

Requirements Analysis and Specification

Business Rules, MoSCoW Prioritisation, User Stories and
Acceptance Criteria

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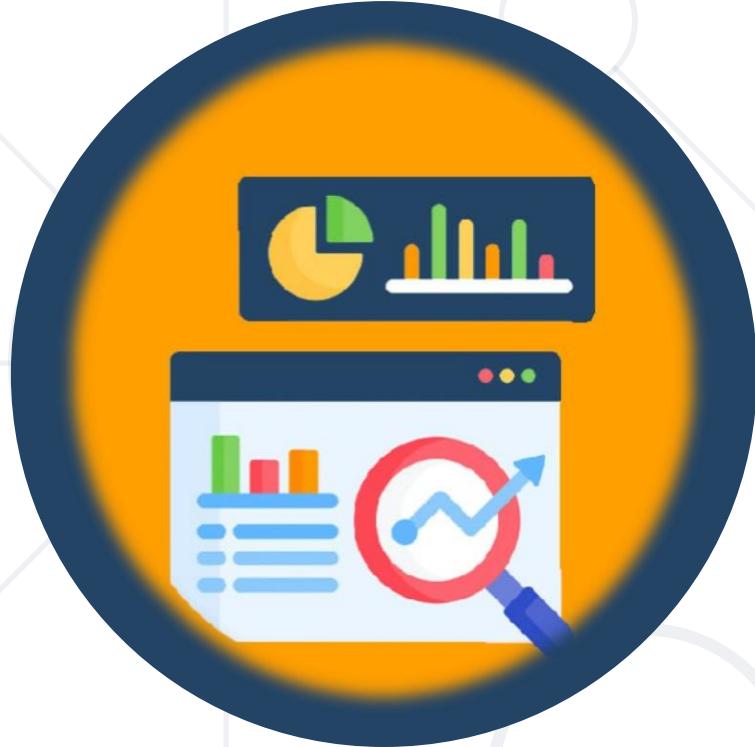
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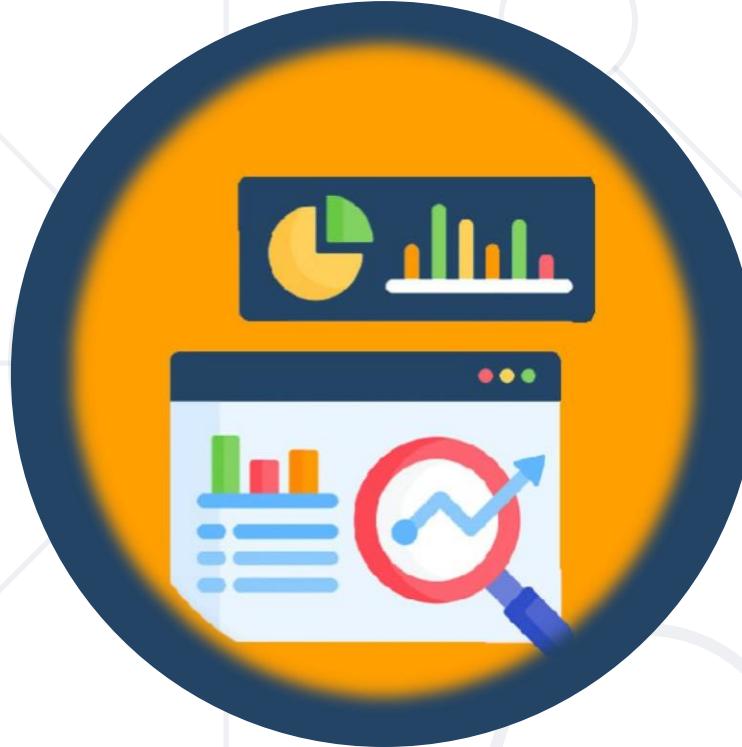
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BRD Examples



Specification of Project Requirements

Quick Recap about Requirements



"do" (verb)

"be"
(adjective)



*"the mobile app will be easy to use and organized to minimize
...user errors"*



*"the mobile app shall have seamless UI to enable users to
"the user shall not make more than 2 errors per day"
achieve their goals in no more than three minutes"*

What Should be Considered



What else should be
considered in the project?

Business rules describe the operations, definitions and constraints that apply to an organization

Intended to assert business structure or to control or influence the behavior of the business.

