

Goal- and Task-Analysis

**Constructive
Methods**

empirically validated,
Based on Best Practices



**Analytical
Methods**

Reverse-Engineering,
Resource intensiv

Introducing mConcAppt – Mobile RE Method

Derive a **user centered** initial **interaction concept** that is already verified with all other relevant stakeholders

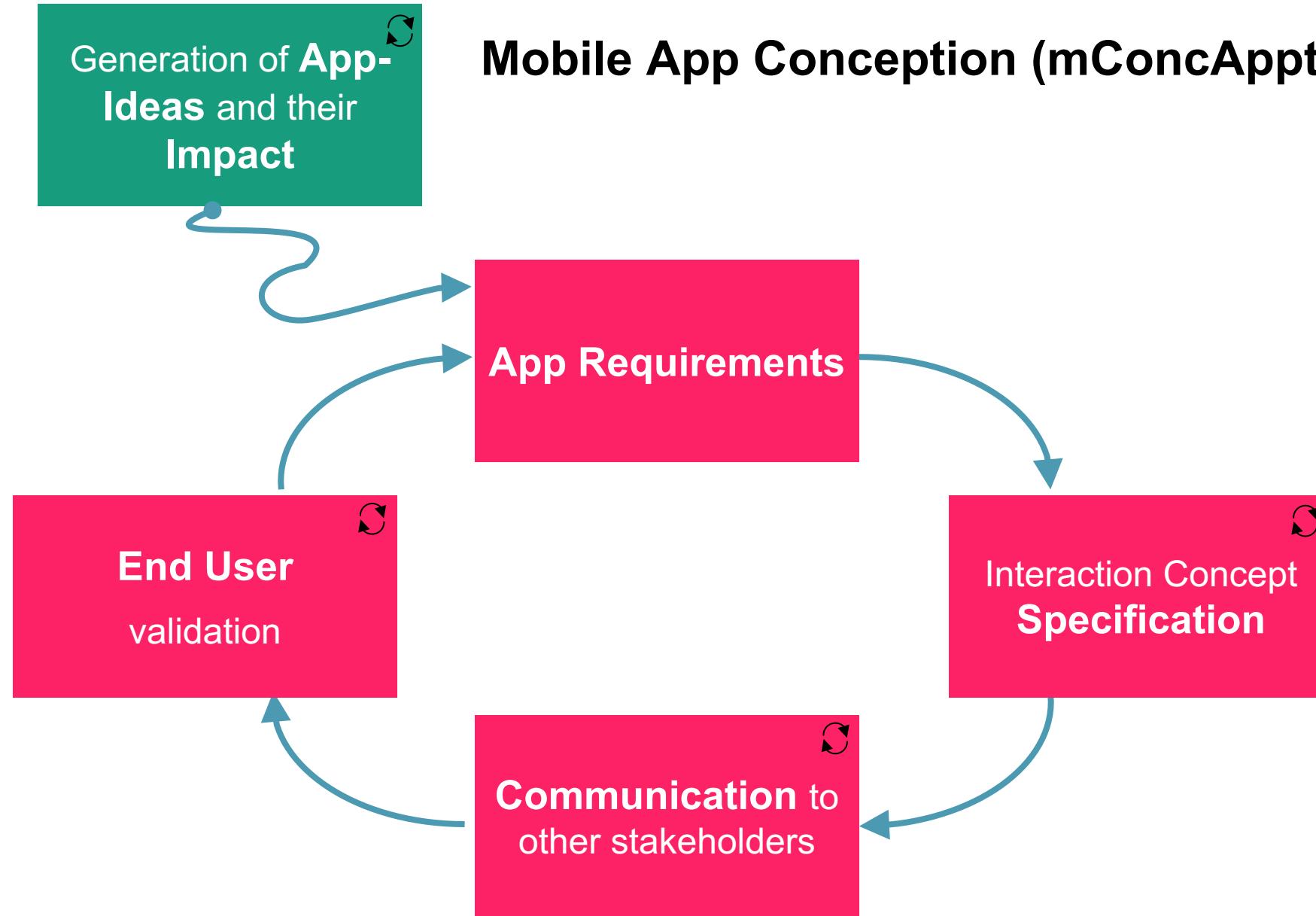
Usable as starting point for implementation

Not a full requirements specification

End-user validated (UX focus)

Build **great** Apps that fit user needs!

