CTG Academy

IREB

Certified Professional in Requirements Engineering

Exercises

IREB International Requirements Engineering Board

Requirements Engineering: Why?

As a team, describe in one or two keywords

- Important requirements problems (from your project/organization)
- What resulted from these problems (consequences)
- Ideas for improvement (solutions)

One-on-one links are not mandatory.

Problems	Consequences	Solutions

The Role and Tasks of a Requirements Engineer

Read the following description.

As a team, rank the 5 requirements that are most relevant for this case.

> *A small scale bank is looking for a new business analyst. This bank has offices in several European countries and its head office is located in the Netherlands. The bank is working with an internet based Bank Information System. The new business analyst will be working in the head office. He/she will be the link between the business and the (IT-)projects and be responsible for the translation from change requests into business requirements and for new projects also for the elicitation of the business requirements. The bank has adapted the SCRUM method and the business analyst will be participating in the scrum teams.*

	Requirements	**Relevant**
1	Successfully completed (business) information technology or economics studies	
2	Several years of experience as software developer and project leader /team leader in the area of ERP are desirable	
3	Good system development skills. You master at least one current programming language (ideally .NET)	
4	Very good SQL knowledge and experience with MS SQL Servers	
5	Know-how in Web standard technologies such as HTML and XML/XSL/XSLT as well as knowledge in MS server technology ISS and Share Point	
6	Very good skills in the English language	
7	Analytical thinking skills and strength in conceptual areas	
8	Strong orientation to services and consulting	
9	High level of commitment	
10	Sure and convincing attitude	
11	Ability to work under high work pressure	
12	Convincing communication skills	
13	Being able to deal with cultural differences in an adequate way	
14	Testing experience on both system and acceptance level	
15	Domain knowledge of banking processes	

Writing Requirements

Read the following description.

> *Your kids (but also those from your neighbors, your nephews, nieces, …) are very good at making a mess of their toys. Have you ever stepped on a piece of Lego barefoot? Or laid your head on a pillow covering Barbie's dream car? You are tired of this, so you are going to design a system that would help them clean up their mess.*

You get carte blanche to come up with some requirements for this system. The main goal is to have the room cleaned up, the secondary goal would be to let your kids do most of the work.

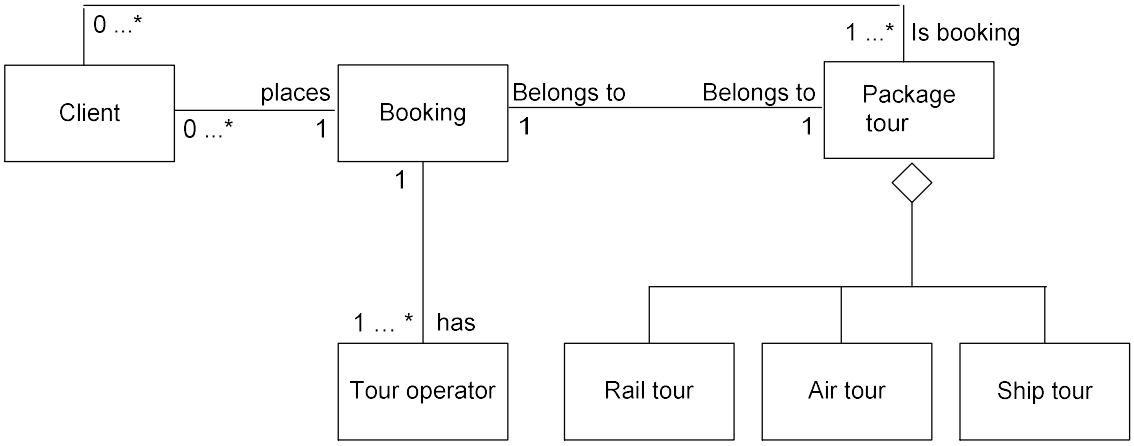
You need to write:

- 1 individual requirement, using the boilerplate
- 1 user story, using the phrase template 'AS A <role> I WANT <action> SO THAT <benefit>'
- 1 use case with 1 normal flow and 2 alternative flows (see template below)

Name	*< A short active verb phrase>*
Precondition	*<Condition(s) that must hold when the execution of the use case is triggered>*
Primary actor	*<Actor name>*
Other actors	*<List of other actors involved, if any>*
Trigger	*<Event that initiates the execution of the use case>*
Normal flow	*<Description of the main success scenario in a sequence of steps:* *<step 1> <action 1>* *<step 2> <action 2>* *…* *<step n> <action n> … >*

Alternate flow 1	*<Description of alternative steps, with references to the corresponding steps in the normal flow>*
Alternate flow 2	*<Description of exceptional steps, with references to the corresponding steps in the normal flow>*

True or False?