Outline the policies, procedures, or regulations that govern how the business operates.

Defined by stakeholders, subject matter experts, or regulatory bodies

Business Rules Examples

- A customer must be at least 18 years old to purchase alcohol
- All employees must submit their timesheets by Friday at 5:00 PM
- If an item is out of stock, customers should be notified and offered a rain check
- Customers must have a valid driver's license to rent a vehicle
- A quote must be completed prior to an invoice being generated

Business Rules vs. Business Requirements

- **Business Rules** are lists of statements that tell you whether you may or may not do something or that give you the criteria and conditions for making a decision
 - Guidelines for behavior and decision-making within business
- **Business Requirements** are what you need to do to enable the implementation of and compliance with Business Rules
 - Describe the high-level goals and outcomes that a project or initiative should achieve
- **EACH BUSINESS RULE MAY NEED MULTIPLE REQUIREMENTS**



Business Rules vs. Business Requirements

Business
Rule

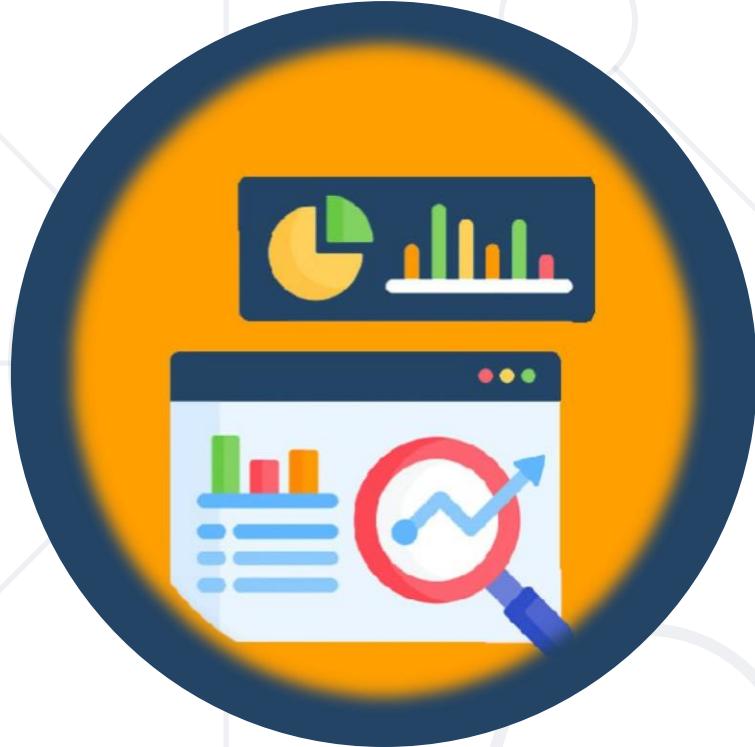
A quote must be completed prior to an invoice being generated

Business
Requirements

Capability to enter a quote

Details from quote must automatically flow to the invoice

Ability to tie the quote and invoices together for reporting

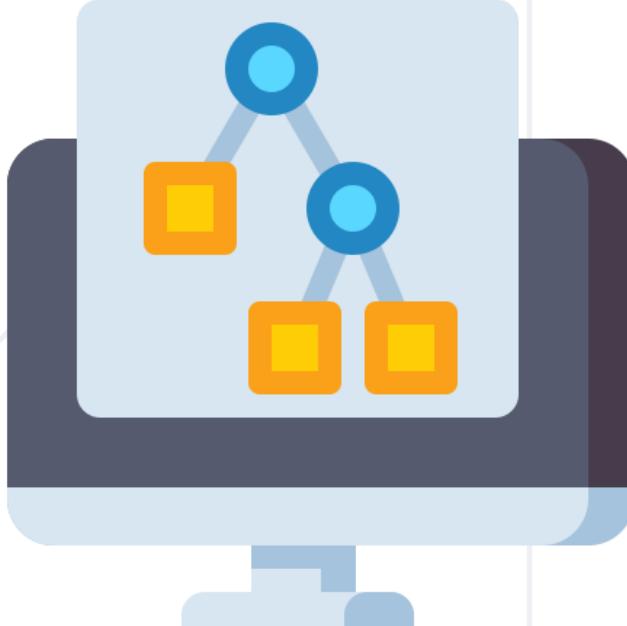


Deriving Requirements

Deriving Requirements



Parsing Requirements



Breaking down requirements that are too broad. Basically removing “and” from requirements.