Mobile App Conception (mConcAppt)



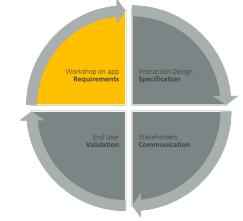
APP REQUIREMENTS



GOAL: Elicitation of requirements needed for the interaction design of the app

INPUT	OUTPUT	INVOLVED STAKEHOLDERS
<ul style="list-style-type: none">• Goals,• Constraints,• Scope,• Roles• As-Is Processes	<ul style="list-style-type: none">• Persona• To-be process• System functions	<ul style="list-style-type: none">• Interaction Designer &• Requirements Expert• User• Project Management• Business Analyst• Customer

WORKSHOP ON APP REQUIREMENTS



- Step 1
Analysis of stakeholders and user roles, their goals and context
- Step 2
Building Personas
- Step 3
Analysis of the As-Is Situation and Problems
- Step 4
Product Philosophy
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Description of the System Functions

Building Personas

- Gained information can be aggregated to user-/stakeholder groups
- Characterization of standard users is called "Persona" in the context of user experience
- Personas are used to substantiate the needs of different end users.

"User" is often used to describe the average customer, which can not be equated with a persona.

In UX context personas are used to define and shape interactive systems.

Building Personas

- **Archetypal users of a system**, an example of a user type, which interacts with the system.
- Profiles of fictional characters based on surveys / interviews
- Objectives and tasks are generally representative of the interests of a large group of users, focusing on core functionality
- Focus on how users interact in the information system, what frustrates them and what satisfies their needs
- Narrative that describes a typical day and the past experience of the person as well as skills, attitude, background, environment and the objectives to be achieved
- Personas create the fictitious users to live and identify the motivation, expectations, demands and behavior

Building Personas

- Personas can answer important questions like:
 - What information is needed in which step and at what point?
 - Is the user only focusing on one thing at a time or is he executing several tasks at once?
 - Does the user have several breaks while using the system?
 - Why is he using the system?
 - What can motivate him to use the system?

Building Personas

- Personas generally contain the following information:
 - Socio-demographic information
 - Intentions and responsibilities for the use of the system
 - Goals and user behavior
 - Experiences and knowledge with any comparable systems
 - Sector-specific information such as: average expenditure / budget for e-commerce applications
 - Not a pure list of characteristics; Creating an identity including a CV and a picture

Building Personas

■ Mobile Aspect

- Focus on information and abilities that are mobile relevant
- Focus on context description
- Challenges focusing on mobile support

Marc Peters

Repräsentiert
15% der Bürger

Alter: 29 Jahre

Beruf: Grundschullehrer

Status: Ledig, keine Kinder

Wohnort: Betzdorf



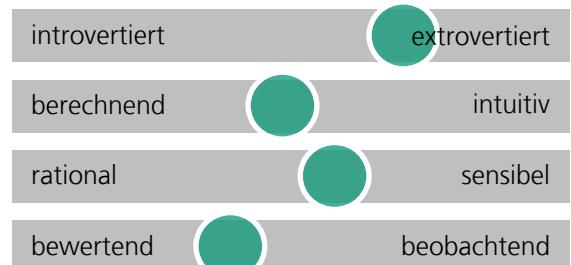
„Ausgelassenheit ist alles im Alltag“

Biographie:

Marc Peters ist ein fröhlicher Mensch. Er mag seine Arbeit aber noch mehr seine Freizeitaktivitäten. Er ist aktiv im Sportverein und außerdem ehrenamtlich als Betreuer einer Jugendgruppe tätig. Marc nimmt aktiv am Dorfgeschehen teil und ist immer mit einer helfenden Hand zur Stelle.

Er klettert gern mit seiner Freundin. Sie gehen jeden Tag zur Kletterhalle und treffen ihre Freunde, quatschen und üben an den verschiedenen Wänden. Am Wochenende geht er auch gern aus. Er mag Musik und ist immer auf dem neusten Stand mit den letzten Trends. Durch seine bisherigen Erfahrungen wurde er zu einer sehr ausgelassenen Persönlichkeit. Seine Freunde bewundern ihm und sind immer begeistert von seinen Urlauben und Abenteuern. Er lässt sich das aber nicht anmerken, ist davon aber sehr geschmeichelt. Er weiß, dass er auf seine Freunde zählen kann und deswegen pflegt er seine Freundschaften mit voller Hingabe.

Persönlichkeit:



Persönliche Ziele:

- Das Leben genießen und vieles Erleben
- Jeden Tag etwas Neues lernen
- Spaß haben bei jeder seiner Tätigkeiten

Arbeits- und Lebensumgebung:

Peter arbeitet in der Grundschule Eisenberg und hat in der Regel ab 13 Uhr Feierabend. Häufig besucht er nach der Arbeit seine Eltern in Albisheim zum gemeinsamen Mittagessen.

