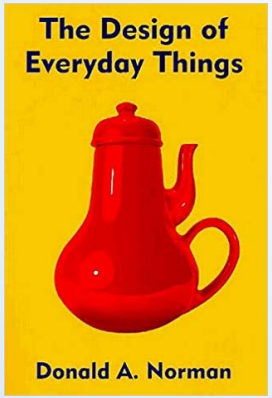
The Design of Everyday Things

Chapter 2: The Psychology of Everyday Things



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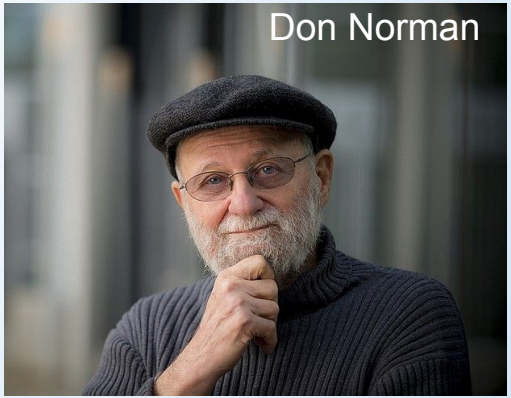


Outline

1. Chapter 1 quick review
2. Intro
3. Gulfs of execution and evaluation
4. 7 stages of action
5. 3 levels of processing
6. 7 stages & 3 levels
7. For designers
8. Discussion questions

Chapter 1 - Quick Review

- Discoverability and understanding are paramount
  - Human centered design
- 6 fundamentals of interaction:
  - Affordances, signifiers, mapping, feedback, conceptual model, constraints

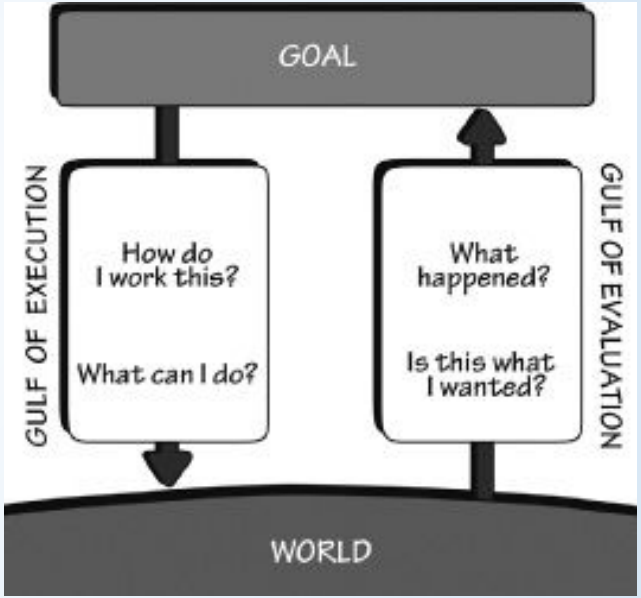
The Premise

“...things are designed to be used by people, and without a deep understanding of people, the designs are apt to be faulty, difficult to use, difficult to understand.”

- How do people select and evaluate their actions?

Gulfs of Execution and Evaluation

- Execution: goal → reality
  Evaluation: reality → goal
- Gulf of execution: how to go from a goal to a reality
- Gulf of evaluation: how reality reflects upon a goal
  - figuring out the state of something



