

WHAT IS A REQUIREMENT?

EXPRESSING NEEDS

"A requirement is a condition or capability that must be met or possessed by whatever human invention, and it must be based on a clear need".



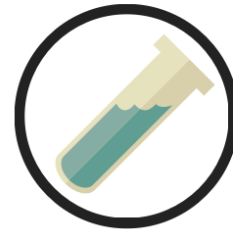
Client (me)



Engineer (you)



A requirement defines how a system must be or must operate.



The requirement must exist because of a reason, and this reason is "owned" by a human or other system.

Attributes of a requirement

Id	COMP-01
Text	The saddle shall be able to resist a weight of 200 kg (440 Pound) without bending.
Type	System Property
Description	...
Author	Juan Llorens
Other attributes	...

Types of Requirements

STAKEHOLDER REQUIREMENTS



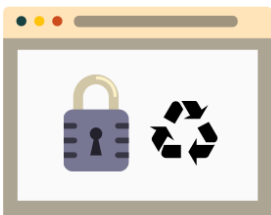
Representing the point of view, in form of needs, of the related agents around the system to be built.

FUNCTIONAL REQUIREMENTS



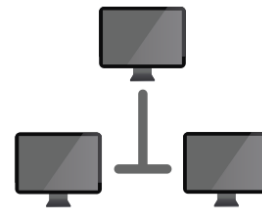
Describing capabilities, functions or tasks that a system must have.

SYSTEM PROPERTIES REQUIREMENTS



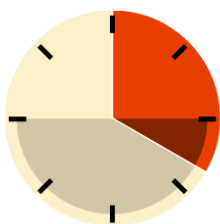
They are usually called **NON-FUNCTIONAL REQUIREMENTS** or **ilities-requirements** because they state non functional properties about the system: for example, quality, security, maintainability, reusability, portability, etc.

INTERFACE REQUIREMENTS



Describing how the system must interact with external systems.

PERFORMANCE REQUIREMENTS



Describing how well or in which conditions the system must perform a function.

OPERATIONAL REQUIREMENTS



The interface requirements between the system and the humans (users).

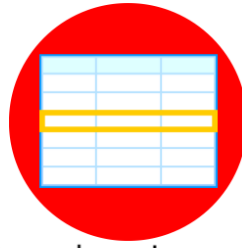
Representation of requirements

INFORMAL METHODS



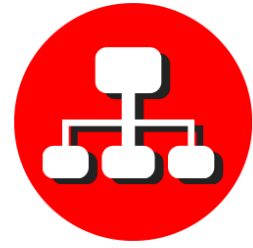
Using textual language supported by diagrams

FORMAL METHODS



Based on rigorous mathematical notation, that ensures the requirements correctness

SEMIFORMAL METHODS



Combines formal and informal methods, like UML/SYSML, DARTS etc

Do you know how to express your needs?

Juan Llorens - UC3M