Herausforderungen:

- Die gute Laune beizubehalten nach einem stressigen Tag.
- Ehrenamtliche Tätigkeiten zu koordinieren
- Die eigene Arbeit zu erledigen und gleichzeitig Hilfsbereitschaft bei Kollegen zeigen

Technologien:



Exercise Persona

- Build the persona(s) for your main target group (20 Minutes)
- Send personas until 25.10.2017 05:00 pm to dominik.magin@iese.fraunhofer.de

Repräsentiert %
der Nutzer

Alter:

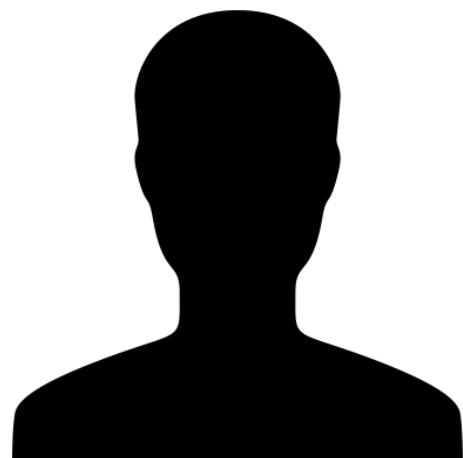
Beruf:

Status:

Wohnort:

Biographie:

Arbeitsumgebung:



Persönlichkeit:

introvertiert extrovertiert

berechnend intuitiv

rational sensibel

entscheidend beobachtend

Persönliche Ziele:

Herausforderungen:

Technologien:

IT & Internet

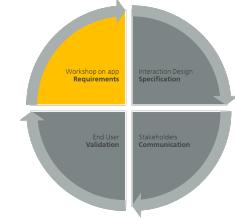
Software

Mobile Endgeräte

Mobile Applikationen

Social Networking

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To-Be Process

- Definition of the future process highlighting mobile support
- Step by step description
- Distinguish between the following activities
 - Human only: steps that are performed by humans only
 - System only: steps that are performed by the system only
 - Human-System: steps that are performed by humans with system support
 - System-System: steps that are performed by the system with support of external systems
- Embed key solution concepts into this description

To-Be Process Description Template

Item	Description
Context	Context that leads to the fulfillment of the actual to-be scenario.
Precondition	Precondition for scenario conduction.
Step 1-N	Steps that are performed - mark steps that are performed using the mobile device.
Postcondition	State that is achieved after the scenario.

To-Be Process Description Example

Item	Description
Context	Steve talks at a public event to a prospective customer that is interested in Mobile Business Applications and especially the early phases in the software engineering lifecycle. Steve carries his iPad with him.
Precondition	Customer is interested in mobile services. Steve has mConcAppt app installed on his iPad.
Step 1	 Steve informs the customer about mobile services the company offers. Using his mobile device, he shows the overview of Fraunhofer IESE services on his iPad.
Step 2	Customer requests detailed information about the user-centered mobile design method of the Fraunhofer IESE.
Step 3	 Steve gives detailed information about the mConcAppt method using the detailed views and examples of the iPad app.
Postcondition	Customer is impressed & informed about mobile services.

Exercise To-Be Process

- Define the to-be scenario for your application (30 Minutes)

Interaction Case

- Description method focussing on describing human-system activities in more detail
- Already define concrete user actions and interaction modalities

Interaction Case Template

Item	Description
ID	Unique identifier of the interaction case.
Usage Context	The usage context is a plausible description of the environment and situation based on a coherent set of assumptions.
Human Action 1	A human action is an action a human performs on the corresponding systems' input device. If applicable, each human action is further described by the concrete usage type (e.g. tap, slide, speech, shake). In addition, exchanged date between user and system is named.
System Action 1	A system action is the action the system performs in order to present the intended output to the user. Description is extended by input feedback as well as screen transitions.
...	...
Postcondition	State that is achieved in the system after performing the given interaction case.

Interaction Case Example

Item	Description
ID	IC2 - Get detailed information about method step.
Usage Context	Talking to a customer in a public environment.
Human Action 1	Open phase slider by either single tapping on the slider button or shaking the device.
System Action 1	Slider slides down and shows method phase steps.
Human Action 2	Choosing the method step by sliding the phase content up and down and single tap on the method step.
System Action 2	Method step area enlarges and step details are shown in full screen.
Postcondition	Method step is shown in full screen - further actions possible.

