CS 321: Introduction to HCI

Methods for Design, Prototyping and Evaluating User Interaction

Lecture 11:
Personas & Task Analysis

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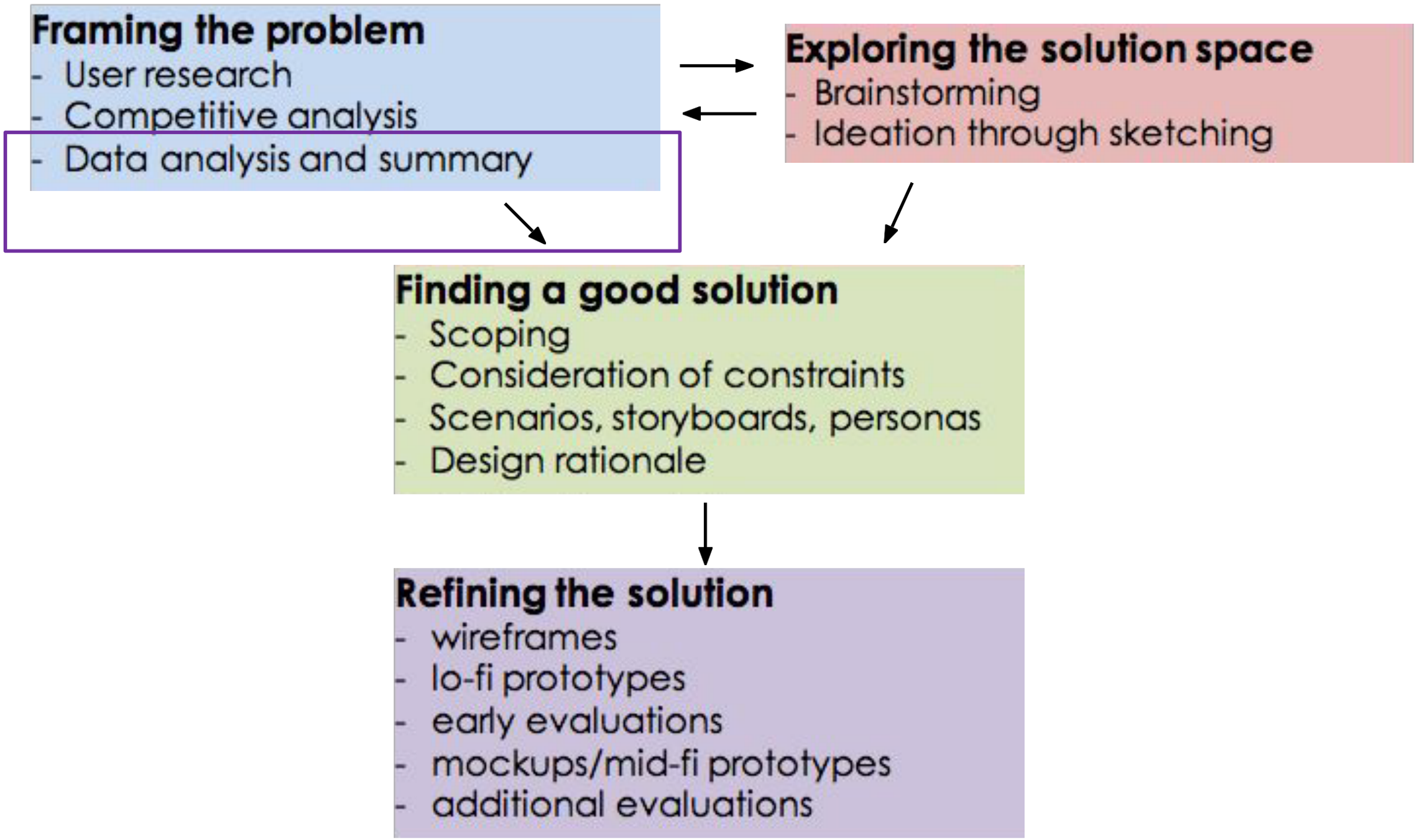
SIUe

Project Status



Personas

“When you are designing for everyone,
you are not designing for anyone.”

Personas

Confident learner

Picture credits – Nerdcoregirl, Flickr CC http://www.flickr.com/photos/nerdcoregirl/

Samantha Bell

"I'd love to keep in contact with my friends"

Sam is about to go abroad for her gap year, so her parents decided to get her a new camera, to make sure she's able to record everything she gets up to.

She likes the camera as it looks so modern, and it's able to do so much more than a lot of her friends' cameras.

She loves being in contact with people all the time, and finds it's a great way to kill time like when waiting for the bus. She uses a lot of the more advanced features – panoramic shots, online upload and .

