Heuristic Evaluations

Systems Usability Scales

What are these all about?

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Heuristic Evaluations

Nielsen, Jakob (1994). *Usability Engineering*. San Diego: Academic Press.

A heuristic…

– any approach to problem solving, learning, or discovery that employs a **practical** method (not an optimal or perfect method) that is "sufficient or good enough."

– **simple rules** that explain how people make judgements or solve problems **when the problem is complex** or lacks complete information.

– e.g., rules-of-thumb (e.g., *People should figure out how to turn the product off.*)

– e.g., Nielsen's heuristics as used for usability studies.
→ F o c u s   o f   t h i s   c l a s s

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Heuristic Evaluations

Heuristic Evaluations **identify problems participants have using** your prototype(s).

Participants perform a task with your prototype and you:

- capture the number and kinds of errors they make

- record the time it takes users to perform the task

- can compare errors and time of participants **working with** your prototype to **not working with** your prototype (the "control")

- can compare errors and time of participants **working with alternative** prototypes.

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Heuristic Evaluations

Two kinds of Heuristic Evaluations:

- Field Studies ('in the wild') involve the deployment of prototypes in natural settings (e.g. in participants' homes, workplaces, or outside) to discover how people interact with technology in the real world.

- Usability Studies ("US"):
  - take place in a controlled lab
  - focus on performance measures, e.g. how many errors are made when completing predefined tasks; what kinds of errors are made

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Heuristic Evaluation
vs.
"Science Research"

"Scientific Method"	Heuristic Evaluation
Discover knowledge	• Improves the design
Many participants	• Few participants
Results validated statistically	• Results inform the design
Must be replicable	• May not be fully replicable
Strongly controlled conditions	• Conditions controlled as possible

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Heuristic Evaluations

The main goal:

- to identify problems associated with the design and its use.

- (in other words,) to judge the compliance of the design with recognized usability principles (the "heuristics")..

- These heuristics, for a Usability Study, are (most typically) Jakob Nielsen's heuristics for usability (1994). →

Nielsen's 10 heuristics for usability

Nielsen, Jakob (1994). *Usability Engineering*. San Diego: Academic Press.

1. Visibility of system status → system communicates its current state

2. Match between system and the world → system is natural/familiar

3. User control and freedom → user can turn-off, un-do, re-do

4. Consistency and standards → functionality is consistent

5. Error prevention → users discover how to minimize errors

6. Recognition rather than recall → minimize user's memory load

7. Flexibility and efficiency of use → usable by both experts & novices

8. Aesthetic and minimal design → (now contested!)

9. Help users recognize, diagnose, and recover from errors

10. Help and documentation → provided and helpful

System Usability Scale (SUS)

AGE_____   GENDER _____

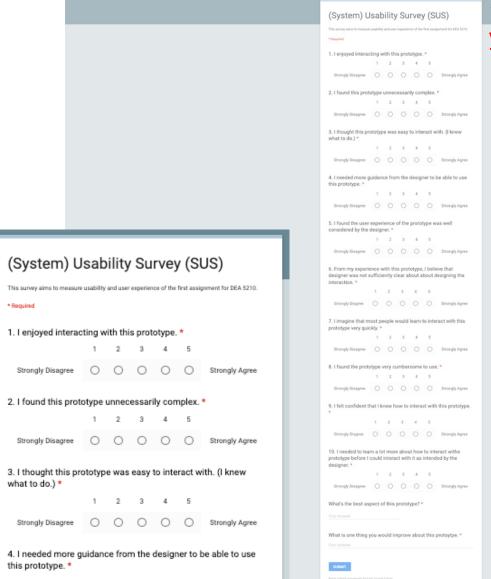Participant ID: _____   Site: _____   Date: ___/___/___

System Usability Scale

Instructions: For each of the following statements, mark <u>one</u> box that best describes your reactions to the website *today*.

		Strongly Disagree				Strongly Agree
1.	I think that I would like to use this prototype frequently.	☐	☐	☐	☐	☐
2.	I found this prototype unnecessarily complex.	☐	☐	☐	☐	☐
3.	I thought this prototype was easy to use.	☐	☐	☐	☐	☐
4.	I think that I would need assistance to be able to use this prototype	☐	☐	☐	☐	☐
5.	I found the various functions in this prototype were well integrated.	☐	☐	☐	☐	☐
6.	I thought there was too much inconsistency in this prototype	☐	☐	☐	☐	☐
7.	I would imagine that most people would learn to use this prototype very quickly.	☐	☐	☐	☐	☐
8.	I found this prototype very cumbersome/awkward to use.	☐	☐	☐	☐	☐
9.	I felt very confident using this prototype	☐	☐	☐	☐	☐
10.	I needed to learn a lot of things before I could get going with this prototype	☐	☐	☐	☐	☐

System Usability Scale (SUS)

← my version that you will use

System Usability Scale (SUS)

- to identify problems associated with the design and its use.

- Created by John Brooke in 1986 for DEC (the Digital Equipment Corporation) to test …

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System Usability Scale (SUS)

- found to be 91% reliable.

- has become an industry standard.

System Usability Scale (SUS)

		0 Strongly Disagree	1	2	3	4 Strongly Agree
		1	2	3	4	5
Odd +	1. I think that I would like to use this prototype frequently.	☐	☐	☐	☐	☐
Even -	2. I found this prototype unnecessarily complex.	☐	☐	☐	☐	☐
Odd +	3. I thought this prototype was easy to use.	☐	☐	☐	☐	☐
Even -	4. I think that I would need assistance to be able to use this prototype	☐	☐	☐	☐	☐

Most guides to scoring say to use a scale 1-5 and then subtract 1, or from 5; but it's less complicated to just use 0-4

SCORING:

- For each even numbered question: count score as-is (e.g., 3 is a 3).

- For each odd numbered question: subtract score from 4 (e.g., 4-1=3)

- Add up scores for all 10 questions x 2.5 to get an SUS score on a 100-point scale.

System Usability Scale (SUS)

- SIGNIFICANCE OF SCORES

  – 68 or more is considered good

  – 80.3 means someone is "likely to recommend your product to a friend"

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