Today's Agenda

- Evaluation methods
  - Task analysis
  - Personas & Cognitive Walkthrough
  - Card Sorting

Quiz #4

- Starts from 2:15pm,
- Due at 2:30pm
- Open book and open notes

Example: Replace Printer Cartridge

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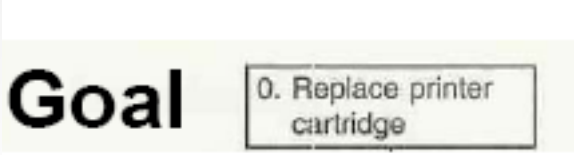
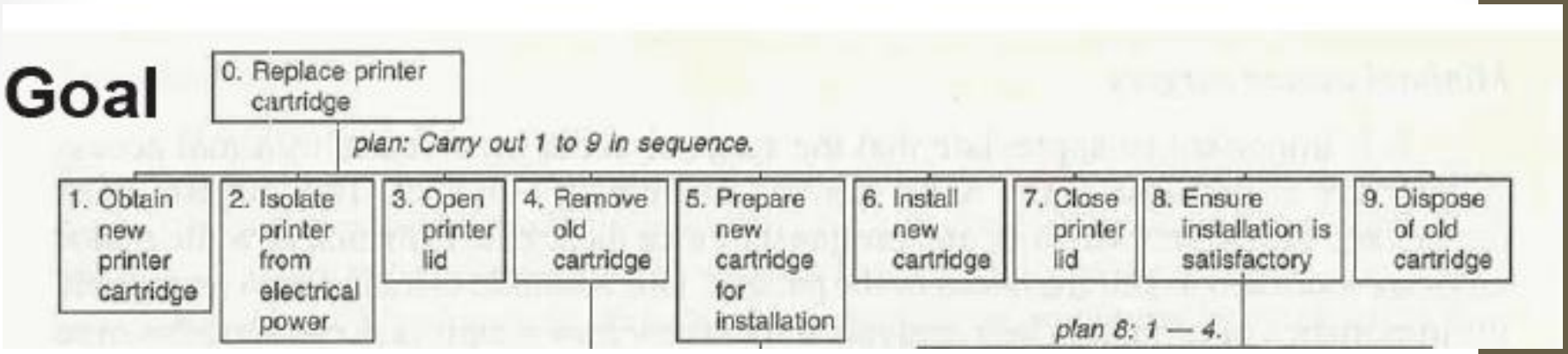