When she encounters a problem she ignores it most of the time - she's not sure if she even got a manual with the camera. When she has trouble she can't ignore she speaks to her friends, or goes into a camera store – she wants to be talked through the problem.

First time user

Female, 27 year old, single

Student

Sam prefers to learn how to things by trying things out by herself. She isn't worried about 'breaking' anything. If she does need help she would prefer to not to refer to a manual but "do it herself".

Needs

In order of preference:

1. To share pictures with her parents
2. To share her pictures with her friends
3. To share her pictures with people she meets whilst travelling

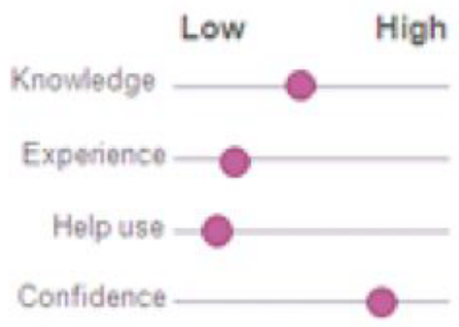
Ideal features

- Ability to take pictures
- Ability to upload images to personal site using 3G/Wifi
- Allowing others to access her pictures remotely
- Long battery life
- Ability to name and add comments to uploaded images
- Ability to create several albums, and upload pictures to each

Frustrations

- Lack of wireless/3G access
- Slow uploads
- Low battery life
- Need to be plugged in to upload images
- Slow shutter speed
- Want to be able to name/add comments to uploaded images
- Getting online is confusing
- Creating new albums

Key attributes



Personas

Personas (and stories…) fight back cognitive laziness (i.e., generalizing, taking the easy way out)...

Who are we really designing for?

Benefits of Personas

Designing for the most relevant stakeholders
Easier to Empathize
- Concreteness
- Recognition
- Evocativeness

Communication among team members and with customers

Personas

Christina Moletti

Freelance Graphic Designer

"Living life is a creative process too"

- Has enough money but not much more
- Works hard during the day but on her own hours
- Walking is her main way to travel, day or night

Personal Information

Age: 25
Location: Pittsburgh, PA
Education: BA Graphic Design NC State Unviersity,
Profession: Freelance Graphic Designer, Part-Time Student
Home life: Lives with a roommate (Eva 25),
Hobbies: Playing guitar and xylophone, reading, drawing, sewing, watching movies, sleeping
Favorite TV shows: Doesn't watch much TV
Personality: Easygoing, outgoing, try new things

User Goals

Christina uses this information system to...
- Give her reasons to go out walking at night
- To be active and aware of her surroundings at night
- To find the safest places to go at night
- Make walking and being out at night more social with her friends

Maria Nantes

Newspaper Editor

"I want to stay healthy both mentally and physically always"

- Health Conscious
- Use basic technology for day to day activities
- Enjoy Social groups

Personal Information

Age: 31
Location: Ann Arbor, MI
Education: Master's in English from U of Michigan
Profession: Newspaper Editor
Home life: Married, no children
Hobbies: Walking, making friends, Yoga
Favorite TV shows: Desperate Housewives
Personality: Outgoing, Passionate, Social, Cheerful, Sophisticated

User Goals

Maria uses this information system to...
- Connect and coordinate with friends
- Find safe walking routes at night
- Get a sense of safety by getting more info
- Find out about social events taking place at night, which might be of potential interest
- Wants to get emotional and mental relaxation by walking

James Goeffsner

Senior Engineer

"I know what I'm doing, I'm willing to try everything new."

- is willing to spend money on that
- Likes to chat with others online
- Knows that health is very important & work out

Personal Information

Age: 37
Location: San Fransisco, CA
Profession: Cellphone Interface Developing
Education: Master's
Home life: Single
Hobbies: Surfing online to look for new electronic products, working out at gym
Favorite TV shows: Friends, Heros
Personality: knowledgeable in popular stuffs, talkative, keeping things on schedule

User Goals

James uses this information system to...
- Stay ahead of latest trends on mobile devices
- Take more time to walk as the substitute for exercise
- Meet new friends through this application
- Feel free to walk at night
- Discuss the new interaction
- Try to figure out a method for socializing and also provide a feeling of security

Personas - Gender

Abby Jones[1]

You can edit anything in blue print

- 28 years old
- Employed as an Accountant
- Lives in Cardiff, Wales

Abby has always liked music. When she is on her way to work in the morning, she listens to music that spans a wide variety of styles. But when she arrives at work, she turns it off, and begins her day by scanning all her emails first to get an overall picture before answering any of them. (This extra pass takes time but seems worth it.) Some nights she exercises or stretches, and sometimes she likes to play computer puzzle games like Sudoku

Background and skills

Abby works as an accountant. She is comfortable with the technologies she uses regularly, but she just moved to this employer 1 week ago, and their software systems are new to her.

