

# Requirements Validation And Functional Decomposition

Lesson 00:

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## Document History

Date	Course Version No.	Software Version No.	Developer / SME	Change Record Remarks
	0.1D	NA		Content Creation
	0.1	NA		Review
May-2009	1.0	NA	Priya Rane	Material Revamp
June-2011	1.1	NA	Selva Lakshmi P.	Material Revamp
Aug-2013	2.0	MS Excel 2003	Shilpa Bhosle	Material Revamp
April – 2015	2.1	MS Excel 2010	Shilpa Bhosle	Material Revamp

### Course Goals and Non Goals

#### ■ Course Goals

- At the end of this course participants gain an understanding of what is requirement and what is requirement engineering
- Differentiate between two types of requirements – Functional Requirement and Non Functional requirements
- What is the importance of requirements in projects?
- What are the characteristics of good requirements?
- What is Requirement Itemization?
- How to use different templates to perform requirement itemization with the help of a case study?
- How to manage and successfully execute change in the requirement during Project life cycle?
- What is Requirement Traceability?



#### ■ Course Non Goals

- This course does not cover tools training to manage requirements

### Pre-requisites

- Fundamental knowledge of Software Testing
- Different types of Software Testing techniques
- Different types of Software Testing

### Intended Audience

- Test Engineers and Senior Test Engineers



### Day Wise Schedule

- Day 1

- Lesson 1: Introduction to Requirements Engineering
- Lesson 2: Evolution and Types of Requirements
- Lesson 3: Requirements Itemization

- Day 2

- Lesson 3: Requirements Itemization (Cont.)
- Lesson 4: Requirements Gathering – Challenges & Techniques
- Lesson 5: Requirement Management

### Table of Contents

- Lesson 1: Introduction to Requirements Engineering
  - 1.1 Requirements Engineering and Projects failure
  - 1.2. Why do Projects fail? – Current Survey
  - 1.3 Requirements Contains Defects
  - 1.4 Importance of Requirements – Some statistics!
  - 1.5 Why do we need good requirements?
  - 1.6 What is a Requirement?
  - 1.7 Requirement Definition
  - 1.8 Why are Requirements important?
  - 1.9 Requirements Engineering

### Table of Contents

- Lesson 2: Evolution and Type of Requirements
  - 2.1 Evolution of Requirements
  - 2.2 Who provides the Requirements?
  - 2.3 Types of Requirements
  - 2.4 Functional Vs Non-Functional Requirements
  - 2.5 Do not overlook the “Non-Functional Requirements”!
  - 2.6 Non Functional Requirements: FURPS +
  - 2.7 Other Non Functional Requirements: “+”
  - 2.8 What is a good software requirement?



### Table of Contents

- Lesson 3: Requirements Itemization
  - 3.1 Requirements Itemization - How?
  - 3.2 Application Background
  - 3.3 Assumptions
  - 3.4 Explicit requirements
  - 3.5 Implicit requirements
  - 3.6 Interface Requirements
  - 3.7 Requirements Analysis to Test Scenarios
  - 3.8 Testable Items
  - 3.9 Non Testable Items
  - 3.10 Error Conditions
  - 3.11 Application Invocation
  - 3.12 Application Termination

### Table of Contents

- Lesson 3: Requirements Itemization (Cont.)
  - 3.13 File Handling
  - 3.14 Requirement Prioritization
  - 3.15 Case Study – Equipment Tracking System
  - 3.16 Template – 1 Equipment tracking System
  - 3.17 Template – 2 Equipment tracking System

### Table of Contents

- Lesson 4: Requirements Gathering – Challenges & Techniques
  - 4.1 Requirements Gathering – A Typical Illustration
  - 4.2 Requirement Gathering Patterns
  - 4.3 Challenges in Requirements
  - 4.4 Challenges – Clarity of requirements
  - 4.5 Challenges – Communication
  - 4.6 Ambiguity From a Requirements Perspective - Pitfalls of the English language
  - 4.7 Ambiguity and Pitfalls
  - 4.8 Ambiguity Checklist
  - 4.9 Ambiguity Review
  - 4.10 Requirement Gathering - Skills Required
  - 4.11 Tips to Requirement Gathering
  - 4.12 Identification and Verification of Requirements

### Table of Contents

- Lesson 5: Requirement Management
  - 5.1 What is Requirements Management?
  - 5.2 Why do requirements change?
  - 5.3 Stable and Volatile Requirements
  - 5.4 Requirements Classification
  - 5.5 Baselining Requirements
  - 5.6 Requirements Traceability
  - 5.7 Types of Requirements Traceability
  - 5.8 Requirement Traceability Matrix
  - 5.9 Maintaining Requirement Traceability
  - 5.10 Requirement Traceability Matrix – Simple Example

### Table of Contents

- Lesson 5: Requirement Management
  - 5.11 Change Management
  - 5.12 Change Request Management
  - 5.13 Change Management Process
  - 5.14 Define Requirement Creep
  - 5.15 Why does Requirement Creep occur?
  - 5.16 Measures to control Requirement Creep
  - 5.17 Requirement Metrics

### References

- Student material:
  - Class Book (presentation slides with notes)



## Next Step Courses (if applicable)

- None



## Other Parallel Technology Areas

- NA