Example: Replace Printer Cartridge



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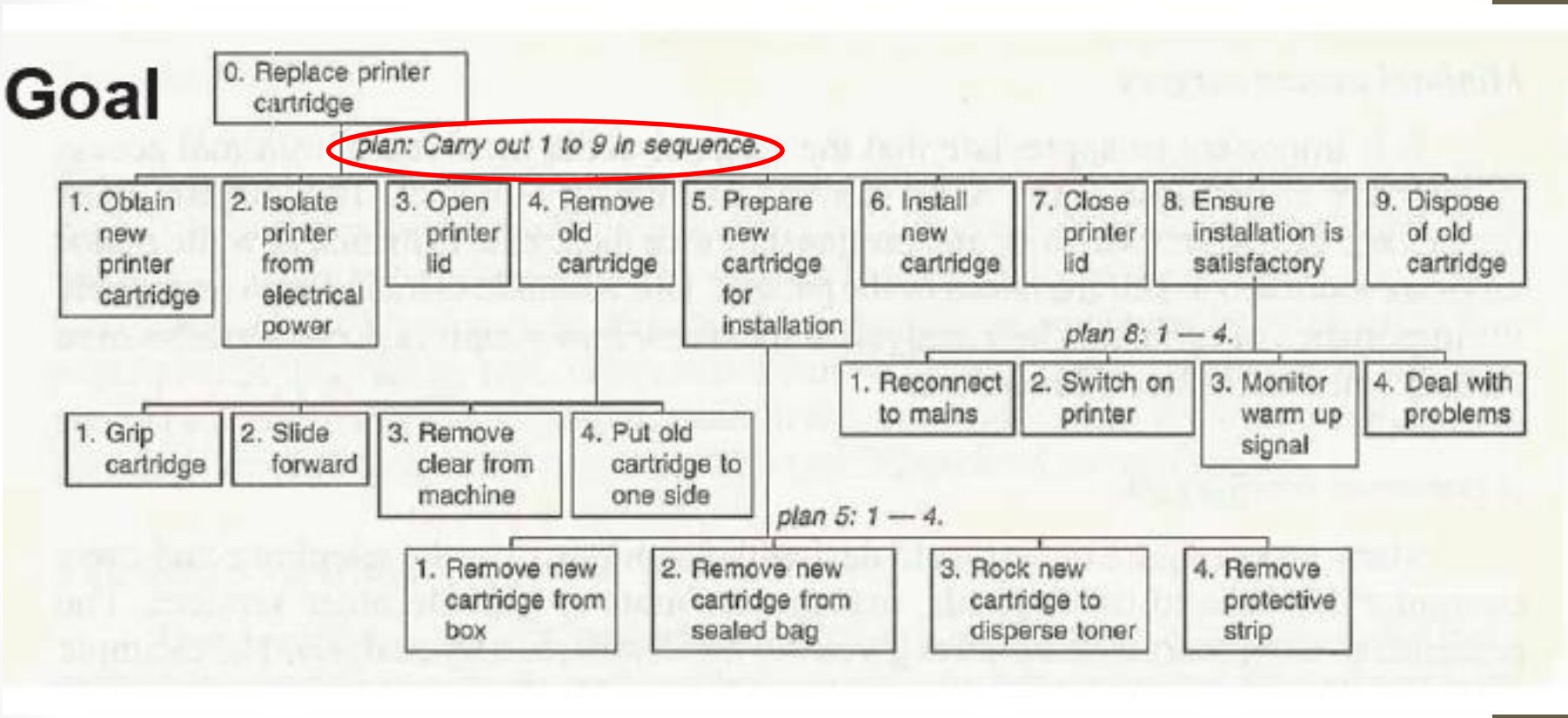
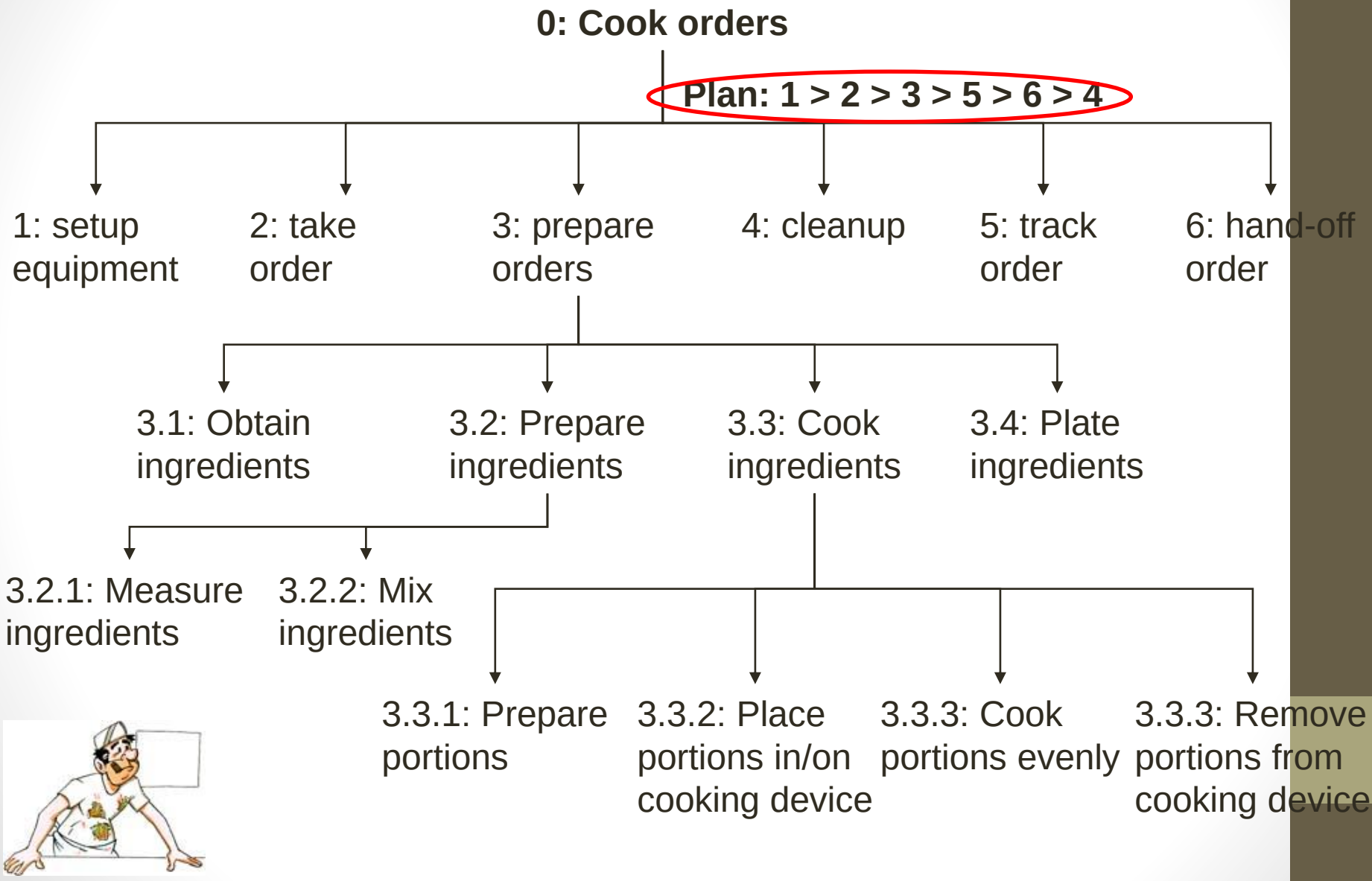


Hierarchical Task Analysis (HTA)