Abby says she's a "numbers person", but she has never taken any computer programming or IT systems classes. She likes Math and knows how to think with numbers She writes and edits spreadsheet formulas in her work.

In her free time, she also enjoys working with numbers and logic. She especially likes working out puzzles and puzzle games, either on paper or on the computer

Motivations and Attitudes

- ***Motivations*:** Abby uses technologies to accomplish her tasks. She learns new technologies if and when she needs to, but prefers to use methods she is already familiar and comfortable with, to keep her focus on the tasks she cares about.
- ***Computer Self-Efficacy*:** Abby has low confidence about doing unfamiliar computing tasks. If problems arise with her technology, she often blames herself for these problems. This affects whether and how she will persevere with a task if technology problems have arisen.
- ***Attitude toward Risk:*** Abby's life is a little complicated and she rarely has spare time. So she is risk averse about using unfamiliar technologies that might need her to spend extra time on them, even if the new features might be relevant. She instead performs tasks using familiar features, because they're more predictable about what she will get from them and how much time they will take.

How Abby Works with Information and Learns:

- ***Information Processing Style:*** Abby tends towards a *comprehensive information processing style* when she needs to more information. So, instead of acting upon the first option that seems promising, she gathers information comprehensively to try to form a complete understanding of the problem before trying to solve it. Thus, her style is "burst-y"; first she reads a lot, then she acts on it in a batch of activity.
- ***Learning: by Process vs. by Tinkering*:** When learning new technology, Abby leans toward process-oriented learning, e.g., tutorials, step-by-step processes, wizards, online how-to videos, etc. She doesn't particularly like learning by tinkering with software (i.e., just trying out new features or commands to see what they do), but when she does tinker, it has positive effects on her understanding of the software.

[1]Abby represents users with motivations/attitudes and information/learning styles similar to hers. For data on females and males similar to and different from Abby, see http://eusesconsortium.org/gender/gender.php

Personas - Culture

https://www.researchgate.net/publication/278034641

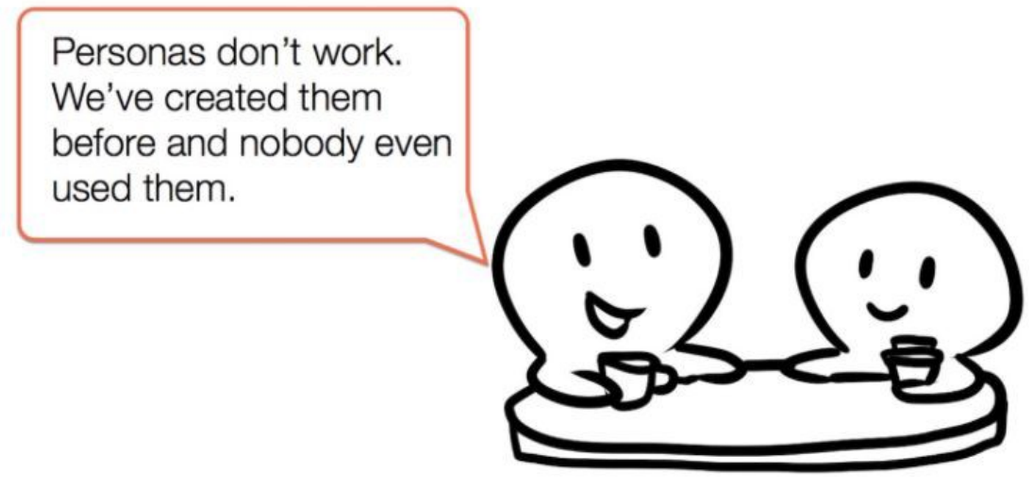
Why Personas Fail

They were created, but not used

No buy-in from leadership

Personas were created by UX people and imposed on others

People don’t know what personas are or why they’re useful



https://www.nngroup.com/articles/why-personas-fail/

Persona Development

What is the main user that you are designing for?

What are their most relevant characteristics?

How are their goals and motivations?

Define User Stories:

"As a [role], I want [feature] because [reason]."

Class activity

Let’s develop a **persona** for one of your projects:

What is the main user that you are designing for?
What are their most relevant characteristics?
How are their goals and motivations?

Define at least two User Stories:

“As a [role], I want [feature] because [reason].”