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

Interpreting Requirements (1)



Reduce generalness and ambiguity of stated requirements

Interpreting Requirements (2)

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.

Focusing Requirements (1)



Combine overlapping requirements into one focused requirement

Focusing Requirements (2)

Original Requirement

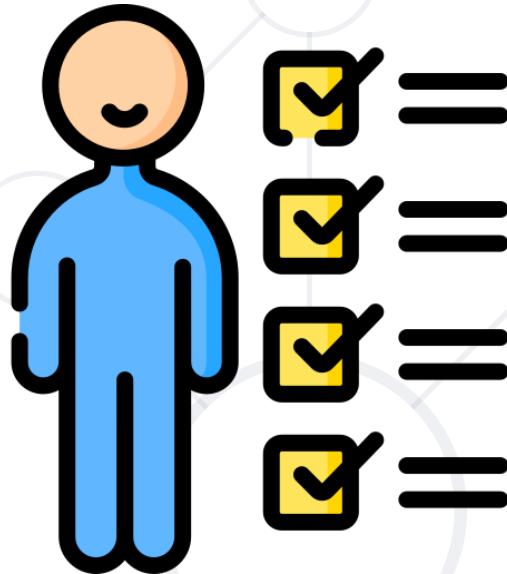
Each PC must have a standard spreadsheet tool installed that runs in Windows

Each PC must have a standard tool for creating text documents installed that runs in Windows

Focused Requirement

Each PC on the LAN shall have Microsoft Office Package 2013

Qualifying Requirements (1)



Add a requirement to provide a method of verification or compliance

Qualifying Requirements (2)

