

Module 3 – Topic 3.4



Quality Requirement

Topic Outline

▶ Criteria for User Stories

▶ INVEST

Independent

Negotiable

Valuable

Estimable

Small (Sized appropriately)

Testable

▶ Correct

▶ Clear

▶ Consistent

▶ Feasible

▶ Traceable

▶ Ambiguous Requirements

- ▶ Recognize if a user story is free of ambiguity, and if not, how to clarify ambiguous terms



Recall INVEST Mnemonic

I ndependent	A user story can be developed separately from any other user story
N egotiable	A user story should be general enough for the team to work around the implementation
V aluable	Each story should bring some sort of value to the client
E stimatable	You should be able to estimate how long it will take to design and implement a user story
S mall	A user story should be able to be designed, coded, and tested within the iteration
T estable	you need to verify that every user story meets a certain set of criteria before it can be considered done



There are More!

- ▶ Correct
- ▶ Clear
- ▶ Consistent
- ▶ Feasible
- ▶ Traceable



Correct

- ▶ If the user's stories are wrong, your development team is going to spend time developing a feature that **isn't what the client intended**

Recall client request in Restaurant Scenario:

... And if they want to order it, they'll push order. That should take them to another page where they can specify changes to the meal and any dietary restrictions they may have **before** sending the order to the kitchen. ...

An incorrect user story in Restaurant Scenario:

*As a customer, I want to be able to make changes to the dishes I order **after** I've submitted the order to the kitchen, so that I can customize their preparation to my liking*



Read the Client Request

When I picture a customer interacting with the app, I envision that there should be one or more tablets at each table for customers to use for ordering. I see them browsing through images of the food. If they want to read more about a dish, they can tap on it.

And if they want to order it, they'll push order. That should take them to another page where they can specify changes to the meal and any dietary restrictions they may have before sending the order to the kitchen.

When there is more than one customer at a table, I want it to work like a shopping cart for an online shopping system. I want to have it so that each customer could select their own order as the tablet gets pass around the table or one person the table could input everybody's order, doesn't matter.

All the orders on the same bill would have to be submitted from one tablet. The additional tablets would be there for people to browse the menu or place an order for a different bill. There should be no minimum or maximum order. When all the orders have been entered and customized, customers can then submit their to the kitchen by tapping submit order.



Quick Question

Which of the following user stories are correct?

- A. As a customer, I want to browse the menu for the restaurant I'm in, so that I can see what dishes and drinks they offer
- B. As a customer, I want to be able to be able to identify my dietary restrictions to the kitchen, so that I can avoid certain ingredients in my dishes
- C. As a customer, I want to be able to custom order a dish not on the menu, so that I can have a unique food experience
- D. As a customer, I want to be able to see nutritional information, so that I can choose dishes that suit my diet



Clear

- ▶ User stories are easy to understand and exact with only a single interpretation

Is this user story clear or ambiguous?

As a customer, I want both the adult and kids menus to have games, so that something fun to do while we wait for our food

Rather than just depending on natural language descriptions, supplement your requirements with **visual descriptions**, such as wireframes and storyboards

Reduce ambiguities by **Requirements Technical Review and Repair**. We will cover this in **Module 4 – Topic 4.1 Software Reviews**.