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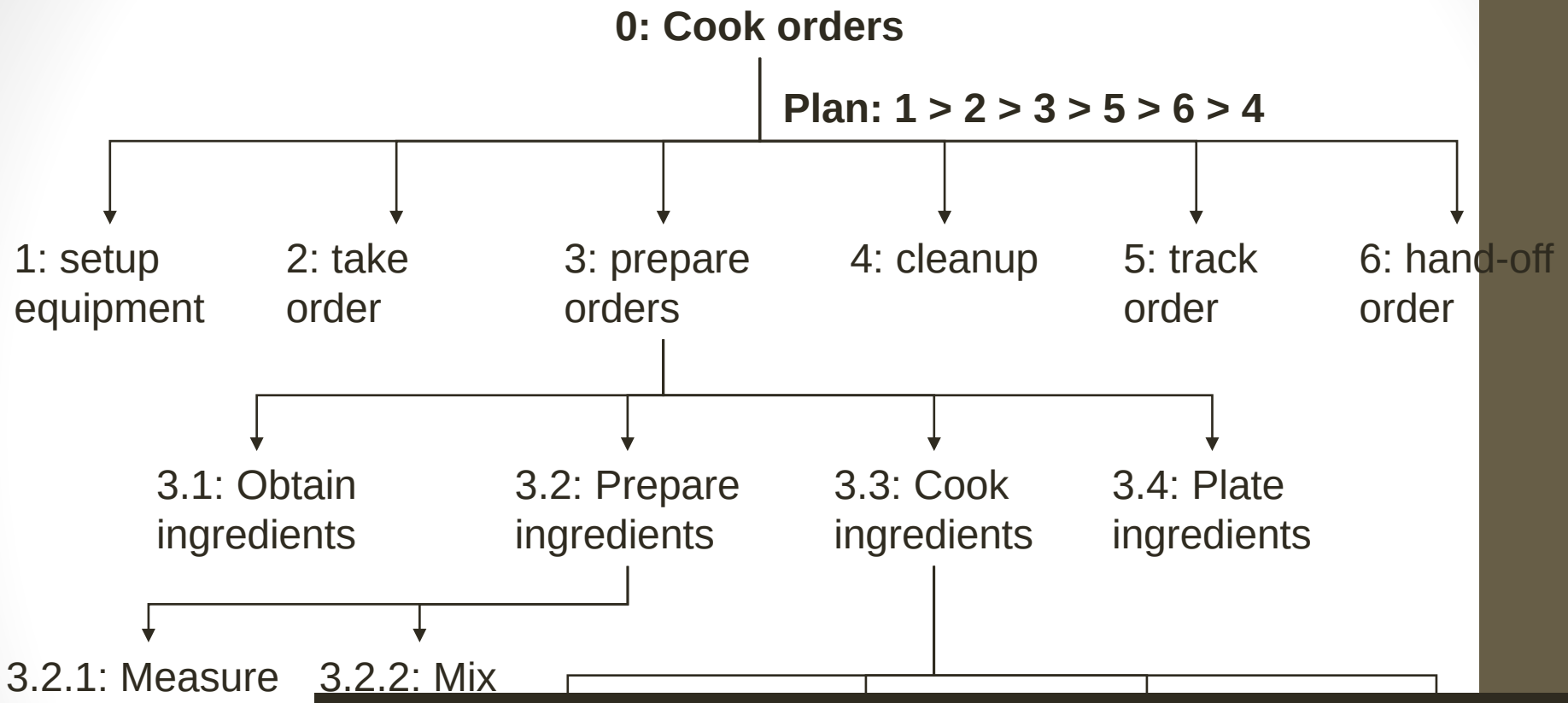


RULES

1. **Top to bottom hierarchically organized**
2. **Top level goal and sub-goals are numbered (2, 2.1, 2.2, etc)**
3. **Plan that specifies order**

In Summary

Functional analysis and **task analysis** are organized way to think about functions

I encourage you to conduct

- A functional flow diagram,
- A decision-action diagram, and/or
- A hierarchical task analysis

as you prototype.

Reading Assignment

- ID Chapters 6, 7 and 10
- UYU Chapters 7, 9, 10

Recall: What is Evaluation?

Evaluation, in general…

- Gather data about the usability of a design for a particular activity by a specified group of users

- Goals
  - Assess extent of system's functionality
  - Assess effect of interface on user
  - Identify specific problems with system

Evaluation Methods

Pre- & Post-prototype

- ✓Surveys: questionnaires
- ✓Surveys: interviews
- ✓Surveys: focus groups
- ✓Functional allocation & analysis
- ✓Task Analysis

Post-prototype

- ❑**Personas**
- ❑**Cognitive walkthrough**
- ❑**Card Sorting**
- Heuristic evaluation
- Field/ ethnographic
- User testing

Personas & Cognitive Walkthrough

Cognitive Walkthrough

- Who are the evaluators?
  - The HCI evaluators (more than one is better)
- Assess usability through simulation of way users explore with interactive system
  - “Thought Experiment”
- Try to predict what user will do
- Great for the early stages of development

What do You Need for a Cognitive Walkthrough?

1. An indication of who the users are (personas)
2. Fairly detailed prototype of the system.
3. A complete, written list of the actions needed to complete tasks with the given prototype

Sasha

ASTUTE, CONFIDENT, SAVVY, KNOWLEDGEABLE

SMART SHOPPER

GOAL Shopping smart to get more for her money

> I don't have stacks of money so I need to make the most of what I have.

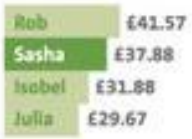
FRUSTRATION Struggling to believe she's found the best price

> I often spend too long looking for the best price on something. I'm never satisfied that I've got the cheapest price.