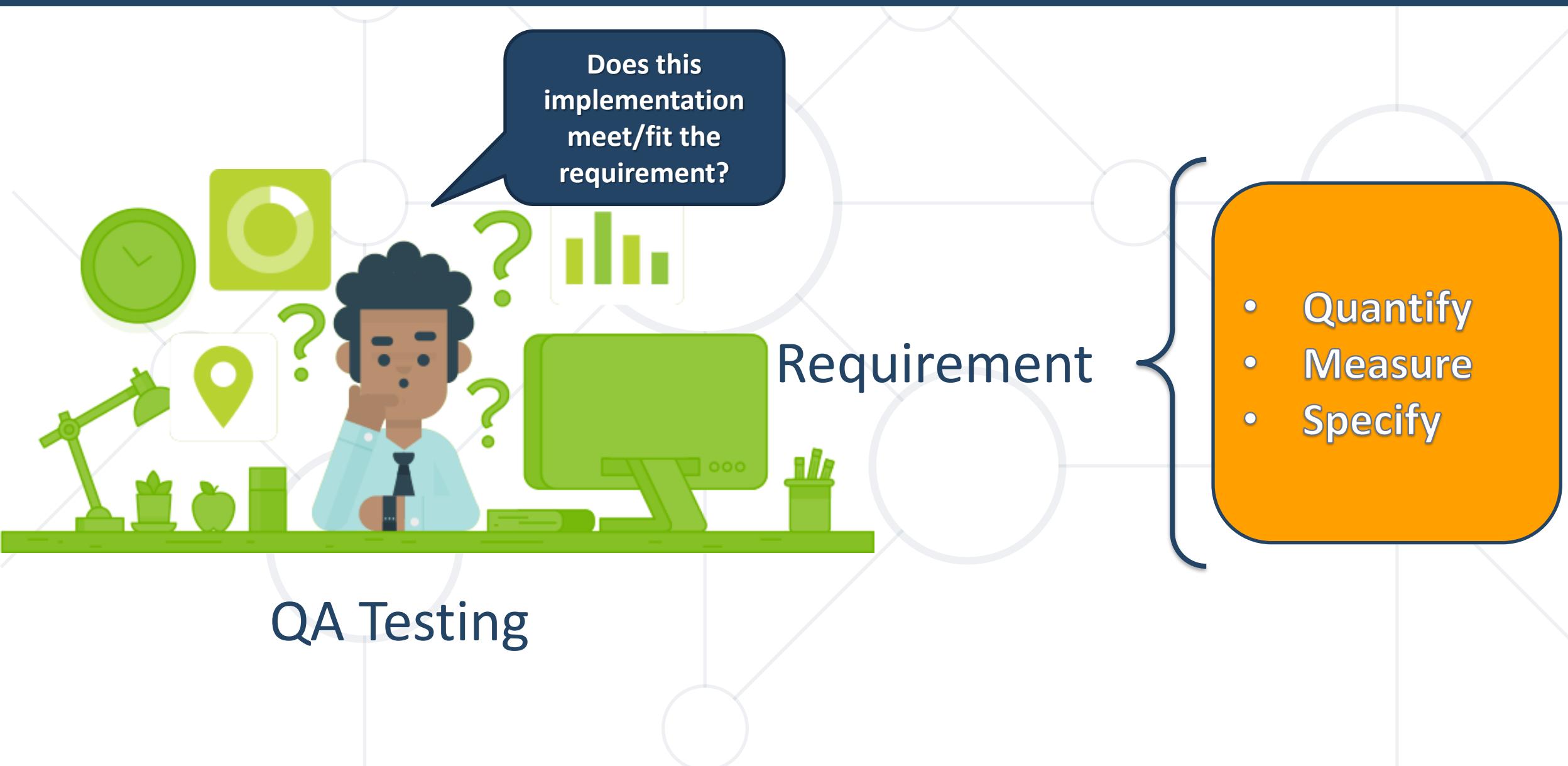
Original Requirement

The xxx command must perform the following actions...

Qualified Requirement

Each command shall be executed during system testing to demonstrate its functionality

Foundations for Testing



Fit Criteria specifies how you will know that the product has successfully carried out that action

