Usability & User Experience

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INFO6255 – Software Quality Control & Management
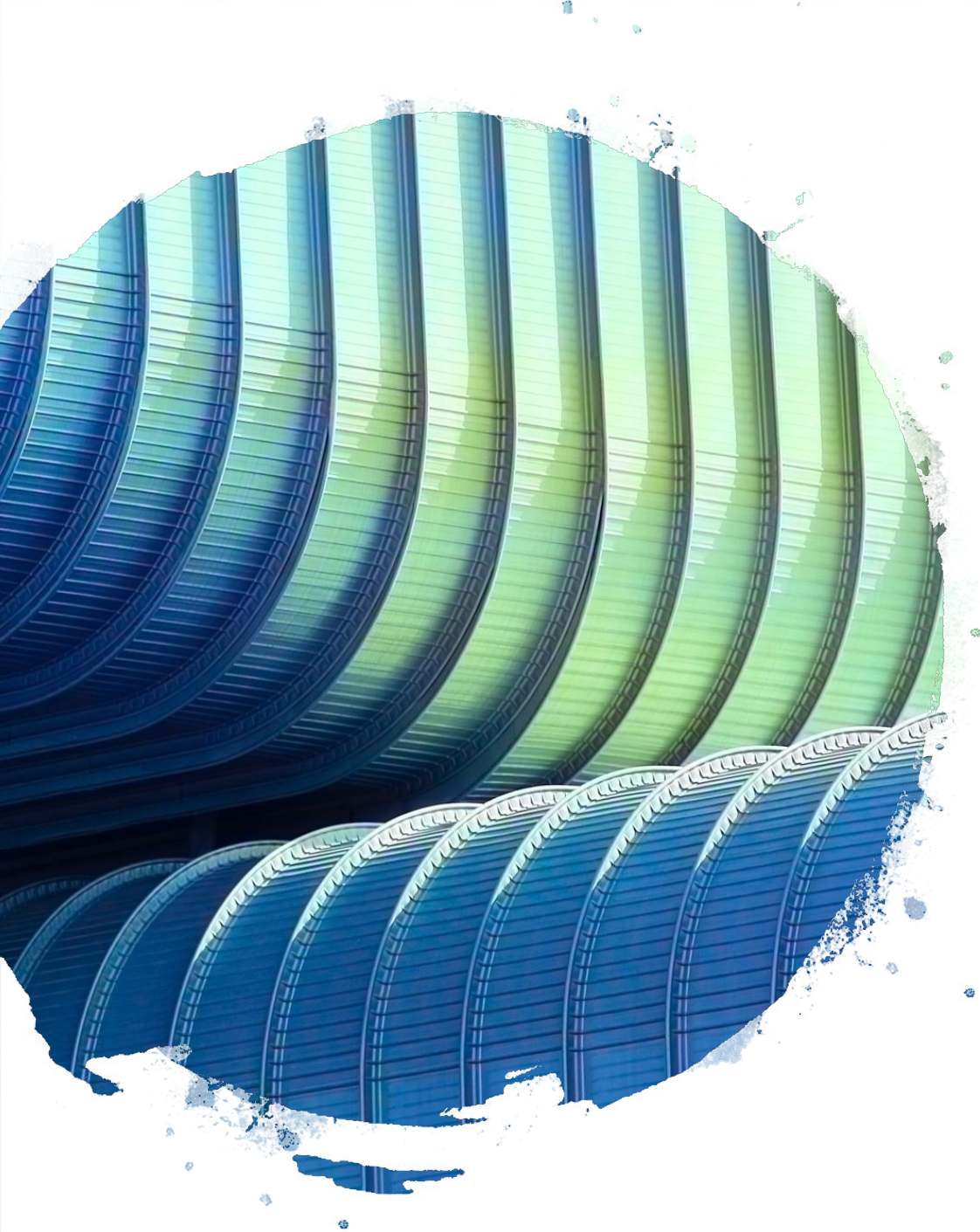
What is Usability?

- **Usability** is the ease of use and **learnability** of a human-made object such as a tool or device.

