# Usability Testing

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EPA, Clean Air Markets Division

Topics that we'll cover today:

- Congitive walkthrough
- Usability testing (UT)
- User acceptance testing (UAT)

# But first, the tl;dr

**Cognitive walkthrough** helps us quickly identify the design's usability for a new or infrequent user

**Usability testing** helps us test how the design address particular user needs

**User acceptance testing** helps us test clearly defined criteria to see whether a feature is complete

**Cognitive walkthrough** helps us quickly identify the design's usability for a new or infrequent user

**Usability testing** helps us test how the design address particular user needs

These help us get clear about what features will produce value

**User acceptance testing** helps us test clearly defined criteria to see whether a feature is complete

**Cognitive walkthrough** helps us quickly identify how easily a user can rely on a system to accomplish a particular task

**Usability testing** helps us test our assumptions about how to best address user needs

**User acceptance testing** helps us test clearly defined criteria to see whether a feature is complete

Once we have defined features, this helps us know whether we've executed on them

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# Cognitive Walkthrough

We perform cognitive walkthroughs to get quick and early feedback on whether a design solution is easy for a new or infrequent user to learn, and why it is or isn’t easy. This method is useful for catching big issues at any stage in the design process when you don’t have access to real users, but it is not a substitute for usability testing.

## How to do it

1. Identify specific traits for new or infrequent users of a design solution.
2. Develop a set of representative tasks that emphasize new use or infrequent use.
3. Designate a member of the design team to play the role of a user. That person will use the traits you've identified to participate in a moderated usability testing session. (The traits can overlap.)
4. Ask the user to accomplish their goal using a printed or interactive design. As they go, ask what they would attempt to do next or how they would learn.
5. Don't lead the user through the task, but encourage them to stay focused on what they're trying to accomplish.
6. Pay attention to expected outcomes and how quickly/easily participants are able to pick up a task.
7. Analyze the walkthrough results to highlight where the user struggled and what needs improvement.

# Usability testing

## How to do it

1. Pick what you'll test. Choose something, such as a sketch, prototype, or even a "competitor's product" that might help users accomplish their goals.
2. Plan the test. Schedule a research-planning meeting and invite anyone who has an interest in what you'd like to test (using your discretion, of course). Align the group on the scenarios the test will center around, which users should participate (and how you'll recruit them), and which members of your team will moderate and observe. Prepare a usability test script (example).
3. Recruit users and inform their consent. Provide a way for potential participants to sign up for the test. Pass along to participants an agreement explaining what participation will entail. Clarify any logistical expectations, such as screen sharing, and pass along links or files of whatever it is you're testing.
4. Run the tests. Moderators should verbally confirm with the participant that it's okay to record the test, ask participants to think outloud, and otherwise remain silent. Observers should contribute to a rolling issues log. Engage your team in a post-interview debrief after each test.
5. Discuss the results. Schedule a 90-minute collaborative synthesis meeting to discuss issues you observed, and any questions these tests raise concerning user needs. Conclude the meeting by determining how the team will use what it learned in service of future design decisions.

# User Acceptance Testing

We conduct user acceptance testing to test clearly defined criteria.

When we write user stories, we include acceptance criteria.

UAT helps us know whether a story's acceptance criteria is met and whether it can be moved to the done column.

# For example, during a sprint, your vendor might take on a story:

“As an agency compliance officer, I want the online submission form for emissions data to require the user to digitally sign an attestation (i.e., "Click to sign"), in a accordance with the Electronic Signature Act 15 U.S.C. 7001, Public Law 105-277 the Uniform Electronic Transaction Act.”

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# And the acceptance criteria for that story might be:

- "click to sign" button appears on screen
- After “click to sign” button is clicked, “are you sure” button appears on screen (to meet Electronic Signature Act requirement for signer’s consent to do business electronically)
- Form can only be submitted after “click to sign” and “are you sure” buttons are clicked
- E-signature is connected to submitted form
- User can easily download copy of the signed form

## How to do it

1. Identify what user story or particular functionality you will test.
2. Use the existing acceptance criteria to define your test. If you don’t have acceptance criteria set, come together as a team and align around what those acceptance criteria should be before conducting your test. Then use those criteria to develop your testing plan.
3. Run the tests. Observers should contribute to a rolling issues log if not all the criteria are being met.
4. If criteria are met, document test results, move story to done.

# Synthesis

**Whenever you conduct testing, afterward, come together as a team and synthesis the results. What are the patterns that surfaced? What do you believe these outcomes indicate? Align and pave your path forward together.**

# Discussion