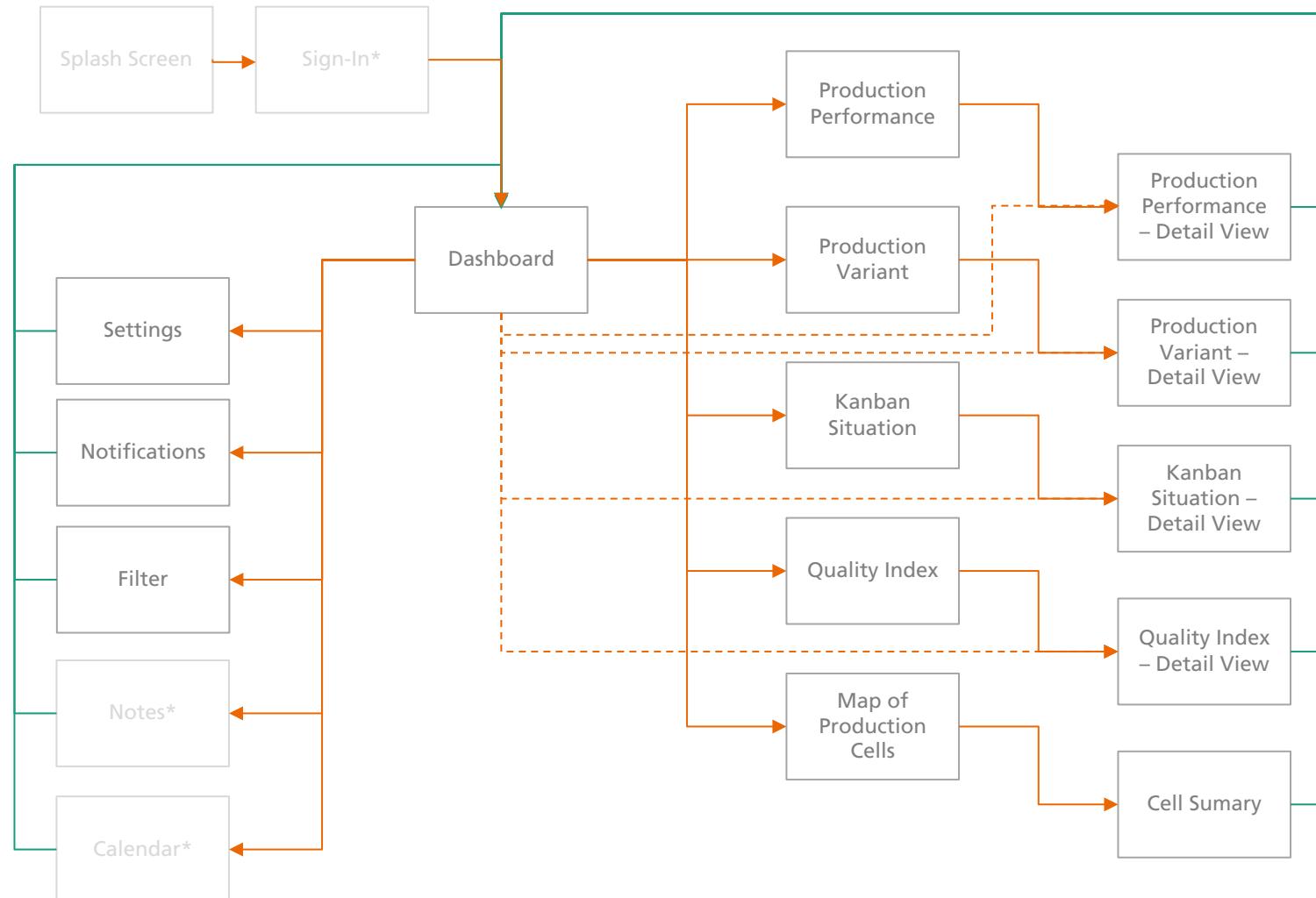
Exercise

- Define the Interaction Cases for your mobile application (30 Minutes)

Interaction Case Map

- An interaction case map shows all interaction cases in a graphical representation
- Getting a quick overview on the app
- Used for defining the final scope of the app

Interaction Case Map



Exercise

- Link your previously created interaction cases in an Interaction Case Map (20 Minutes)

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System Functions

- Collection and discussion of relevant system functions
- System functions are developed based on the to-be scenario
- Exchanged data is identified and data formats as well as interfaces can be defined in a subsequent step
- The main system functions represent the core functionality of the app

System Function Template

Item	Description
ID	Unique identifier of the system function
Name	Name of the system function
Input data	Data, that is entered into the system
Precondition	System precondition
Description	Step by step description of systems' activities (e.g. 1. The system creates a logical connection between employee data and travel application 2. The system saves the travel application data)
Exception	Exceptions that might occur during the system functions
Business rules	Business rules setting constraints for the system function
Quality requirements	Quality requirements for the system function
Output data	Data, the system sends to the user(s) or other systems
Postcondition	System postcondition(s)

System Function Example

Item	Description
ID	SF1.
Name	Show details of a step within a phase.
Input data	Method descriptions and additional information are stored in the device.
Precondition	The application is installed and opened.
Description	The app provides the possibility to select a single step within a phase of the method. The app shows detailed information for the selected step in a new screen.
Exception	Interruption by closing the application or incoming events from outside of the application.
Quality requirements	The detailed information is shown in less than 1 second.
Postcondition	The detailed information is shown on the screen.

Exercise

- Based on your to-be situation and your interaction cases derive your system functions. (30 Minutes)

Next Lecture

26.10.2017



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