SATISFACTION Getting one up on retailers

> I enjoy saving so much it's starting to feel like a game. I love beating the system.

PERCENTAGE OF CUSTOMER BASE



WEEKLY ONLINE SPEND

ANNUAL HOUSEHOLD INCOME

Sasha is 34, married and has a two year old child. She currently works as a part-time office manager and lives in the suburbs of Bristol.

HER FAVOURITE BRANDS

Isobel

MATERIALISTIC, GENEROUS, SPONTANEOUS, IMPULSIVE

IMPULSE SHOPPER

GOAL Getting a good deal on everything

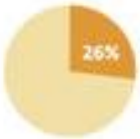
> I really like shopping and bargain hunting. I'm guilty of buying things I don't need because they're cheap.

FRUSTRATION Deal blindness

> I like shopping in-store to find a bargain. I often get lost working out the best deals online.

SATISFACTION The thrill of a bargain

> I love shopping, even if it's not for me. I've got two cupboards full of gifts to give.



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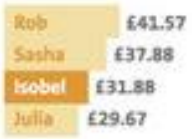


WEEKLY ONLINE SPEND

ANNUAL HOUSEHOLD INCOME

Isobel is 30 and lives with her partner and 5 month old child in the suburbs of Newcastle. She works as a shop assistant.

HER FAVOURITE BRANDS

Cognitive Walkthrough:

Julia

RESERVED, CAUTIOUS, PLANNED, WARY

CAREFULLY CONSIDERED SHOPPER

GOAL Being careful with the monthly budget

> It's my responsibility to make sure everyone in my family has what they need and our money stretches.

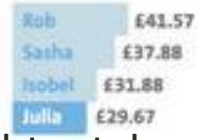
FRUSTRATION A lack of trust in voucher and deal sites

> I don't really trust deal sites. I worry that the quality of what I buy will be compromised.

SATISFACTION Having money left over at the end of the month

> When I have money left over from the monthly budget I love putting some away for savings and gifts.

PERCENTAGE OF CUSTOMER BASE



WEEKLY ONLINE SPEND

ANNUAL HOUSEHOLD INCOME

Julia is 47. She's married with three children and lives in the suburbs of Leamington Spar, where she works as a nurse at the local maternity hospital

Rob

TIME-POOR, SAFE, IMPATIENT, HABITUAL

COMFORTABLE CLASSIC SHOPPER

GOAL Shopping quickly at trusted brands

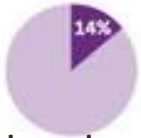
> Saving money is too much hassle. I don't have time to hunt around for deals.

FRUSTRATION Too many irrelevant offers

> I don't browse. I find what I want and buy it. No point worrying about a few quid here and there.

SATISFACTION Shopping and saving quickly - on a needs-must basis

> I bought shoes online and 10% was taken off automatically. No hunting for the discount.



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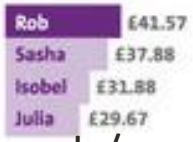


WEEKLY ONLINE SPEND

ANNUAL HOUSEHOLD INCOME

Rob is 44. He's married with two young children and lives in a large village on the outskirts of Basingstoke. He works as a primary school deputy head teacher

https://www.lightpetal.com/vouchercodes-persona-decals-and-cards/

Cog Walkthrough: Example of Persona

- ***Name*:** **Henry Wester**
- *Age*: 67
- *Location:* Indiana
- *Education*: High School
- *Job*: Family farm owner and operator
- *Crop*: Corn
- *Gross annual sales*: <$100,000
- *Equipment budget:* $120,000
- *Acreage*: 110 acres
- *Family:* Widowed, 4 adult children, 9 grandchildren
- *Tasks*: Planting corn, maintaining the fields (irrigation, fertilization), harvesting, transporting, and storing corn

Like his father before him, Henry owns and operates his corn farm. It is small acreage (compared to his competitors, and low gross annual sales. Henry is proud of his work, and is a long-time Deere customer. Henry's youngest son will take over the farm when Henry decides to retire or can no longer work. When purchasing John Deere equipment, Henry is concerned about affordability, warranty, and durability. Henry believes the simpler the machine, the more reliable it is. Henry has been saving to purchase a sprayer. He would like to trade in an old 4600 series for a new 4600 or 4700 series. However, he is not sure how much his old 4600 is worth.

Cog Walkthrough: Process

- Okay…. Now that you have personas created…
- Assign persona to evaluators
- Step through action or task sequence
  - Action 1
  - Response
  - Action 2
  - Response
  - …
- For each one, ask FOUR QUESTIONS and try to construct a usability assessment

Cognitive Walkthrough – What do You Ask?

1. **Does the user understand what subtasks are needed to reach the user's goal?**
   - E.g, does the user know how to change the display?
2. **Will the user notice that the correct action is available?**
   - E.g. is the button visible?
3. **Once found, will they know it is the right action for the desired effect?**
   - E.g. the right button is visible but the user does not understand the text and will therefore not click on it.
4. **Does the user get feedback?**
   - Will the user know that they have done the right thing after performing the action?