Consistent

- ▶ The requirements don't conflict with one another

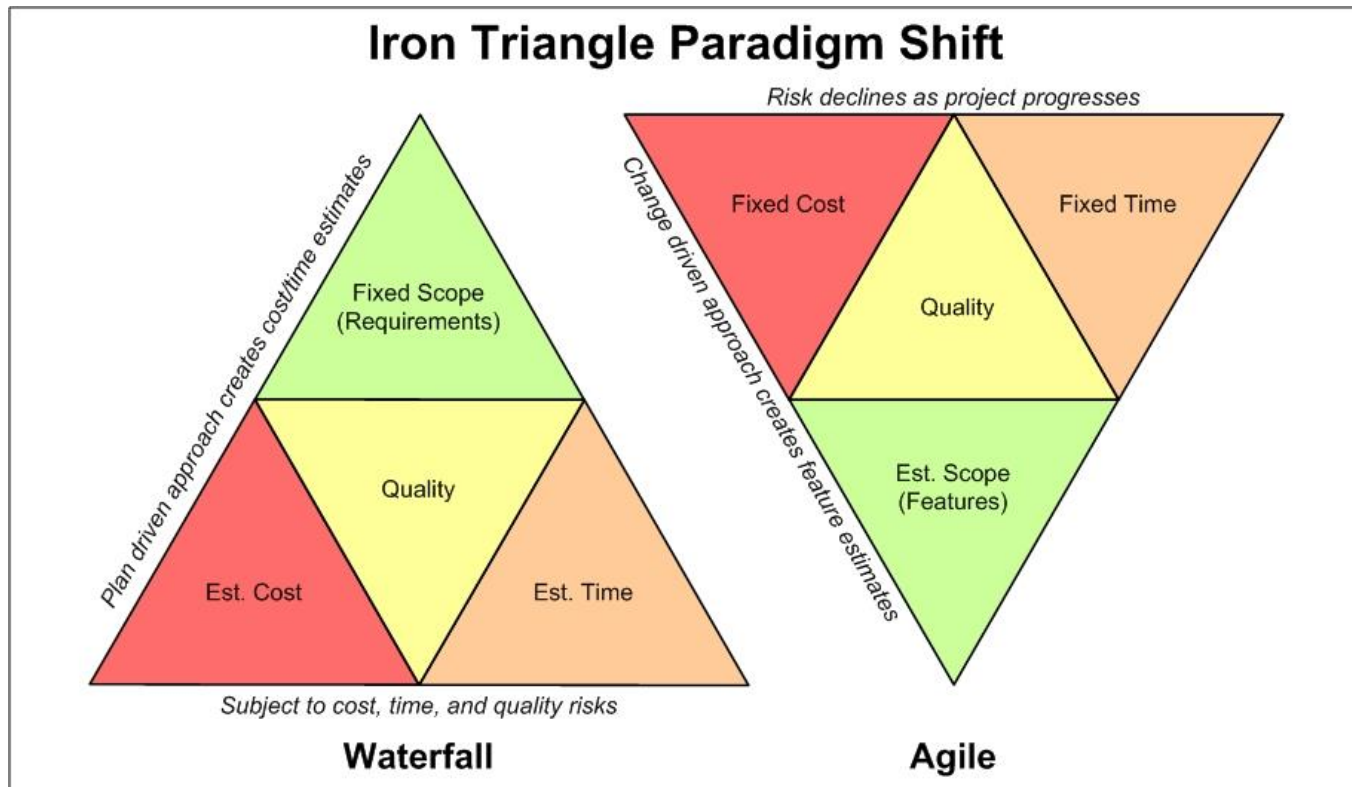
Which of these user stories conflict with each other?
Select the two user stories that are not consistent with each other.

- A. As a kid customer, I want to order my own meal so that I get my desired meal
- B. As a customer, I want to view the order once it's been placed, so that I can ensure we ordered correctly
- C. As a kitchen staff, I want to view received orders, so that I can know what dishes to prepare
- D. As a customer, I want to order for my family, so that I can monitor what they eat



Feasible

- ▶ Each requirement can be implemented with the technology and resources that are available within the specified cost and schedule constraints



Traceable

- ▶ Each requirement is connected to associated design and implementation artifacts in some trackable way

Having your user stories traceable means that necessary code is being written and that all your requirements are tested



Ambiguous Requirements

The Goal of Reducing Requirement Ambiguity

You are **not** removing ambiguity for the sake of **perfect language**.

The goal is to get to a good enough point where the meaning of the requirement or user story is **accurately understood** by the developers.