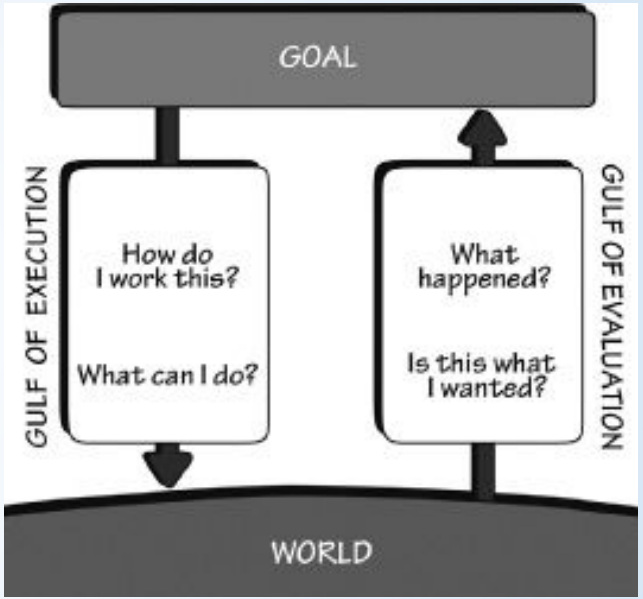
Gulfs

- Gulf: a portion of an ocean or sea partly enclosed by land



The Analogy

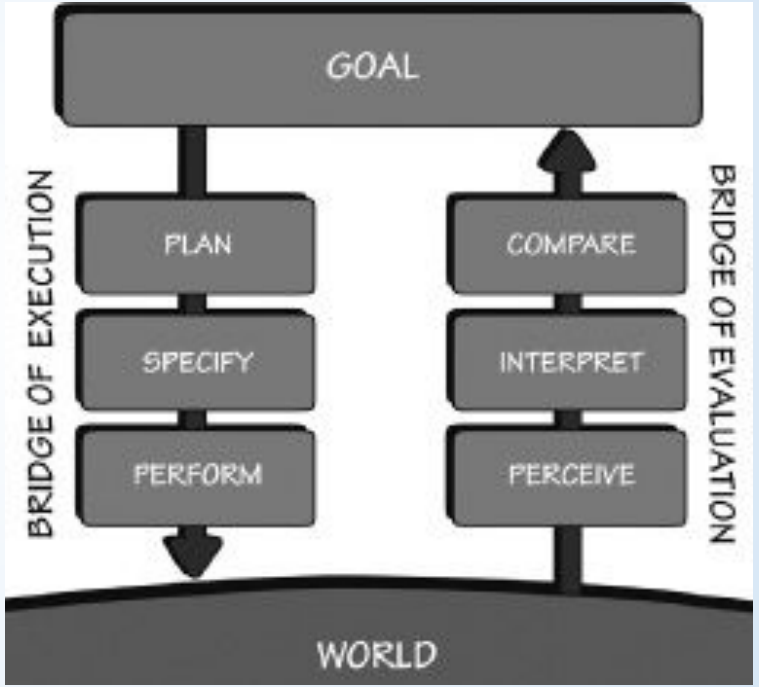




- Designers: make it so users go directly from A to Z, i.e., without passing through B through Y

How Users Bridge the Gulfs

- 7 stages of action:
  1. Form a goal
  2. Plan
  3. Specify actions
  4. Perform actions
  5. Perceive the state
  6. Interpret
  7. Compare
- Can also start at WORLD