- In software engineering, **usability** is the degree to which a software can be used by specified consumers to achieve the following in a quantified context of use:
  - **Quantified objectives with effectiveness**
  - **Efficiency**
  - **Satisfaction**

Why Usability Testing is Needed?

Usability testing is greatly needed for evaluating a **website's functionality** and making sure people can **navigate** it efficiently.

A web site's <u>bad design</u> will not bring a lot of users to it. So, it is important to have the user **feel good** about it.

Why is Usability Important?

- People will leave a web site for the following reasons:
  - It is **difficult** to use.
  - The home page **does not specify clearly** what the company offers.
  - The users get **lost** in it.
  - No **clear direction** or agenda.
  - The web site **does not answer** the users' questions.
  - No **logical tier** structure.
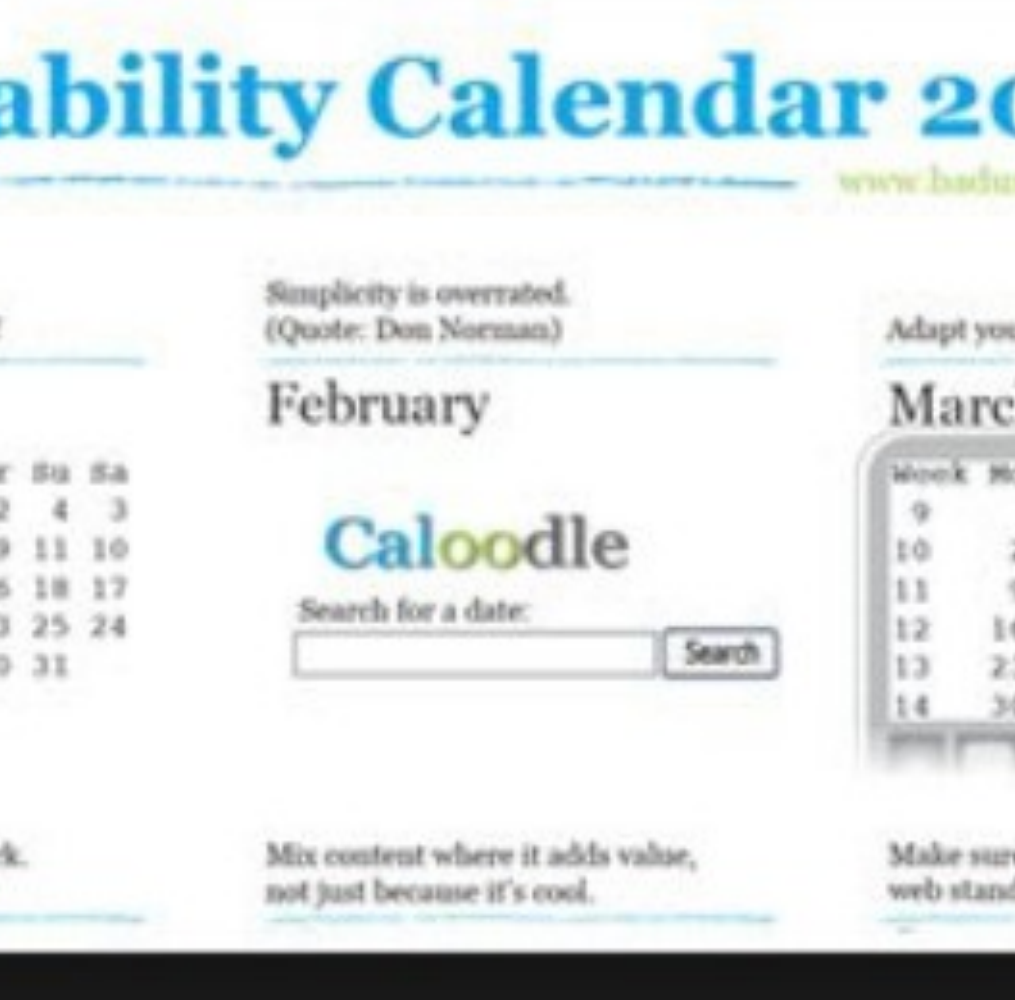
User Experience (UX)

User Experience = Look + Feel + Usability

What is User Experience (UX)?

