



# How to write Requirements

## Audience

- Functional and business analysts
- Project managers
- Systems engineers
- Development engineers
- Quality managers (QA managers)
- Methodology managers
- Responsible for outsourcing

## Course Delivery Method

An interactive and highly practical format is used, encouraging student participation, so that they reflect on the theoretical concepts and learn to apply them effectively in their daily work.

Theory and practice alternate, combining theoretical concepts with a large number of practical exercises developed individually and in groups. The teacher will review the various solutions proposed by the students to identify errors and areas for improvement. Active audience participation is encouraged.

## Pre-requisites

None.

## Schedule and time

The course will be delivered in 1 session of 6 hours.

## Description

Most requirements are specified in natural language. Since domain experts, analysts, developers, users, etc. know how to read and write, it is taken for granted that they also inherently know how to formulate requirements. This is not necessarily true, because in order to correctly specify a requirement, a series of conditions must be fulfilled.

During a conversation in natural language, the participants reach a certain level of common understanding of the subject being treated. Misunderstandings often arise but, in most cases, they do not have significant negative consequences. However, in the requirements specification, the consequences of misunderstandings are often severe and sometimes very serious: delays, cost overruns, etc.

This course explains techniques and rules for proper use of natural language in the formulation of requirements, which is the usual way to express requirements to facilitate understanding between analysts and end users. It focuses on best practices for understanding and writing requirements, and the characteristics required of a good requirement specification. The final part includes the use of a tool that automates checking rules when drafting requirements: Visure Requirements Quality Analyzer©, which analyzes the quality of requirements specifications and offers recommendations to enhance the wording.

## Objectives

- Understand the advantages and disadvantages of each requirement specification method.
- Understand and apply rules for writing requirements.
- Understand and apply criteria for validation of a requirement specification.
- Know how automated tools for requirement validation work.

## Agenda

### ■ Course Introduction

This is a brief introduction of the course, its focus and contents.

### ■ Requirements specification methods

Different requirement specification methods are identified, with emphasis on natural language as the most widely used vehicle in most environments. Students analyse the difficulties caused by the use of natural language in requirements specification: natural language's inherent ambiguity makes it fairly unreliable and a common source of misunderstandings.

### ■ Requirements validation criteria

This section describes the characteristics that each requirement should have in order to be considered as properly specified (conciseness, clarity of meaning, completeness, unique identification, etc.). Each characteristic is studied in detail and rules that will help put it into practice are proposed, together with examples designed to facilitate students' understanding of the application of such rules.

### ■ Criteria for the validation of requirement sets

This section describes the characteristics that the set of requirements should have in order to be considered correct (completeness, consistency, etc.). Recommendations are given on how to verify the practical fulfillment of each of these characteristics.

### ■ Requirements validation with Visure Requirements Quality Analyzer

In this section of the course it is briefly shown an example of automated application of the rules analyzed in earlier sections using the Visure Requirements Quality Analyzer tool that uses natural language processing techniques in order to detect non fulfillment of requirement validation rules and to propose improvements to be applied for fulfillment.

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