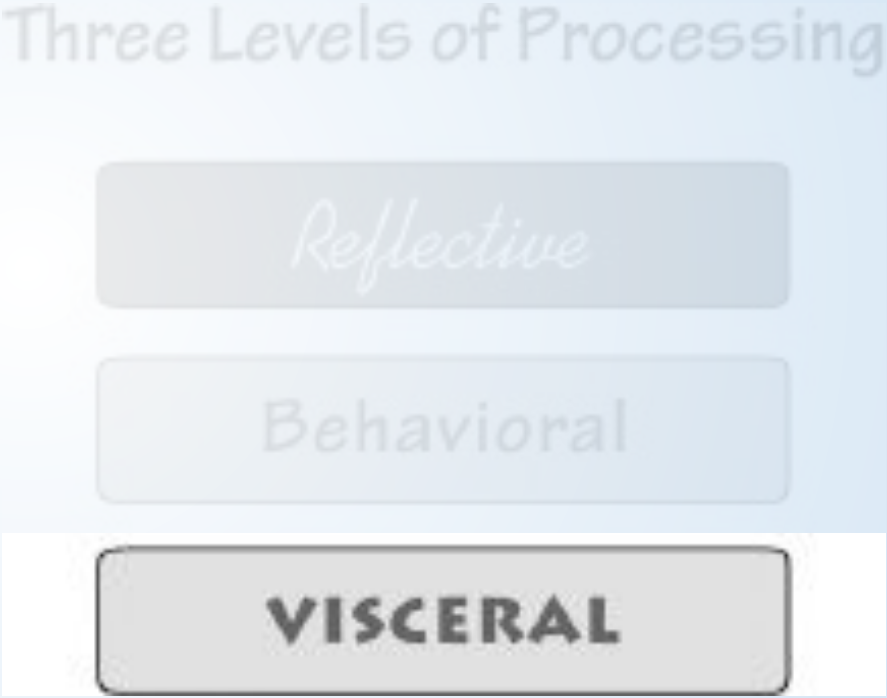
3 Levels of Processing

- How do people form goals?
- How do people perceive and interpret things?
- To what extent do people control these stages of action?



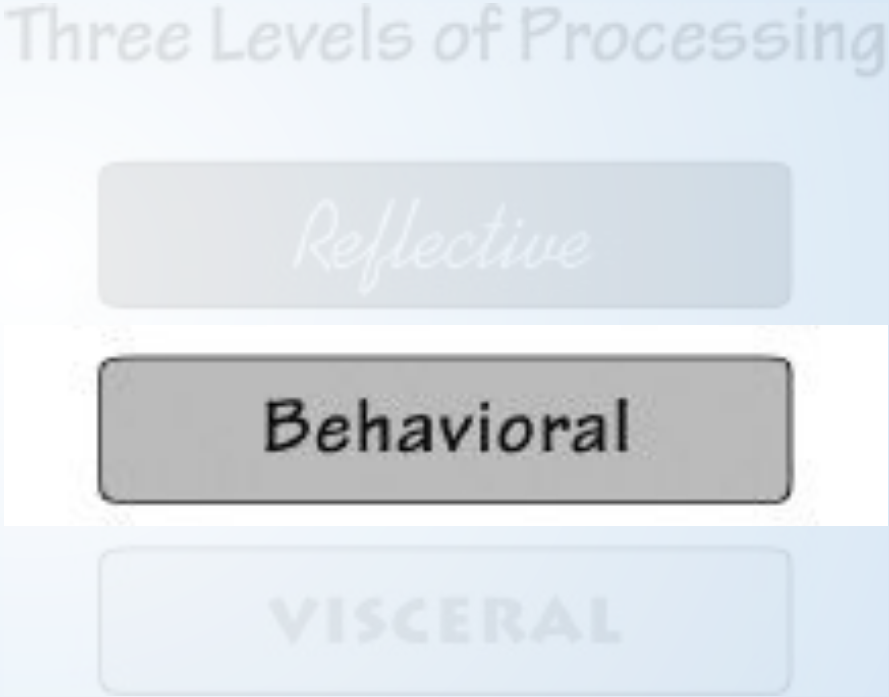
Level 1: Visceral Level

- Entirely subconscious
- Home to:
  - Basic emotions
  - Reflexes
  - First impressions
  - Fight/flight/relax
- Thus: deterministic, automatic, fast