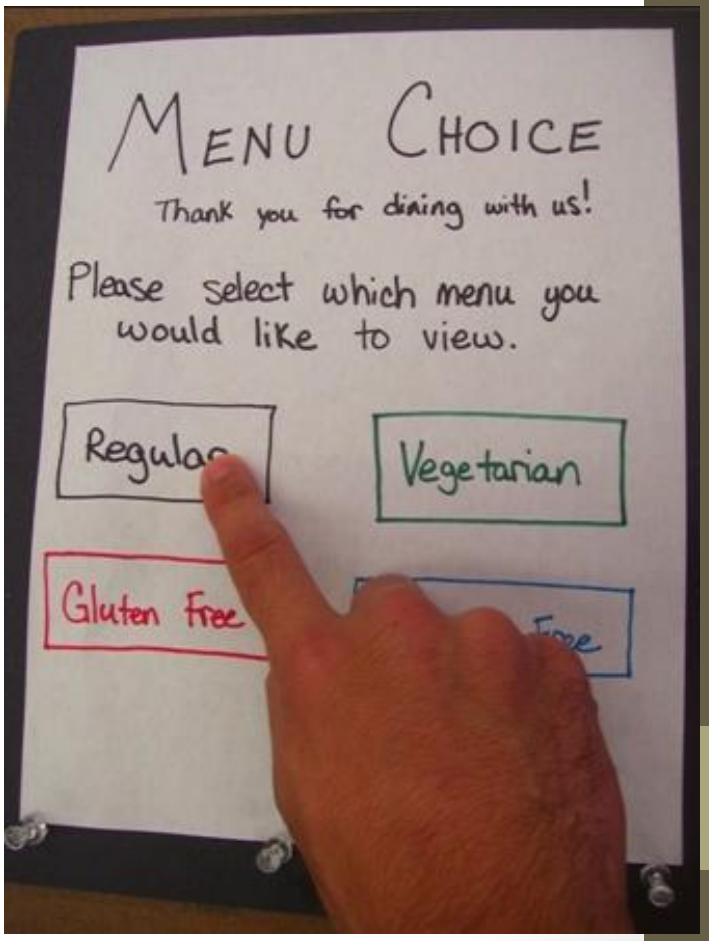
Example

- https://www.youtube.com/watch?v=bzvQY68lm8c

- What persona was this usability expert probably provided with?
- See if you can follow him addressing those four questions?
  - He will “thinking aloud” answers to those questions (does the user understand, notice, take right action, and get feedback?)

Why (or Why Not) Use Cognitive Walkthroughs

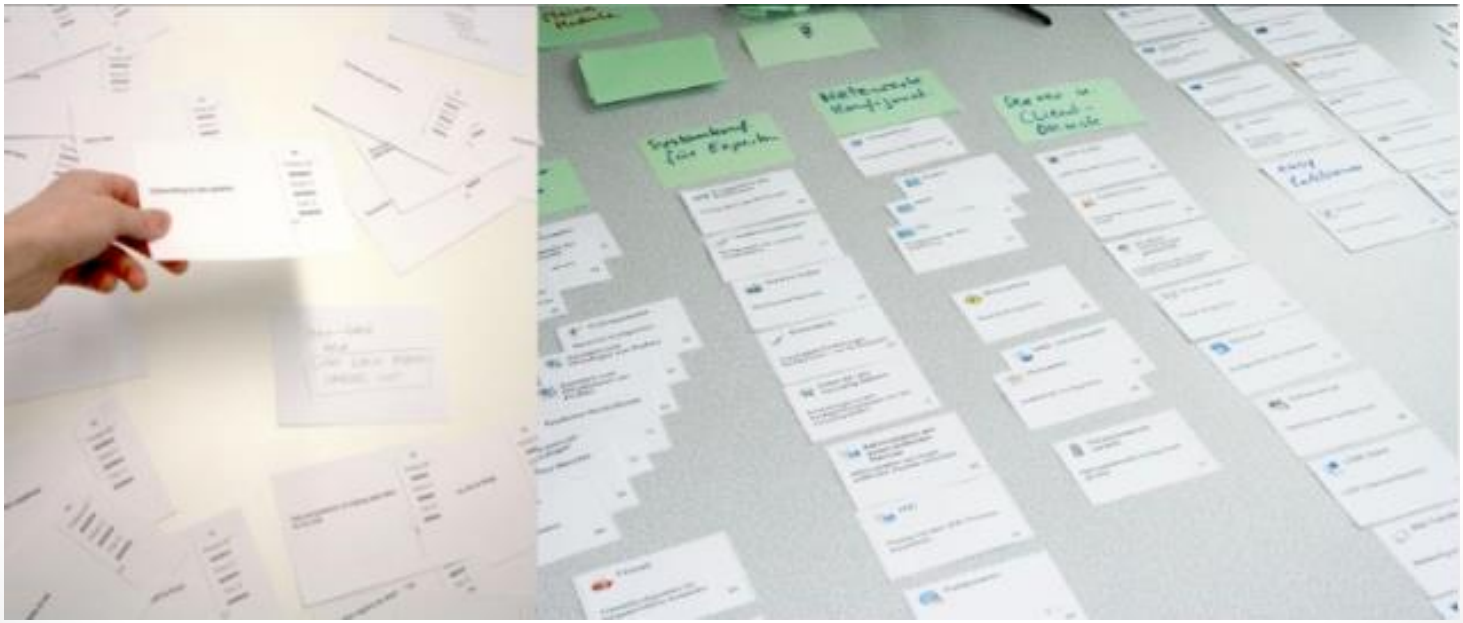
- Strengths?
  - No need for untrained users
  - Fast results
- Weaknesses?
  - Need a group of experts – practice makes perfect
  - Need to make assumptions about what user will do



Sorting Things Out: Card Sorting Methodology

What is Card Sorting?