User experience refers to a person's **emotions and attitudes** about using a <u>particular product</u>, system or service.

It includes the **practical, experiential, affective, meaningful and valuable aspects of** human–computer interaction and product ownership.

What is 'User Experience Testing'?

User experience testing is the process of collecting <u>qualitative and quantitative</u> data from the **user**, whilst the **user** is subject to all aspects of a service or product.

- What should **meaningful and valuable** user experience be:
  - **Useful**: The Web content should be **original and fulfill** a need.
  - **Usable:** The site must be **easy to use**.
  - **Desirable:** Image, identity, brand, and other design elements are used to **evoke emotion** and appreciation.
  - **Findable:** Content needs to be **navigable and locatable** onsite and offsite.
  - **Accessible**: Content needs to be **accessible to people** with disabilities.
  - **Credible:** Users must **trust and believe** what you tell them.

- https://www.usability.gov/what-and-why/user-experience.html

Evaluating a User Interface!

- The two main techniques for evaluating a User Interface are:

  1. Empirical **Evaluation**
     - The results are driven by **observation or experiment** (Not theory!)

  2. Heuristic **Evaluation**
     - The site is evaluated by **usability experts**. Sometimes called "Expert View" (200+ criteria)

https://careerfoundry.com/en/blog/ux-design/what-is-a-heuristic-evaluation-in-ux/

Usability Testing Methods

- **Moderated vs Unmoderated**
  - **A <u>moderated testing</u>** session is administered in person or remotely by a trained researcher who introduces the test to participants.

  - **An <u>unmoderated test</u>** is done without direct supervision; participants might be in a lab, or in their own homes using their own devices.

https://www.hotjar.com/usability-testing/methods

Usability Testing Methods

- **Remote vs In Person:**
  - **Remote Usability** tests are done remotely <u>for increasing the number of users.</u>

