Norman's design principles

Visibility

- Users should know, just by looking at an interface, what their options are and how to access them.

- This is particularly important in mobile applications because it is a challenge to make everything visible within the limited screen space;

- it is essential to include only the options that are needed

- For example, a log-in screen only needs information about logging in or signing up, so cluttering it with other information would go against the **visibility principle**.

Feedback

- The user must receive **feedback** after every action they perform to let them know whether or not their action was successful

- For example, changing the icon on the tab to a spinner to indicate that a webpage is loading.

Affordance

- **Affordance** is the link between how things look and how they're used.
- For example, a coffee mug has high affordance because you instantly know how to hold it just by looking at it. The same is true for digital applications; the design should be intuitive enough that the users know how to access their desired information just by looking at the interface

Mapping

- **Mapping** is the idea that, in a good design, the controls for something will closely resemble their effect.

- Example:

- vertical scroll bar; it tells you where you currently are, and the page moves down at the same pace and sensitivity as the vertical bar

- A non-digital example is of a modern stovetop whose control knobs are arranged in the same order as the burners. This way, you will know exactly which knob operates which burner.

Constraints

- **Constraints** restrict a particular form of user interaction with an interface.

- This is essential because the user could become overwhelmed with the range of possibilities available through an interface

- An example of a constraint is an online form that does not allow users to enter letters into a phone number field.

Consistency

- People learn new things and manage better when they recognize patterns.
- **Consistency** is key for these patterns to be recognized and learned by users.
- If similar-looking things do not produce a similar output, the user is bound to become frustrated.
- Example:
- if a backward arrow denotes the back button, then it should not be changed to something else because that would be inconsistent with what the user has learned.

Homework

- What are human errors **(slips and mistakes)?**
- **Reference https://www.interaction-design.org/literature/book/the-glossary-of-human-computer-interaction/human-error-slips-and-mistakes**
- https://www.educative.io/edpresso/what-are-normans-design-principles

Human error (slips and mistakes)

- "The division occurs at the level of the intention: A Person establishes an intention to act. If the intention is not appropriate, this is a mistake. If the action is not what was intended, this is a slip."

- For example, a mistake would be to buy a Microsoft Excel licence because you want to store data that should be made accesible to web clients through SQL-queries, as Microsoft Excel is not designed for that purpose. In other words, you choose a wrong method for achieving your objective. However, if you installed a Postgresql Server for the same reason but in your haste forgot to give the programme privileges to go through your firewall, that would be a slip. You chose the right method of achieving your objective, but you made an error in carrying out the method.