- Card sorting is a user-centered design method for increasing a system's "findability".
- The process involves sorting a series of cards, each labeled with a piece of content or functionality, into groups that make sense to the users.



What is Card Sorting?

- Card sorting is a link between
  - how people think/organize → Website structure
- Why use it?
  - Quick
  - Inexpensive
  - Reliable
- There are different ways users may think about and sort content…

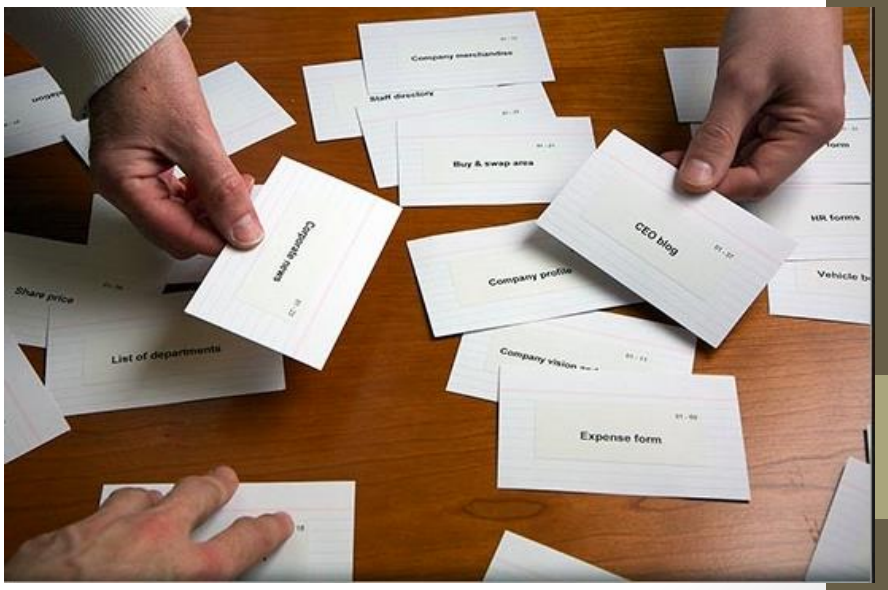
A Simple Non-Technical Example

Why is It Useful?

- What do you think?
- What it gives you
  - The structure for website/app interface
  - Suggestions of what you put
  - Labeled categories
- You learn..
  - How different people think about, organize, and expect to access your content
  - A bit about the language/terminology used by a particular group

Issues with Card Sorting

- Card Sorting is “Deceptively Simple”
  - You probably think you know *how* to sort things in a way that will make sense to your users… But you probably don’t!
- Conflicted results
  - Consensus conclusion

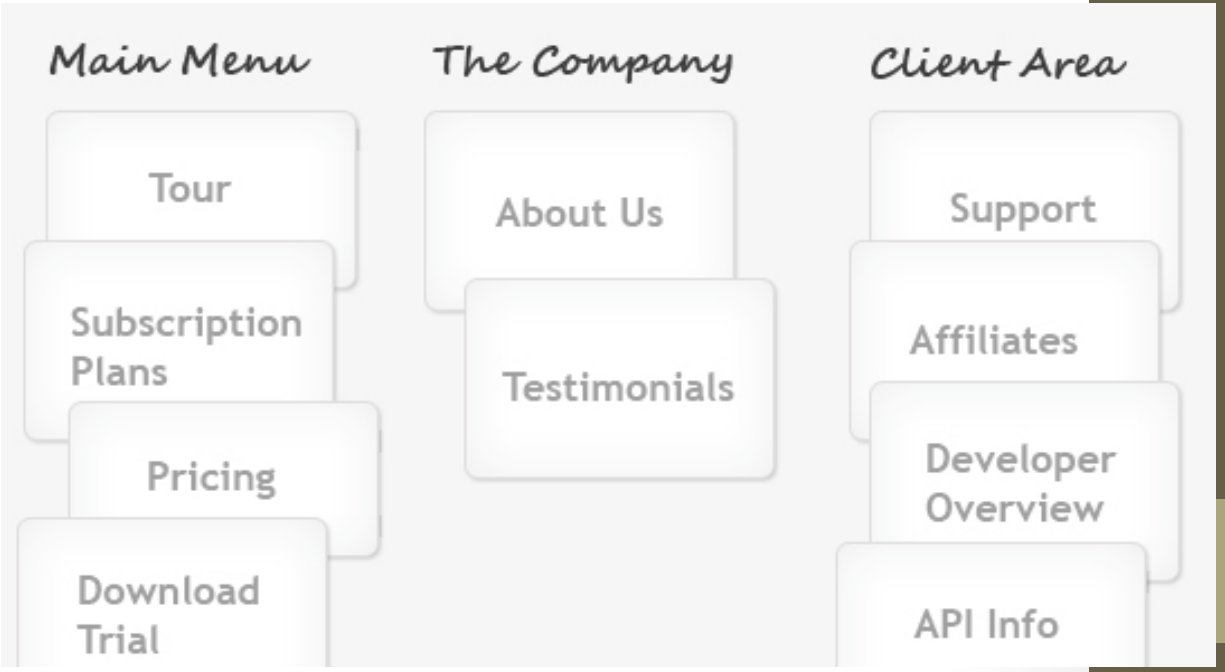


Open Sort vs. Closed Sort

As usual, when it comes to methodology you have to ask “What is my goal?”