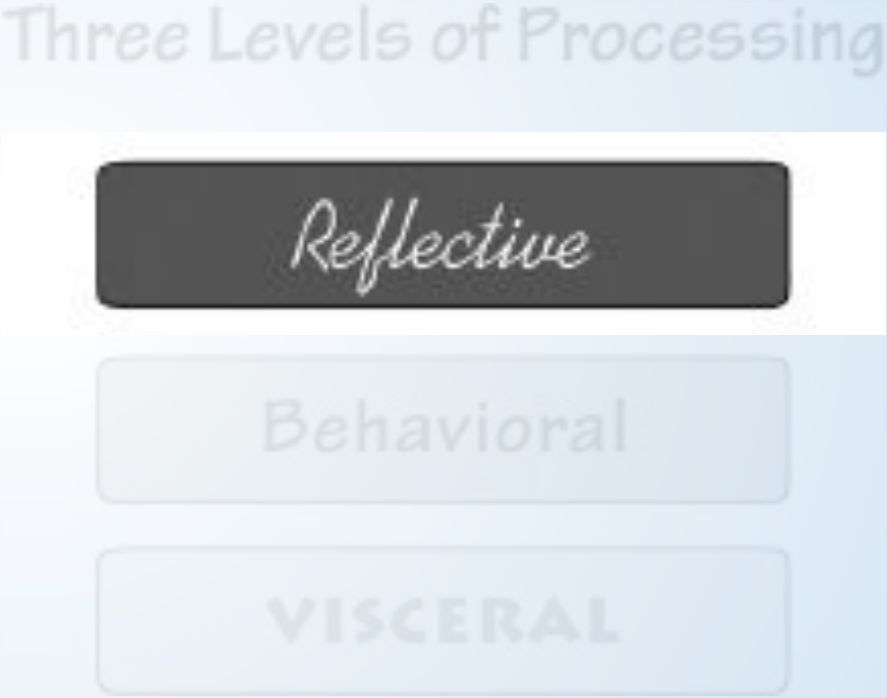
Level 2: Behavioral Level

- Mostly subconscious
- Home to:
  - Learned skills
  - Expectation formation
- Need only think of a learned action and this level takes care of it
- Expectations must be met, else frustration



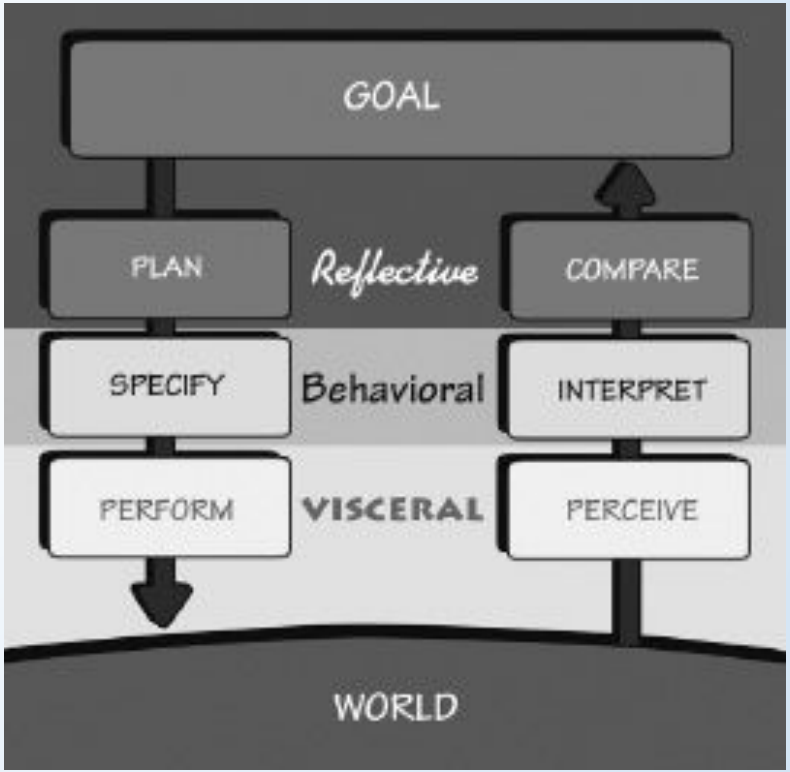
Level 3: Reflective Level

- Entirely conscious
- Home to:
  - Reason
  - Causal assignment
- Supposed tendency to blame self if can’t use a device (opposite of everyday actions)