  - **In Person Usability** tests are done in presence of UX/Moderator. More expensive.
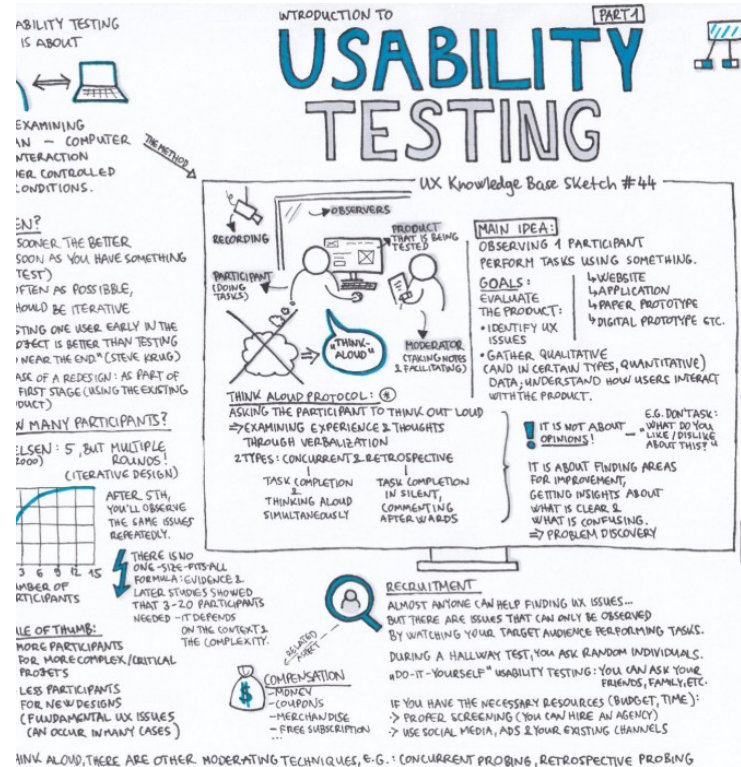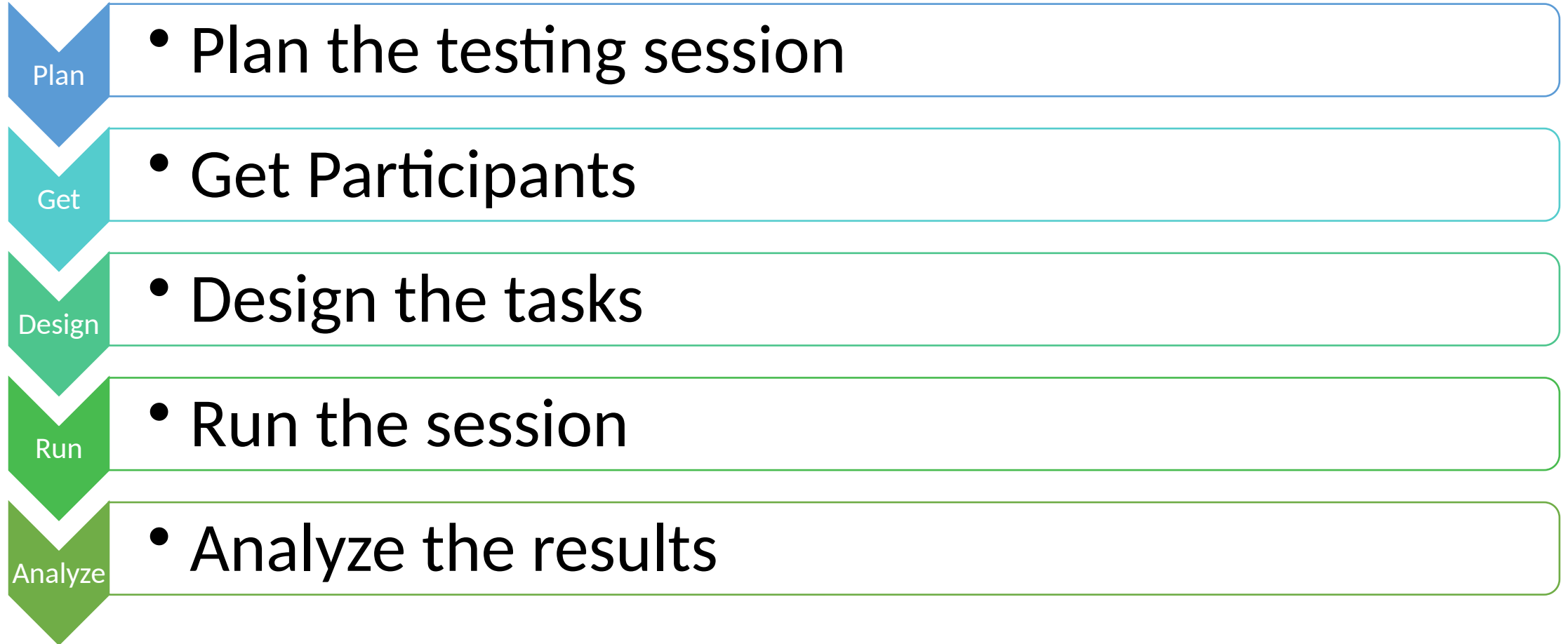
Usability Testing Methods

- **Explorative** – Open Ended, Brainstorming. Give opinions and <u>express emotional impressions</u> about ideas and concepts.
  - The info is gathered in the <u>early phase</u> of the prod development to pinpoint gaps in the market.

- **Assessment -** research is used to test **a user's satisfaction** with a product and how well they are able to use it.
  - It is used to evaluate the product's general functionality.

- **Comparative** – Asking users to choose which of two solutions they prefer.
  - Comparing web sites.

https://www.hotjar.com/usability-testing/methods

Usability Testing Methods

- **Guerrilla testing** - test subjects are <u>chosen at random</u> from a public places for a quick usability testing.
  - Quick way to <u>get large amount of data</u>

- **Moderated & Remote** - on the phone or using a computer via a trained moderator.
  - Economical way to collect information

- **Unmoderated & Remote -** relying on computer programs to get insight on how the users interact with a web site.
  - 'Session recording' to track the movement of the users and collect information.

- **Unmoderated & In Person -** are conducted in a controlled, physical setting but don't require a person.
  - No moderator influence!!