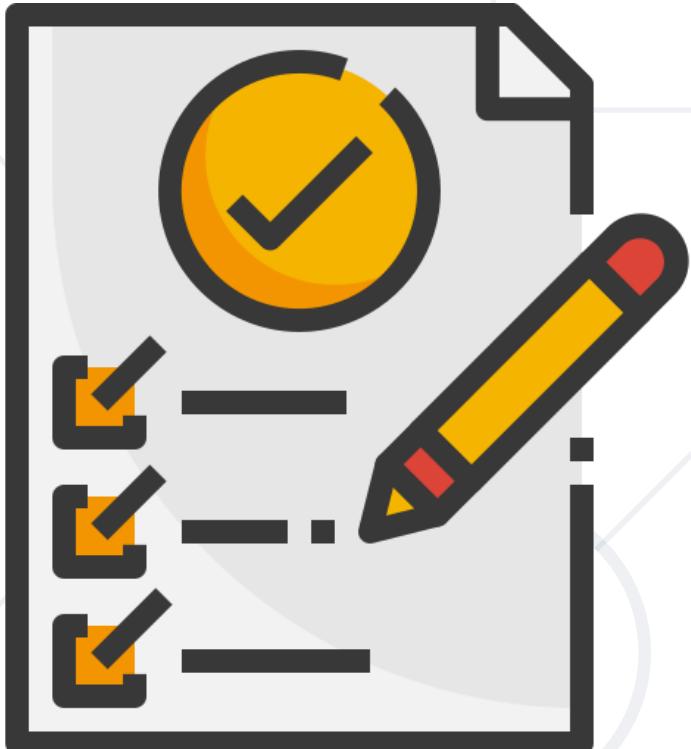
Requirement

The System shall record all the roads that have been treated

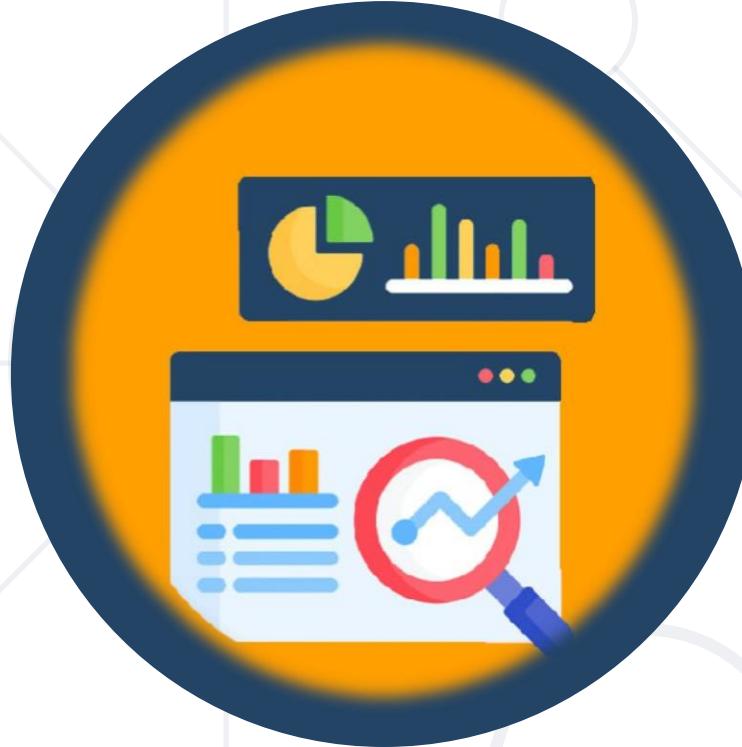
Fit Criteria

The recorded treated roads shall agree with the driver's road treatment logs and shall be up to date within 30 minutes of the completion of the road's treatment

Requirements Attributes



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



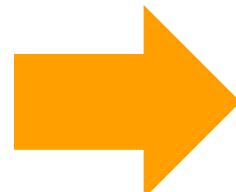
Prioritisation of Requirements

PRIORITY

Requirements Prioritization

Requirement Prioritization is the process of ***identifying and ranking the importance*** of different requirements to ***achieve the project goals and objectives***

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



Helps to ensure that ***resources and efforts*** are focused on the ***most critical requirements*** to achieve maximum value

MoSCoW Method



M

All the requirements that are necessary for the successful completion of the project

S

Requirements that are important for project completion but not necessary

C

Requirements that are nice to have but have a much smaller impact when left out of the project

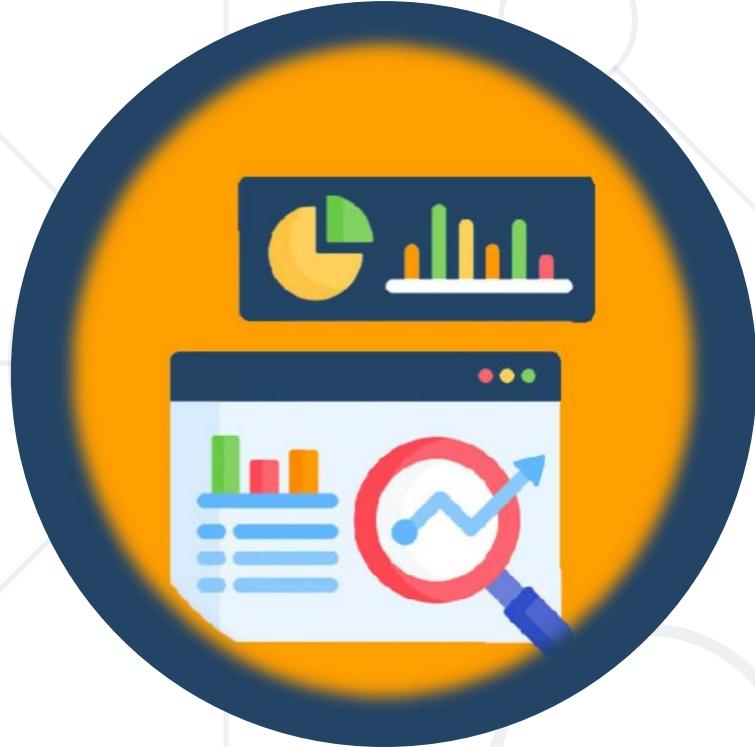
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All the requirements that have been recognized as not priority for the project's timeline

Other ways of Requirements Prioritization

- Some companies just adopt the **1-3 scale**
 - 1-3 to define **usefulness** and **value** to the business
(Critical, Important, Nice to have)
 - 1-3 **Estimated Cost** for development of particular requirement
 - 1-3 to determine **Timeframe**
 - Up to you if you want to use 1-3 scale or MoSCoW for Requirement Prioritization for the project