The 7 Stages and 3 Levels Together

- Give rise to emotions:
  - Anxiety or calmness in visceral stages
  - Hope or fear drives behavioral level on execution side; relief or despair on the evaluation side
  - Cause & effect (blame) in reflective stages



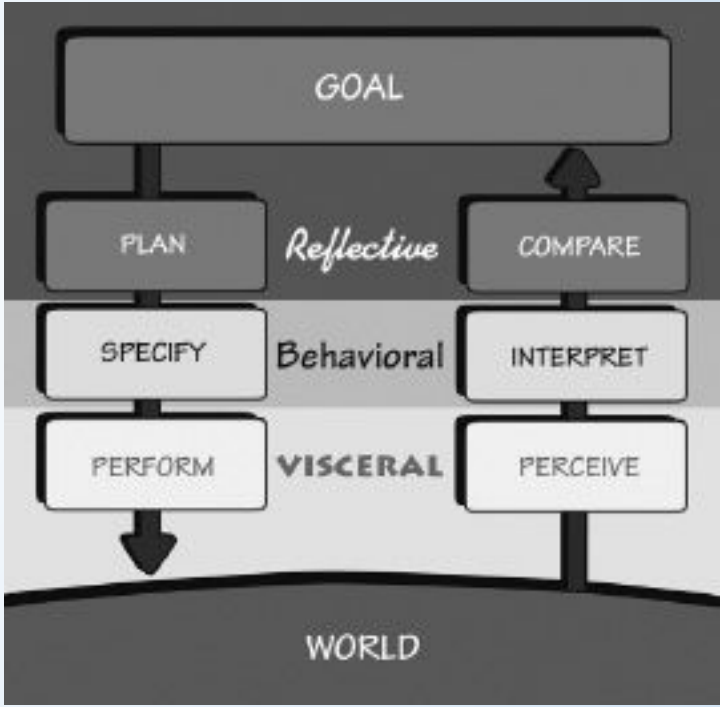
How Designers Can Bridge the Gulf

- Bridge gulf of execution by:
  - Signifiers, constraints, mapping, conceptual model
- Bridge gulf of evaluation by:
  - Feedback, conceptual model
- Help users answer these → questions
  - 7 questions; 7 stages



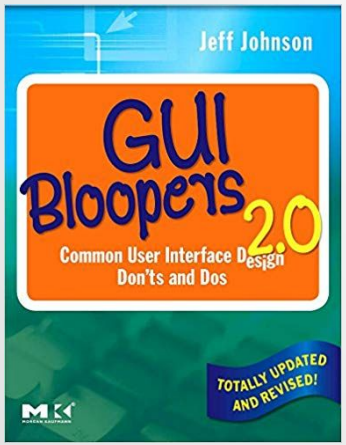
Discussion Questions

- How useful is this model?
- Do you agree with the layer-stage matchings?
- Does Norman's model sufficiently incorporate emotions?
- If you are unable to use a device, do you (generally) blame yourself?



GUI Bloopers

Chapter 2: GUI Control Bloopers



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Outline

1. Chapter 1 quick review
2. Intro
3. Using the wrong control
4. Using controls wrongly
5. Discussion questions

Chapter 1 - A Quick Review

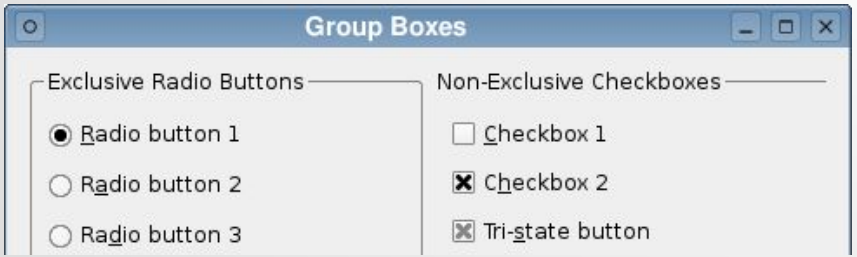
- First 9 principles:
  1. Focus on users' tasks
  2. Functionality first; presentation later
  3. Conform to users' views
  4. Design for the common case
  5. Don't complicate tasks
  6. Facilitate learning
  7. Deliver meaningful information, not just data
  8. Design for responsiveness (speed and feedback)
  9. Incorporate user feedback

