

Phases of the Requirements Process

1. Requirement Elicitation
2. Requirement Analysis
3. Requirement Specification
4. Requirements Approval

Categorizing Requirements



Why Categorize Requirements

- Aids in documentation
- Helps to prioritize
- Assists in estimating the system cost
- Identifies areas that require further investigation



Categories of Requirements

Functional Requirements

Non-Functional Requirements

Constraints



Categories of Requirements

Functional Requirements

Non-Functional Requirements

Constraints

- Things the product must do
- Action the product must take



Categories of Requirements

Functional Requirements

Non-Functional Requirements

Constraints

- Properties or qualities the product must have
- How the product will behave



Categories of Requirements

Functional Requirements

Non-Functional Requirements

Product Constraints

- Global requirements
 - Purpose of the project
 - Users of a product



Deriving Requirements

Deriving Requirements

1. Parsing Requirements
2. Interpreting Requirements
3. Focusing Requirements
4. Qualifying Requirements

Parsing Requirements

Breaking down requirements that are too broad

Parsing Requirements

Original Requirement:

- “User-completed fields on tax forms shall be converted to electronic text documents.”

Parsed Requirements:

- “The system shall be able to convert handwriting to text.”
- “The system shall be able to convert machine print to text.”
- “The system shall be able to electronically correct user-completed fields.”

Parsing Requirements

Removing “and” from requirements

- Risk is high that only one of the conditions will be tested
- Hard to trace the requirement bug/failure

Interpreting Requirements

Interpreting Requirements

Reduce generalness and ambiguity of stated requirements

Interpreting Requirements

Original Requirement:

- “Each PC shall have state-of-the-art software installed.”

Interpreted Requirement:

- “Each PC shall have Microsoft Office 2013 and Windows 10 installed.”

Parsed Requirements:

- “Each PC shall have Microsoft Office 2013 installed.”
- “Each PC shall have Windows 10 installed.”

Focusing Requirements

Combine overlapping requirements into one focused requirement

Focusing Requirements

Original Requirements:

- “Each PC must have a standard spreadsheet tool installed that runs in Windows.”

Focused Requirement:

- “Each PC on the LAN shall have Microsoft Office Excel 2013.”

Qualifying Requirements

Add a requirement to provide a method of verification or compliance

Qualifying Requirements

Original Requirement:

- “The xxx command must perform the following actions...”

Focused Requirement:

- “Each command shall be executed during system testing to demonstrate its functionality.”

Assigning Requirement Attributes

Why Assign Requirement Attributes

- Clarification
- Filtering
- Validation

Typical Attributes

- Unique Identifier
- Acceptance Criteria
- Author
- Complexity
- Ownership
- Performance
- Urgency
- Business Value
- Status
- Type
- Priority
- Source

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Prioritizing Requirements

Why Prioritize Requirements

Generally there are too many functions and features to implement within the project schedule and budget.

Prioritization Factors

- Value to the business
- Value to the customer
- Minimize cost to develop
- Time to implement
- Ease of technical implementation
- Ease of business implementation
- Obligation to some external authority

3 Step Prioritization Process

Step 1

Define usefulness to business (critical, important, nice to have)

Step 2

Estimate cost (1-5 scale)

Step 3

Determine timeframe (1-5 scale)

Requirement Prioritization Best Practices

- Keep it simple
- Business value reigns supreme
- Remove prioritization away from politics
- Prioritize (and re-prioritize) after each project iteration

Validating Requirements



The Business Requirements Document (BRD)

Business Requirement Document (BRD) Basics

- What is a Business Requirements Document?
- Who prepares it?
- What is it used for?
- What is the standard format?



BRD Template