Moderated Usability Testing

Plan
- Plan the testing session

Get
- Get Participants

Design
- Design the tasks

Run
- Run the session

Analyze
- Analyze the results

Additional Usability Testing

- **A/B testing –** Experimenting with multiple versions of the web page.

- **Acceptance testing:** The last phase of the testing process.

- **Focus groups:** Researchers gather a small number of people together to discuss a specific topic to get their opinion.

- **Surveys:** A gauge of user experience. A method of gathering user feedback.

- **Heatmaps:** heatmaps and scroll maps produce a visual representation of how users move around the page.

https://www.hotjar.com/usability-testing/methods/

What is A/B Testing?
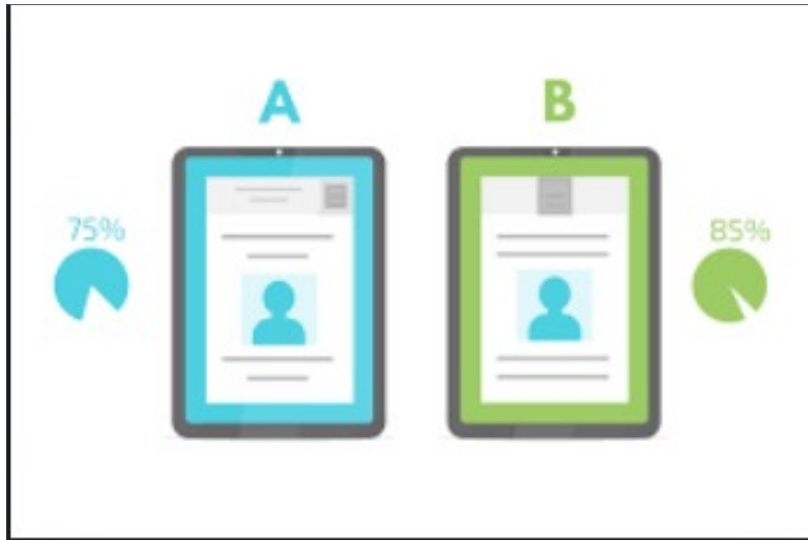
A/B testing (also known as **split testing** or **bucket testing**) is a method of <u>comparing two versions</u> of a webpage or app against each other to determine <u>which one</u> performs better.

A/B Testing Process

- **Collect Data:** In the <u>high traffic area</u> of the web site.

- **Identify Goals:** Goals can be anything such as <u>clicking links</u>.

- **Generate Hypothesis:** What is the <u>impact and the difficulty</u>.

- **Create Variations:** <u>Customize your choices</u> to the elements of the web site.

- **Run Experiment:** <u>Allow</u> the users to come into the <u>Web Site</u>.

- **Analyze Results:** Analyze the data <u>for the differences</u>.
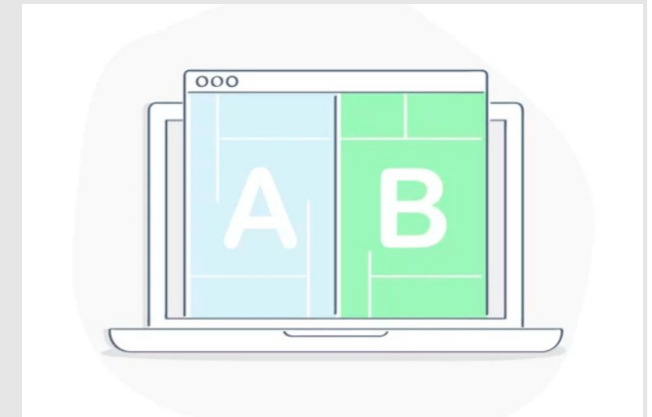
Best Tools For Evaluating User Experience

For <u>Research</u> to better understand what the user is clicking on and what catches their attention:

- UserTesting
- UsabilityTools
- ClickTale
- Usabilla
- Verify

For <u>Designing</u> an intuitive and flexible User Interface:

- InVision
- Balsamiq
- Pidoco
- MockFlow
- Proto.io
- A/B Testing
- Optimizely

https://www.dtelepathy.com/blog/business/14-best-tools-for-evaluating-user-experience

References

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