Chapter 2 Introduction

- “Control bloopers” refers to the incorrect usage of control elements (buttons, checkboxes, lists, etc.)
- 2 types:
  - Using the wrong control
  - Using a control wrongly

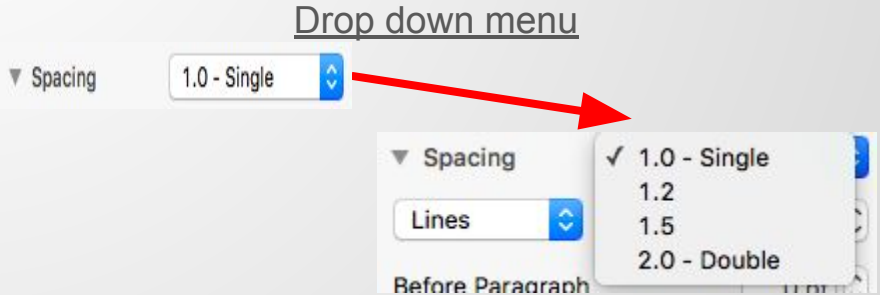
Controls: Radio Buttons & Checkboxes

- Radio buttons are for selecting 1 of N options
  - If N>8 or space limit: drop down menu or scrolling list
- Checkboxes are for M of N options (M ≤ N)
  - Don’t turn-off an option when a box is checked
- Have clear on/off, true/false, do/don’t when select



https://upload.wikimedia.org/wikipedia/commons/4/41/Groupbox-example.png

Drop down menu



Controls: Command Buttons

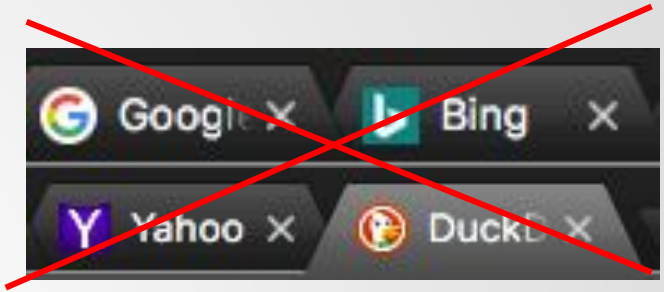
- For event triggering
  - Printing, exporting, accepting, canceling

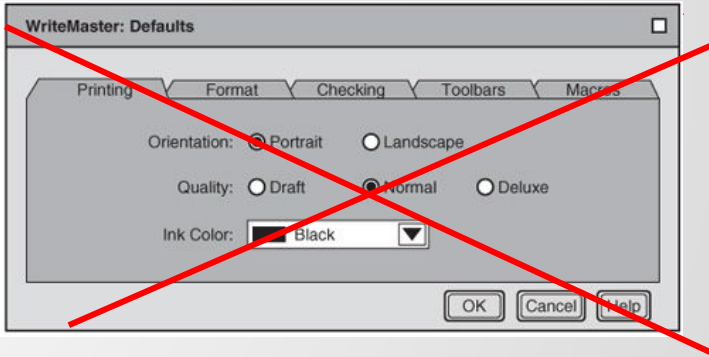


- Not for toggling states
  - Unknown whether label indicates current state or state once toggled