Critique of the persona…

Let’s critique the persona:

Are the personas representative of the user population?

Is there an adequate level of detail?

Do you feel like you have a good understanding of the users?

Would it be easy/useful to refer to they while designing?

Task Analysis

Task Analysis

Task Analysis is a lens on the information you obtain through other user research methods

Focus on users' goals and…
… on how do people accomplish a specific task

Helps identify the tasks that your solution must support

Helps to find effective ways of accomplishing a task

Task Analysis Questions

Who is going to use the system?
What tasks do they now perform?
What tasks are desired?
How are the tasks learned?
Where are the tasks performed?
What is the relationship between people & data?
What other tools do people have?
How do people communicate with each other?
How often are the tasks performed?
What are the time constraints on the tasks?
What happens when things go wrong?

Question 1

Who is going to use the system?

Identity

- In-house or specific customer is more defined
- Broad products need several typical consumers

Background

Skills

Work habits and preferences

Physical characteristics and abilities

Question 2 and 3

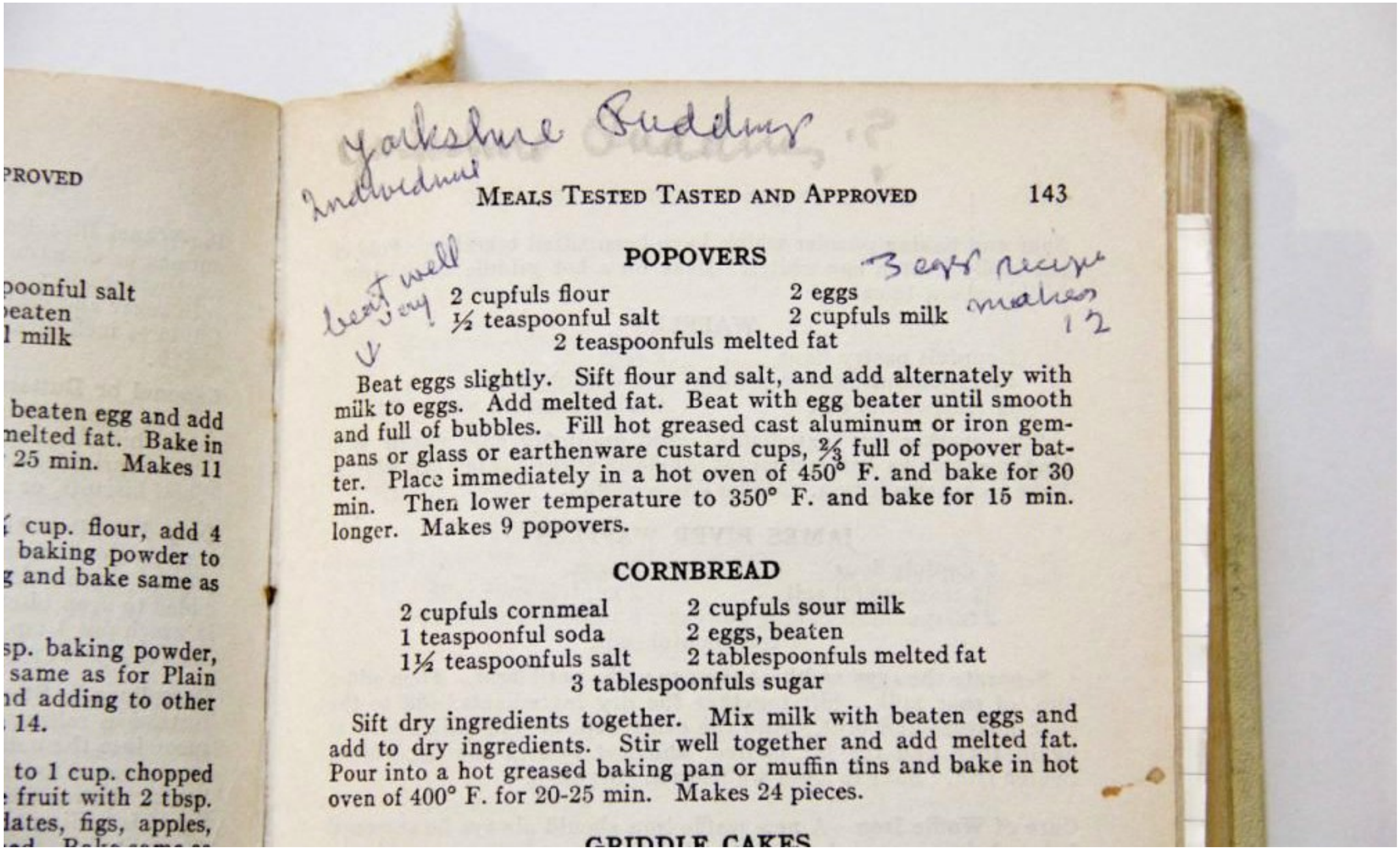
What tasks do they now perform?
What tasks are desired?