1. The direct association between client and package tour is redundant and also inconsistent; it should therefore be removed from the model.
2. The association between booking and tour operator makes no sense and should be replaced by an association between package tour and tour operator.
3. The business need that a package tour can be either a rail, air or ship tour is correctly modelled.
4. The multiplicity of the association between client and booking adequately reflects reality.

State Transition Diagram

As a group, draw the State Diagram for the following requirements:

> *A web site has a homepage; by choosing the button 'contact' 'contact information' is provided. By choosing the button 'services' an overview is provided of the services. The 'services' page also has a hyperlink to the contact information page. The home button will bring you back to the homepage.*

You are allowed to ask questions!

UML Class Diagram

Create a UML class diagram, modelling the following:

> *A toy store sells Lego, dolls and outdoor toys. Every toy has a price and the available number of items in stock. For Lego we keep track of the number of blocks in the box, for dolls their name, and for the outdoor toys their weight. Every toy is linked to the factory (with a location) where it was created. Toys can be linked to the child that receives it. The child (with name and birth date) is linked to his or her school.*

Some tools you could use to create this model:

- Pen and paper
- Draw.io (https://draw.io): free online modelling tool
- MS Visio (if you have a license)
- MS Word, PowerPoint, Paint, …
- Whatever you feel most comfortable with!

UML Activity Diagram

Create a UML activity diagram, modelling the steps you perform in the morning after getting up and before going to work. Keep in mind that you have the talent to brush your teeth while dressing yourself at the same time. You also have to make a decision whether you're eating cornflakes or a sandwich as breakfast.

Some tools you could use to create this model:

- Pen and paper
- Draw.io (https://draw.io): free online modelling tool
- MS Visio (if you have a license)
- MS Word, PowerPoint, Paint, …
- Whatever you feel most comfortable with!

Stakeholders

For your current project (or the last one you worked on if you're not working at a project right now), identify the stakeholders and write a stakeholder list.

SW(OT) Analysis Elicitation Techniques

Every participants chooses one elicitation technique.

What do you consider to be strong points / selling items of that technique?

What do you consider to be problems / draw backs / weaknesses of that technique?

Technique:	
Advantages / Strong Points	Disadvantage / Weak points

F-Test

You do not ask questions about this test. The rules are clear.
You do not ask questions about this test. The rules are clear.
Make sure the following rule is applied correctly:

'No instances of F are allowed'

Count all defects for this rule.
You get exactly 1 minute to check.
Please indicate your number of defects once the minute has passed.

"FEDERAL FUSES ARE THE RESULTS OF 75 YEARS OF SCIENTIFIC STUDY COMBINED WITH THE EXPERIENCE OF 14 YEARS."

How many letter F's can you find on this page?

Reviewing

Review the following specifications and list your remarks in the review sheet.

The development of the innovative alarm clock and music system shall raise the profit of the company by 10% within 3 months after delivery to the wholesale dealer.

The clock shall produce no tic sound. Because people don't like to be woken up abruptly, the new clock radio shall wake up the sleeping people more smoothly than any other alarm clock.

The luminosity of the lighted digits shall be changeable continuously.

The clock radio shall be small and lightweight, because the users also want to use it on travel. Therefore the clock radio shall be usable with different power voltages. To achieve a minimum weight the alarm clock must not contain any iron parts.

The alarm clock shall be able to wake its environment with music or a wake-up call.

The clock shall be very easy to use. The snooze key shall be easily accessible. The clock shall withstand a heavy blow from a sleeper and a fall from 50 cm.

The clock shall be very low in energy consumption. The system may only be operated with batteries of type 3434.

INSPECTION ISSUE LOG

Project: _____
Inspection ID: _____
Meeting Date: _____
Recorder: _____

Origin:	**R**equirements, **D**esign, **I**mplementation, **T**esting
Type:	**M**issing, **W**rong, **E**xtra, **U**sability, **P**erformance, **S**tyle, **C**larity, **Q**uestion
Severity:	**M**ajor, **m**inor

Defects Found: ____ **Major,** ____ **minor**
Defects Corrected: ____ **Major** ____ **minor**

	Origin	Type	Severity	Location	Description
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					

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