Controls: Tabs

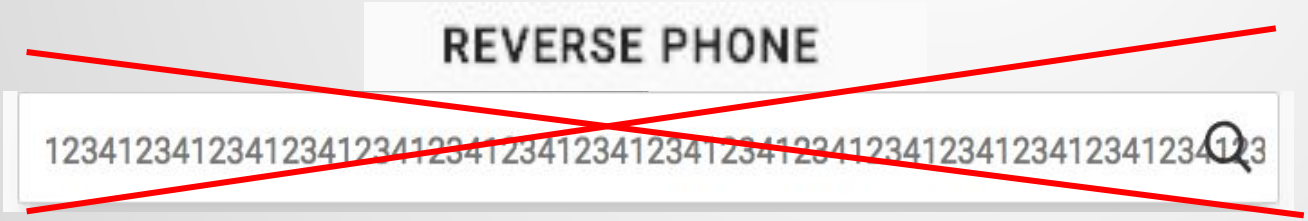
- For navigation
- Not for selecting of 1 of N options
  - That’s for radio buttons
- Don’t stack rows of tabs
- Row of tabs should not extend far beyond the info below it
- Don’t abbreviate tab names



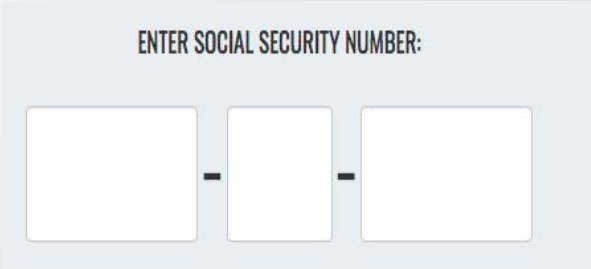


Controls: Text Boxes

- For entering unstructured text
- Don’t use unstructured boxes for entering structured data
  - Phone numbers, dates, social security numbers, etc.
  - Elsewise, have to allow for variation and do checks



https://www.whitepages.com/reverse-phone



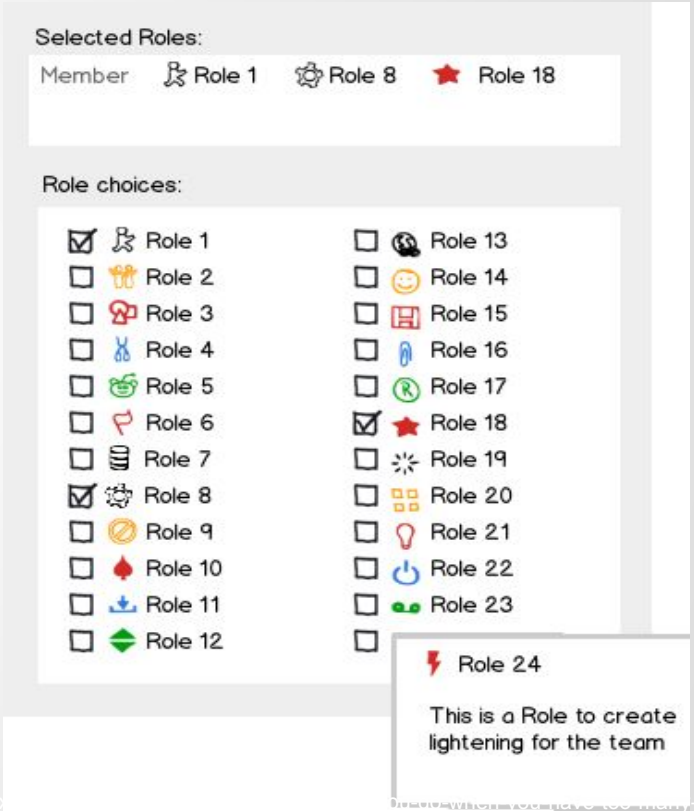
https://www.ssnvalidator.com/

Default Control Values

- Pick good defaults unless there is a good reason not to (legal reasons, potential to cause bias in a statistical survey, no good default, etc.)

Control Bloopers Discussion Questions

- Do you 100% agree with everything just presented, i.e., there are no exceptions?
- One of the things not really mentioned was: what should you do if there are too many checkboxes? So, what should you do?



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