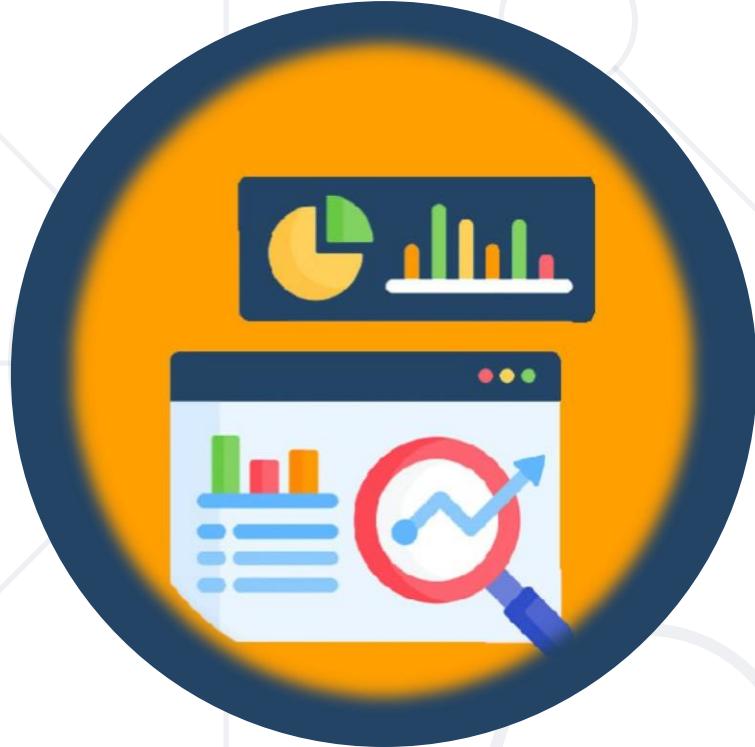


Documentation of Requirements

Documentation of Requirements

ID	Requirement	Type (F or NF)	Priority (MoSCoW)	Fit Criteria
1	The system shall provide a notification feature to alert users of important updates or events	F	Must-have	Users should receive timely notifications within the system to stay informed about critical updates or events
2	The application shall maintain a response time of under 2 seconds for user interactions to ensure a seamless user experience	NF	Should-have	The application's response time, from user action to system response, should consistently be below 2 seconds to provide a satisfactory user experience





How to Describe the User's Needs?

User Story

As a [description of user/role],
I want [functionality/action]
So that [benefit/business value].

Acceptance Criteria

Given that [precondition],
When [action]
Then [expected results].



Requirements Through the User's Eyes (2)

- **User [Who]**
- **Needs [What]**
- **Goals [Why]**
- “Why” – link between **User Goals** and
 - **Acceptance Criteria**
 - **Acceptance Tests**

As a [*description of user/role*],
I want [*functionality/action*]
So that [*benefit/business value*].



User Story Example 1

User Story: As a user, I want to be able to request the cash from my account at an ATM, so that I will be able to receive the money from my account quickly and in different places.

Scenario 1: Requesting the cash from a creditworthy account

Given that the account is creditworthy

And the card is valid

And the dispenser contains cash

When the customer requests the cash

Then ensure the account is debited

And ensure cash is dispensed

And ensure the card is returned.

User Story Example 1

User Story: As a user, I want to be able to request the cash from my account at an ATM, so that I will be able to receive the money from my account quickly and in different places.

Scenario 2: Requesting the cash from an overdrawn account

Given that the account is overdrawn

And the card is valid

When the customer requests the cash

Then ensure the rejection message is displayed

And ensure cash is not dispensed.

User Story Example 2

User Story: As an online shopper, I want to be able to add items to my shopping cart, so that I can review and purchase them later.

Scenario 1: Adding a single item to the shopping cart

Given that the user is browsing a product on the website,

When they click the "Add to Cart" button

Then item should be added to their shopping cart,

And the cart quantity should increment by 1,

And the cart total should reflect the price of the added item.

User Story Example 2

User Story: As an online shopper, I **want to** be able to add items to my shopping cart, **so that** I can review and purchase them later.

Scenario 2: Adding multiple items to the shopping cart

Given that the user is browsing multiple products on the website,

When they click the "Add to Cart" button for each product,

Then all the selected items should be added to their shopping cart,

And the cart quantity should increment by the number of added items,

And the cart total should reflect the prices of all the added items combined,

User Story Example 2

User Story: As an online shopper, I **want to** be able to add items to my shopping cart, **so that** I can review and purchase them later.

Scenario 3: Verifying the shopping cart contents

Given that the user has added items to their shopping cart,

When they navigate to the shopping cart page,

Then they should see a list of all the added items.