Ambiguous Requirement Categories

- ▶ Indirect words
- ▶ Vague words
- ▶ Persuasion words
- ▶ Completion words
- ▶ Qualifiers
- ▶ Comparatives
- ▶ Quantities
- ▶ Pronouns
- ▶ Positional words
- ▶ Temporal words
- ▶ Joining words

Keep in mind that using these words will **not always** lead to ambiguity, they just need to be considered carefully and you may need to add **some additional information** to remove the ambiguity



Indirect Words

The use of words that suggest the possibility of something happening, but not specifically how so or when

Examples:

- Should
- Could
- Sometimes
- Often
- Usually
- may
- Will

Should or could	might signify ambiguity if the statement does not explain the circumstances that must be present in which an event should or could happen
May	could imply that something must be as described, or it could imply that something could be as described or could be something else entirely
Will	a sign of ambiguity if the statement does not specify when the event will happen. Is it all of the time or just some of the time?

As an online poker player, I **may win money**, so that I am awarded for winning games



As an online poker player, I **win money when I win a game of poker against my opponents**, so that I am awarded for winning games

Vague Words

Common actions, object names, or saying that lack details in the description. It is not that there could be multiple interpretations to decide among, it is that there is not enough specifics to make any interpretation.

Examples:

Vague actions

- Process
- Handle
- Operate

Vague objects

- Item
- Entity
- Unit

Vague saying

- As appropriate
- Where applicable
- With reason

Item, entity or unit

Either replace these terms with a more descriptive name, or ensure that the term is defined in the product glossary and used consistently.

As an online store owner, I want all purchases for an order to be *processed*, so that we can complete the order



As an online store owner, I want all purchases for an order to be *shipped within 5 business days*, so that we can complete the order



Persuasion Words

Try to persuade the meaning of a statement, or assume previous knowledge

Examples:

- Clearly
- Certainly
- obviously

Clearly,
certainly, or
obviously

If a statement is “obvious”, is it truly obvious to all readers? Why should the reader believe it? Is the statement asserting an opinion, not fact? User stories should not need to persuade, so avoid these words.



Completion Words

Imply that there are more members in a list that could be named but are not for brevity

Examples:

- And so on
- And so forth
- Etc.
- Also

And so on, etc.

Make sure that if you are listing things, you are completing the list with all necessary details. Do not leave parts of the list up for interpretation.

Also

This term is normally some addition to an existing statement. This ambiguity normally results from getting the phrase out of context.

Normally, there would be a sentence before it that puts into context what the “also” implies. However, your requirements should be able to stand alone and be independent of each other. So make sure that if you use the term “also” in a requirement that you provide the context as to what that “also” means.

*As a document creator, I want to **also** store the text document in the desktop folder, so that I can easily access it*

“also” being interpreted as?

- the text document appears somewhere else other than the desktop folder
- another document appears in the desktop folder along with the text document
- in addition to what I was doing, I also stored the text document in the desktop folder

Qualifiers

May signify ambiguity because they qualify or modify some condition

Examples:

- | | | |
|---------|----------|-------------|
| • All | • None | • Sometimes |
| • Every | • Never | • Often |
| • only | • Always | • usually |

All or every

The words “all” and “every” cause ambiguity for similar reasons. The examples below could imply that all social media users are using the same account, or they could imply each user has their own account.

Only

Use this word carefully, especially in the English language, because depending on where the word “only” is put in a sentence, it could cause the meaning to be totally different

“All” or “every” uses the same account or their own account?

- As an Admin, I want **all** social media users to use an account so that I can track their usage
- As an Admin, I want **every** social media user to use an account so that I can track their usage

Tell the differences?

- **Only** premium account holders are allowed to read the full online article
- Premium account holders are **only** allowed to read the fully online article
- Premium account holders are allowed to read the **only** fully online article

Quick Question

“As an administrator I want **every** end user to have access to a guest account so that they don't need to create a personal account”

Which of the following is the best way to write this user story?

- A. as an administrator, I want each end user to have access to a guest account, so that they don't need to create a personal account
- B. as an administrator, I want each end user to have access to their own guest account, so that they don't need to create a personal account
- C. as an end user I want to access a guest account so that I don't need to create a personal account
- D. as an end user I want to access my own guest account, so that I don't need to create a personal account



Comparatives

Phrases that are comparing two or more things

Examples:

- A is the same as B
- A is bigger than B
- A is the biggest
- A is as big as B

Be sure to be specific when you are comparing two objects. What specific attribute of the objects is being compared?



