UNIVERSITAT DE BARCELONA

Software Integrated Project (2019-2020)

Software requirements

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Definition

- User conditions
- System capabilities
- External conditions (*e.g.* legal)
- Requirements are of functional and non-functional types

Motivation

- The importance of requirement gathering is often under-estimated.
- Requirements gathering and documentation can seem to be software developers as tedious and uninteresting
- Yes you can do software without requirements, but that’s the best way to sabotage the software
- Software requirement analysis has many advantages and are key to the software’s success

Goals and Advantages

1. Gather functional requirements
2. Take into account non-functional requirements
3. Better understand expectations
4. Remove/reduce assumptions, approximations, grey areas.
5. Better understand obstacles and address them
6. Ensures everyone in the development team is on the same page

Methodology

- “The requirements were not clear enough”, said the software engineer.
- Steps:

1. Requirements gathering
2. Requirements documentation
3. Requirements understanding
4. Go back to Step 1 or 2

1. Requirement Gathering

- What?

  e.g. Clinical, user/patient, device and legal requirements (also: privacy, security, system, ethical, performance, etc)

- Who?

  e.g. Clinicians, nurses, system admins, patients, pharmacists, technologists, etc

- How?

  e.g. interviews, surveys, focus groups, workshops, co-creation workshops

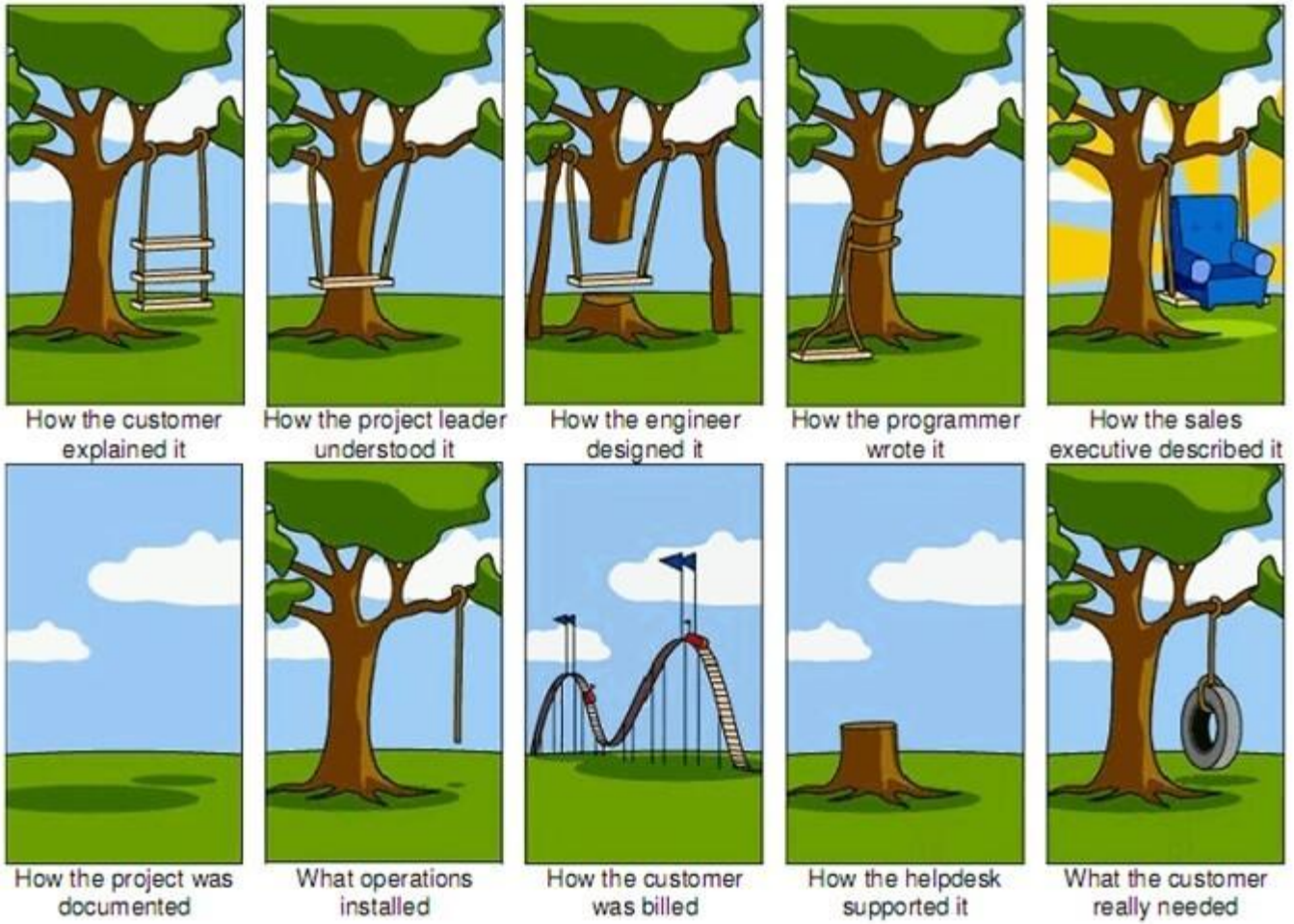
2. Requirement Documentation

- Describes at least the minimum set of requirements
- Use natural language for user, more technical for developpers
- Structured: e.g. definitions, functional requirements, system requirements (portability, devices, etc)
- Requirements can be structured as a table
- Can include use cases, mock-ups
- May follow standards (e.g. IEEE)

2. Requirement Documentation

	Example of bad requirement	Example of good requirement
Clear, detailed, complete:	• Students will be able to enroll to undergraduate and post graduate courses	• Students will be able to enroll to undergraduate courses • Students will be able to enroll to post-graduate courses
	1- Students will be able to enroll to undergraduate courses1- Students will be able to enroll to post-graduate courses	1. Course Enrolment 2. Students will be able to enroll to undergraduate courses 3. Students will be able to enroll to post-graduate courses
Concrete, specific:	A professor user will log into the system by providing his username, password, and other relevant information	A professor user will log into the system by providing his username, password and department code
	Each page of the system will load in an acceptable time-frame	Register student and enrol courses pages of the system will load within 5 seconds

3. Requirement Understanding



Project Submission

- What? Type of requirements
- Who? Stakeholders who contributed to the requirements
- How? Method to gather requirements

- List of functional requirements
- List of non-functional requirements

Calendar

Week	Date	Topic	Delivery
1	12 Feb	Introduction	Group compositions
2	19 Feb	Project proposals	Mock-up
3	26 Feb	Project proposals: Example 1	
4	04 Mar	Project proposals: More examples	Team proposals
5	11 Mar	Requirements	
6	18 Mar	Requirements	
7	25 Mar	Testing	
8	01 Apr	Partial exams	
9	08 Apr	Semana santa	
10	15 Apr	Presentations / discussions	Software design
11	22 Apr	Presentations / discussions	
12	29 Apr	Fira d'empresses	Demo
13	06 May	Metafest - Infofest	
14	13 May	Company visit	Inter-group feedback
15	20 May	Presentations / discussions	
16	27 May	Presentations / discussions	Final project