And each item should display its name, quantity, price, and a subtotal,

And the cart total should reflect the sum of all the item subtotals.

Why Do We Need User Stories and Acceptance Criteria?

- Additional context
 - What are the groups of users our system will serve?
- Collaboration
- Clarity
 - What are the user's needs and goals?
- Quality Assurance





Practice

Live Exercise in Class (Lab)

You have the following Business Rule for online purchases from Supermarket:

A customer must be at least 18 years old to purchase alcoholic beverages.

- Identify 5 Business Requirements that can come out of this Business Rule
- Create Fit Criteria for each of the identified Business Requirements
- Write 2 User Stories with Acceptance Criteria for each

Solution of Task 1 – Business Requirements

- The system shall verify the customer's age before allowing the purchase of alcoholic beverages
- The customer profile shall include the date of birth to determine eligibility for purchasing alcohol
- When a customer attempts to add an alcoholic beverage to their cart, the system shall display a prompt for age verification
- If the customer's age is below 18, the system shall prevent the purchase of alcoholic beverages and display an error message
- The system shall maintain a record of all age verification attempts and outcomes for compliance auditing purposes



Solution of Task 1 – User Story 1

User Story: As a store administrator, I want the system to verify the customer's age before allowing them to purchase alcoholic beverages, so we can comply with legal age restrictions

Acceptance Criteria:



Solution of Task 1 – User Story 2

User Story: As a store administrator, I want to include the customer's date of birth in their profile, so the system can verify their eligibility for purchasing alcohol

Acceptance Criteria:



Homework

- **Start drafting Fit Criteria for the identified Requirements from the Case Study**
 - Use the deriving options where needed
- **Prioritize based on the business needs**
 - Start documentation in the BRD
 - **(Optional)** Send up to 5 questions if needed about clarifying how crucial are some of the business needs to the project to better prioritise the requirements.

Summary

- Business Requirements should comply with **Business Rules**
- **Deriving Requirements** is a 4-option process for clarifying
- **Fit Criteria** is the final step of deriving requirements to set the foundations of Testing
- **User Stories** and **Acceptance Criteria** are the final form of presenting Business Requirements and Fit Criteria through the User's perspective
- **MoSCoW Prioritization** of Requirements is key technique for ranking the importance of business needs

Must/Should/Could/Won't



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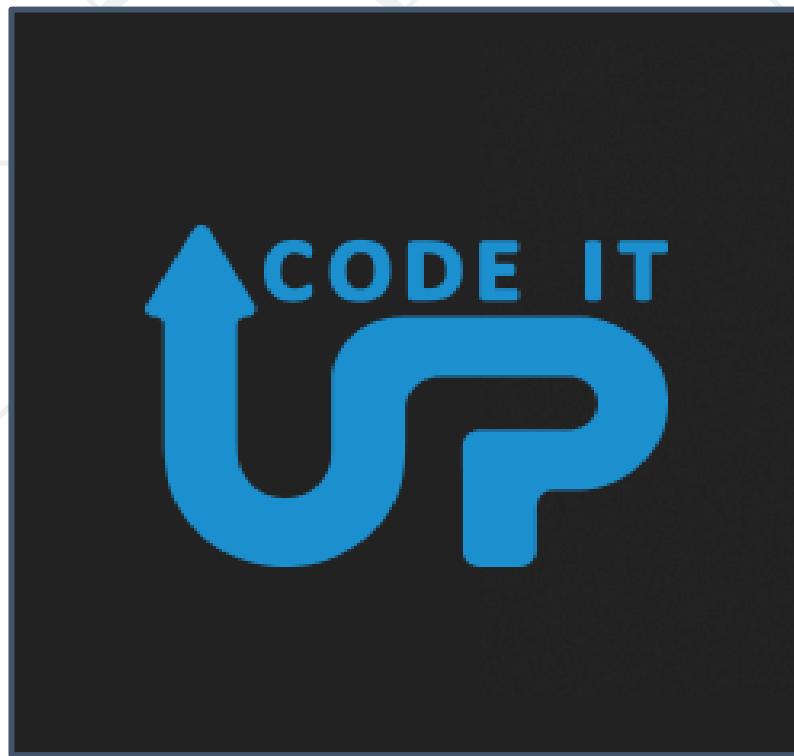
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