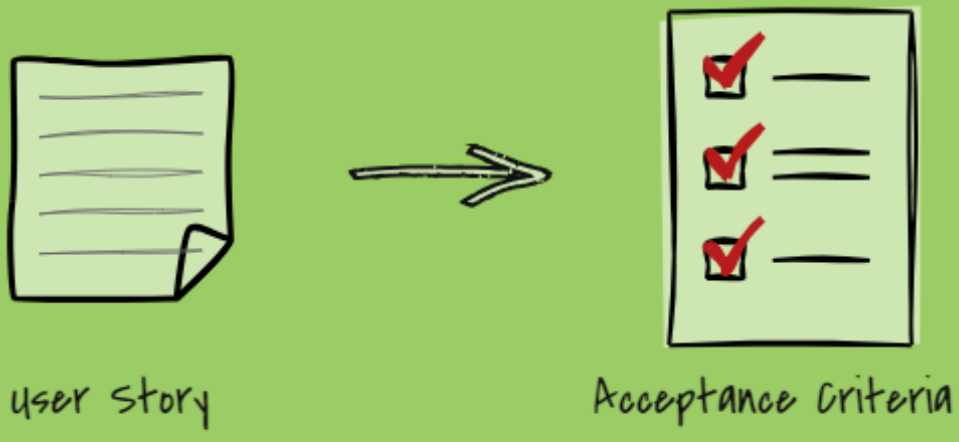
Acceptance Criteria the BDD way (Behaviour Driven Development)



BDD Acceptance Criteria

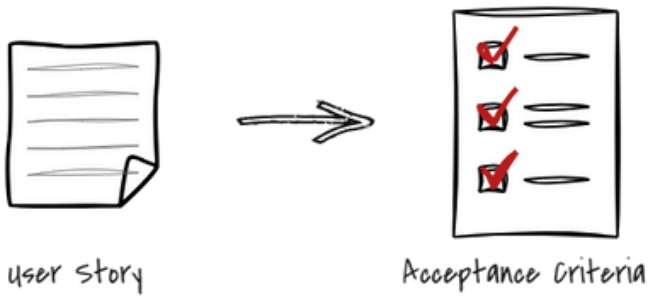
WRITING STORIES, THE BDD WAY

User stories are an informal way to specify the changes required to features of a system. Stories in their simplest form are a reminder to have a conversation, yet often there is a need to specify stories in a slightly more structured way. This is especially true of acceptance criteria – when one compares stories written by various individuals or teams the specification of acceptance criteria differs significantly. Some are very clear, some quite obtuse and confusing. And acceptance criteria actually tell one a whole lot more about a story than the "As a... I can... so that..." part of the story. There is no prescribed way to specify criteria, but Behaviour Driven Development (BDD) mapmaker, Dan North, has come up with a really useful way of specifying stories, in particular the acceptance scenario part of it. Dan's work is available widely but what follows is a brief summary.

Dan suggests the following format:

Story Title: [one line]
As a [role]
I want [feature]
So that [benefit]

Scenario: *[Title]*
Given *[context]*
and *[some more context]*
When *[event]*
Then *[outcome]*
and *[another outcome]*...



Not a lot different in the first part of the story, except for the explicit naming of the story. The main difference is the structure introduced for the acceptance criteria.

TITLE is an (obvious) descriptive name for the scenario

GIVEN describes the state of the world before the action the story is depicting (the *"I want"* part of the story) is attempted

WHEN describes the event the story is depicting (the *"I want"* part of the story)

THEN describes the state of the world, what must be true for the story to be acceptable, once the event has taken place.

This difference is what gives Dan's method its name – **it specifies the story based on a set of behaviours and outcomes** and thus turns the way we think about requirements slightly on its head: instead of thinking what we want the system to do, we focus on what the world looks like before and after a story has happened. **What would we need to test to make sure it has been implemented correctly?** This is invaluable to determine whether a story has been "done" and really clarifies everybody's understanding of the story.

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EXAMPLE

Say we are doing the stories for a company website that is used by both internal and external users. If our story is:

> *As a registered user I can change my username so that if my email changes I don't have to remember to log on with an old email*

We have some understanding of the story. We understand and have discussed that the email is going to be used as a username, for one. We can then start by identifying some possible scenarios. The only ones we can come up with are rather trivial:

Scenario 1: Valid new username
Scenario 2: Invalid new username

We do this at a very early stage when we chat through the story when adding it to the backlog. This is to ensure we focus on the behaviour. We need to do this as a team – business users, BA's, developers, as well as of course the testers, who spend their lives coming up with test scenarios. Identifying at least the main scenarios at an early stage:

- fuels conversations,
- leads to more in-depth analysis
- gives us a way to split stories
- provides good input to the sizing of stories

As we get closer to the iteration that we want to build the story, we need to explore the scenarios and expand them to include the fully expanded criteria. By the time we start the iteration we need to have filled in the blanks to avoid unexpected surprises. So, if we take our scenarios further they could look something like this:

Scenario 1: **Valid new username**

Given that a user is active
  And they have specified a new username that does not exist already
When they change their username
Then they will not be able to use the old username to log in anymore
  And they will receive a confirmation email

Scenario 2: **Invalid new username**

Given that a user is active
  And they have specified a new username that exists already
When they attempt to change their username
Then an error message is displayed
  And the username remains unchanged

Whilst embroidering on the first scenario one of the business users mentions the call centre involvement. When quizzed a little further, it turns out that internal users are not allowed to change their usernames themselves, but in case they move within the company and get a different email address they can request a change in username. The change would be evaluated and then activated by the call centre. So we have a new scenario:

Scenario 3: **Internal user**

Given that a user is active
And they are an internal user
And they have specified a new username that does not exist already
When they attempt to change their username
Then the call centre receives instruction to approve the new username
And the user receives an email to inform them that the change is pending

This would also cause a slight adjustment to our scenario 1:

Given that a user is active
And they have specified a new username that does not exist already
And they are an external user
When they change their username
Then they will not be able to use the old username to log in anymore
And they will receive a confirmation email

It should be very clear by now how much more information a story provides us with if we specify the criteria in as structured and as complete a way. (As long as it does not replace the face-to-face contact we value so highly!) In fact, if we do it in this manner not only do we have the business rules documented fully, the expanded scenarios can be used in agile testing tools like Cucumber and Selenium. And that saves a whole lot of documents – something which should warm the cockles of your Agile heart!

For more information on BDD, have a look at Dan's website: ***dannorth.net***

In particular have a look at the following two articles:
What's in a story *and* ***Introducing BDD***

There are also some good talks on YouTube and InfoQ on BDD.

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