Two types:

- Open Sort
  - “Discover”
- Closed Sort
  - “Validate”



Open Sort vs. Closed Sort

Open Sort

- Participants are asked to organize topics from content within your website into groups **that make sense to them**
- Then **they name each group** they created in a way that they feel accurately describes the content
- Use an open card sort to learn how users group content and the **terms or labels they give each category**

Closed Sort

- Participants are asked to sort topics from content within your website into **pre-defined categories**
- A closed card sort works best when you are working an already fixed navigation/menu, and you want to **learn how users sort content items into each category**

Open Sort vs. Closed Sort

Example:

The content includes: “about us”, “forum”, “rating system”, “map of restaurants”, etc.

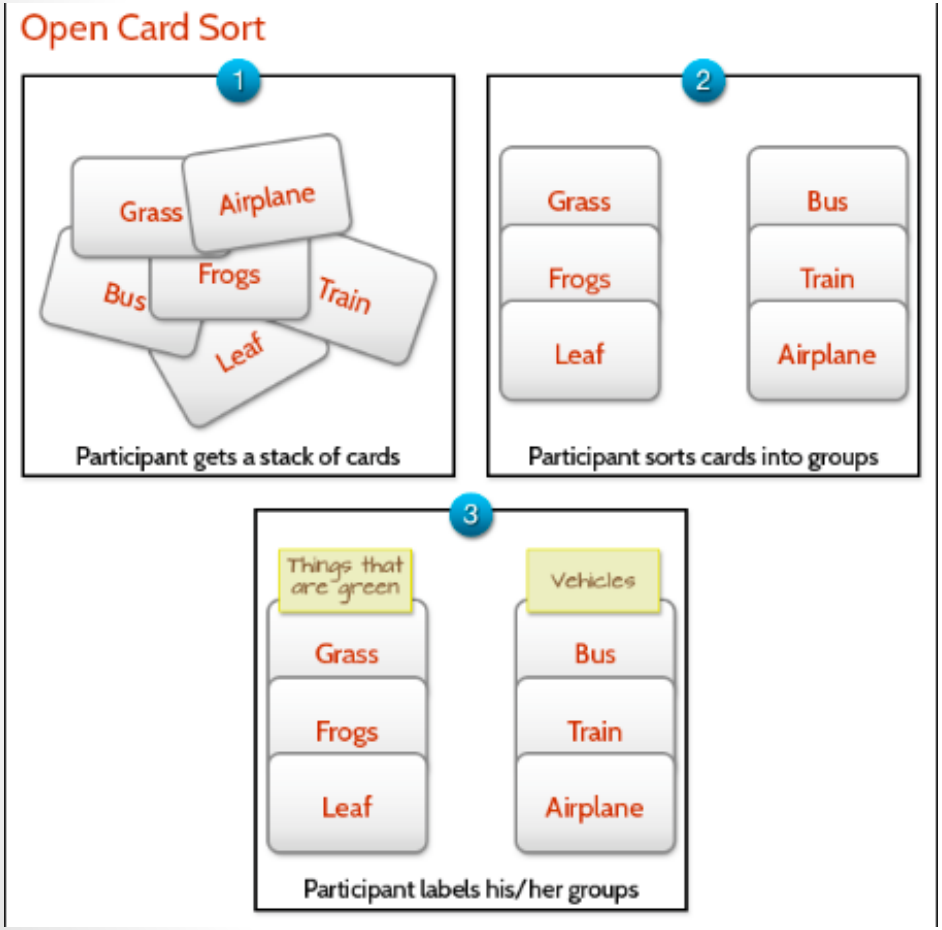
Open Sort

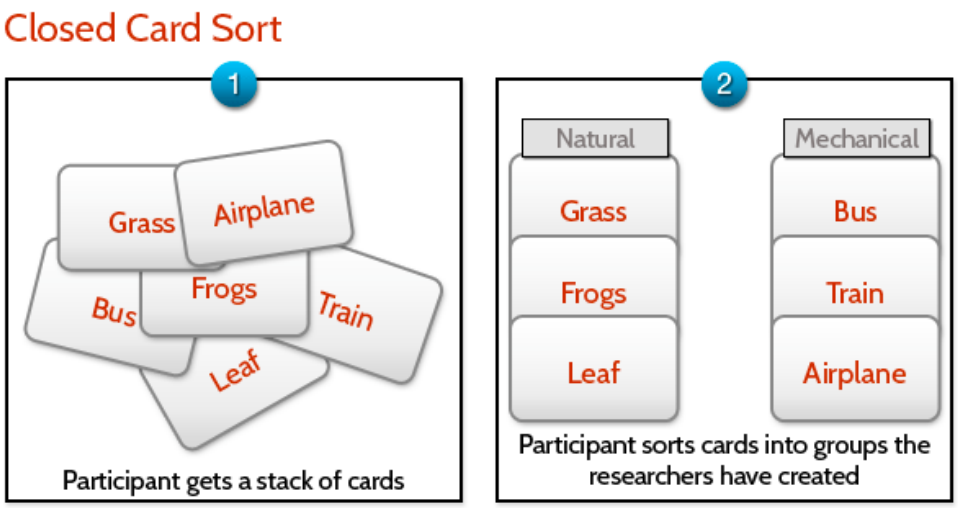
- Please organize this content into groups (no limit on # of groups)