What **specific attributes** is being compared for a “successful” car?



Quantities

May signify ambiguity because they quantify some condition

Examples:

- A or an
- Some
- most
- few

A or an

A or An are words that you encounter frequently. In the example below, “a crossword puzzle” could mean “only one crossword puzzle” or “at least one crossword puzzle.”

Some, most,
few

These words signify ambiguity if the statement does not give a specific quantity or which items are involved.

*As a crossword puzzle solver, I want the application to have **a** crossword puzzle, so that I can challenge myself in a diversion I enjoy*

“a” means?

- only one puzzle on the application or
- at least one puzzle on the application

Pronouns

Words that take the place of a noun

Examples:

- | | | |
|-------|--------|--------|
| • He | • You | • Our |
| • She | • They | • This |
| • It | • Us | • That |

Pronouns lead to ambiguous phrases because it could be unclear the noun that the pronoun is representing.

As a *virtual farmer*, I want to grow, so that I can sell *it* for virtual funds



As a *virtual farmer*, I wanted to grow, so that I can sell *the virtual animals* for virtual funds



Positional Words

Signify a position in some group or queue	
Examples: <ul style="list-style-type: none">• After• Before• Following• Last	
After, before, or following	Directly after or anywhere after?
Last	“the last entry”, the previous entry or the entry that appears at the very end or this entry will be the final entry?

Directly before (after) or
anywhere before (after)?

Entry A appears **before** Entry B
Entry A appears **after** Entry B

“last” interpreted as?

I want to change the **last** entry



Temporal Words

These are words that relate to time or events. You could also include some of the positional words in this category if you are referring to time instead of position.

Examples:

- When
- For
- Until
- From
- Current
- Latest

When

Consider the example, “**As a runner, I want the lap timer to set to zero when I start a lap around the track, so that I can monitor my pace**”. This could be interpreted to mean that the timer is set to zero at the time the runner starts a lap. It could also mean that the timer is set to zero the first time the runner starts a lap. But it could also mean that the timer is set to zero each time the runner starts a lap around the track.

For

Consider the example, “**As a camper, I want the product to show the weather for the next 3 days, so that I can see what the weather will be while I’m camping**”. This user story can be interpreted in two ways. One way is that the product shows a three-day weather forecast. But another way is that the product displays the daily weather during the next 3 days and stops displaying after that.



Quick Question

“As a user, I want to be able to delete the last task, so that it no longer appears in the list.” You recall in a discussion with potential users, the last task refers to the most recent task that a user created.

What would be a better way to write this user story?

- A. as a user, I want to delete tasks, so that they no longer appear in the list
- B. as a user I want to delete the task I just created so that it no longer appears in the list
- C. as a user, I want to delete the last task created so that it no longer appears in the list
- D. as a user, I want to delete the last task shown in my list so that it no longer appears in the list



Joining Words

Words that combine 2 or more phrases or objects	
Examples: <ul style="list-style-type: none">• And• Or• Both	
And	<p>Consider the user story, “As a retail merchant, I want to print clearance signage, so that the store has a sale when it has too much merchandise and when the seasons change.”</p> <p>Does this mean that the store has a sale when they have too much merchandise, and they have a sale when the seasons change? Or does it imply a double condition in which the store only has a sale when the store has both too much merchandise and the season is changing? In the first case, it is clearer to break the requirement into two separate requirements to satisfy independently.</p>
Or	<p>The issue with the word “or” is that it doesn’t distinguish what happens in the case that both conditions are true.</p>



Do not Forget Glossary

► Check glossary for ambiguous terms

- Replace terms from your user's stories with their glossary definitions.
- Do your user stories still make sense? Does your glossary definition represent the term properly?
- Do you need to add more terms to your glossary, redefine terms in your glossary, or rewrite some of your user stories?