Closed Sort

- The menu options are: “home”, “research”, “locations”, “contact us”, etc.
- Please organize content into these predefined groups

Example of Open Sort vs. Closed Sort



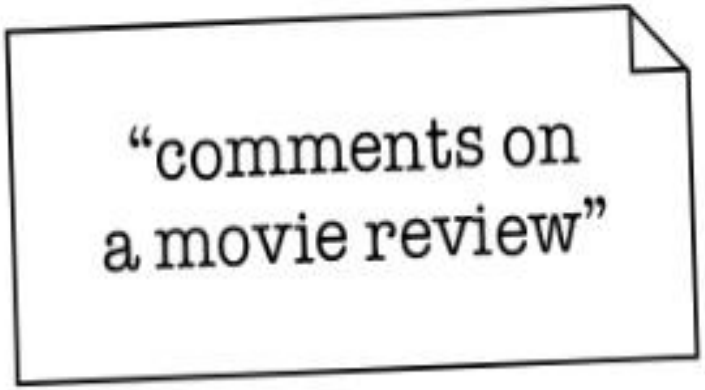


Preparing for Card Sorting

- Select content
  - Current content areas
  - Planned/future areas
  - “Blank cards” for users to create content (optional)
- Select your participants
  - Who are your users?
- Prepare the cards

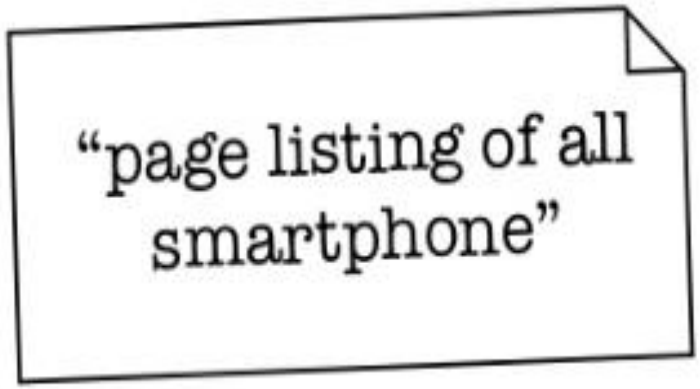
What Goes on a Card?

VS



ONE IS A PAGE, THE OTHER IS A PAGE ELEMENT

What Goes on a Card?



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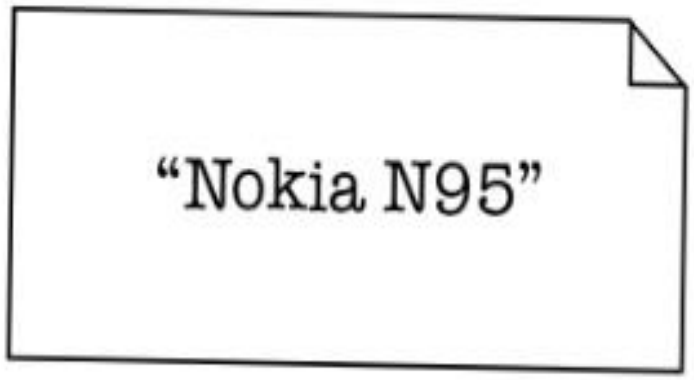

ONE OF THESE HAS ALREADY ENFORCED A CATEGORY...

Card Sorting Tips

1. Don’t expect the same results – discrepancies are good
2. Look for more information in the conversations than in the results (can ask participants to “think aloud”)
3. Be clear on your intentions – are validating (closed) or discovering (open)
4. Don’t equate your final card sort as your site structure --- look at the data as “input” because translation is still required
5. Run with actual users, but you can also use internally within your design team!
6. Can be conducted individually or in groups of people

More Card Sorting Tips

Detailed instructions of card sorting by Usability.gov

- https://www.usability.gov/how-to-and-tools/methods/card-sorting.html#:~:text=Card%20sorting%20is%20a%20method,help%20you%20label%20these%20groups.

Video Example

- https://youtu.be/TNvdgXCqEvM

Online Card Sorting Tools

Many online card sorting tools are available

- Free trial
- Enable both open and close card sort
- Report and analysis available

For example,

- OptimalSort
  - https://www.optimalworkshop.com/optimalsort
- UXtweak
  - https://www.uxtweak.com/card-sort-tool
- usabiliTest
  - https://www.usabilitest.com/card-sorting

Team Activity

- Continue working on prototype/testing
- Come up with your plan for usability testing
  - You've learned about several evaluation methods thus far, what evaluation methods might you use?

Reading Assignment

- ID Chapters 11, 14, and 15
- UYU Chapters 12 and 13