Important for both automation and new functionality
Relative importance of tasks?
Observe people, see it from their perspective

Automated Billing Example

- small dentists office had billing automated
- assistants were unhappy with new system
- old forms contained hand-written margin notes
- e.g., patient's insurance takes longer than most

Question 2 and 3



PROVED

poonful salt
beaten
l milk

beaten egg and add
melted fat. Bake in
25 min. Makes 11

cup. flour, add 4
baking powder to
and bake same as

sp. baking powder,
same as for Plain
nd adding to other
14.

to 1 cup. chopped
fruit with 2 tbsp.
lates, figs, apples,

Yorkshire Puddings
Individual

POPOVERS

beat well
very

3 egg recipe
makes 12

2 cupfuls flour
½ teaspoonful salt
2 eggs
2 cupfuls milk
2 teaspoonfuls melted fat

Beat eggs slightly. Sift flour and salt, and add alternately with milk to eggs. Add melted fat. Beat with egg beater until smooth and full of bubbles. Fill hot greased cast aluminum or iron gem-pans or glass or earthenware custard cups, ⅔ full of popover batter. Place immediately in a hot oven of 450° F. and bake for 30 min. Then lower temperature to 350° F. and bake for 15 min. longer. Makes 9 popovers.

CORNBREAD

2 cupfuls cornmeal
1 teaspoonful soda
1½ teaspoonfuls salt
2 cupfuls sour milk
2 eggs, beaten
2 tablespoonfuls melted fat
3 tablespoonfuls sugar

Sift dry ingredients together. Mix milk with beaten eggs and add to dry ingredients. Stir well together and add melted fat. Pour into a hot greased baking pan or muffin tins and bake in hot oven of 400° F. for 20-25 min. Makes 24 pieces.

GRIDDLE CAKES

Question 4

How are the tasks learned?

What does a person need to know to perform the task?

Do they need training?

academic
general knowledge / skills
special instruction / training

Question 5

Where are the tasks performed?

Office, laboratory, point of sale?
Effects of environment on customers?
Are people under stress?
Confidentiality required?
Do they have wet, dirty, or slippery hands?
Soft drinks?
Lighting?
Noise?

Question 6

What is the relationship between people & data?

Personal data

- Always accessed at same machine?
- Do people move between machines?

Common data

- Used concurrently?
- Passed sequentially between customers?
- Remote access required?
- Access to data restricted?
- Does this relationship change over time?

Question 7

What other tools does a person have?

More than just compatibility

How customer works with collection of tools

Automating lab data collection example:

- how is data collected now?
- by what instruments and manual procedures?
- how is the information analyzed?
- are the results transcribed for records or publication?
- what media/forms are used and how are they handled?

Question 8

How do people communicate with each other?

Who communicates with whom?
About what?
Follow lines of the organization? Against it?

Question 9

How often are the tasks performed?

Frequent use likely remember more details
Infrequent use may need more help
    Even for simple operations,
    Make these tasks possible to accomplish

Which function is performed
    Most frequently?
    By which people?
    Optimizing for these will improve perception of performance

Question 10

What are the time constraints on the tasks?

What functions will people be in a hurry for?

Which ones can wait?

Is there a timing relationship between tasks?

Question 11

What happens when things go wrong?

How do people deal with
- task-related errors?
- practical difficulties?
- catastrophes?

Is there a backup strategy?

What are the consequences?

Selecting Tasks

Real tasks people have faced or requested

- collect any necessary materials

Should provide reasonable coverage

- compare check list of functions to tasks

Mixture of simple and complex tasks

- easy tasks (common or introductory)
- moderate tasks
- difficult tasks (infrequent or for power use)

What can task analysis help with?

Say what **person** wants to do, but not how

- allows comparing different design alternatives
- identify what tasks can be improved, automated, etc.

Specify **stories** based in concrete facts

- say who person is
- design can really differ depending on who
- give names (allows referring back with more info later)
- characteristics of person (e.g., job, expertise)
- story forces us to fill in description with relevant details

Describe a complete "**accomplishment**"

- forces us to consider how features work together

Types of Task Analysis

Hierarchical Task Analysis

focused on decomposing a high-level task into subtasks

Cognitive Task Analysis

focused on understanding tasks that require:

decision-making

problem-solving

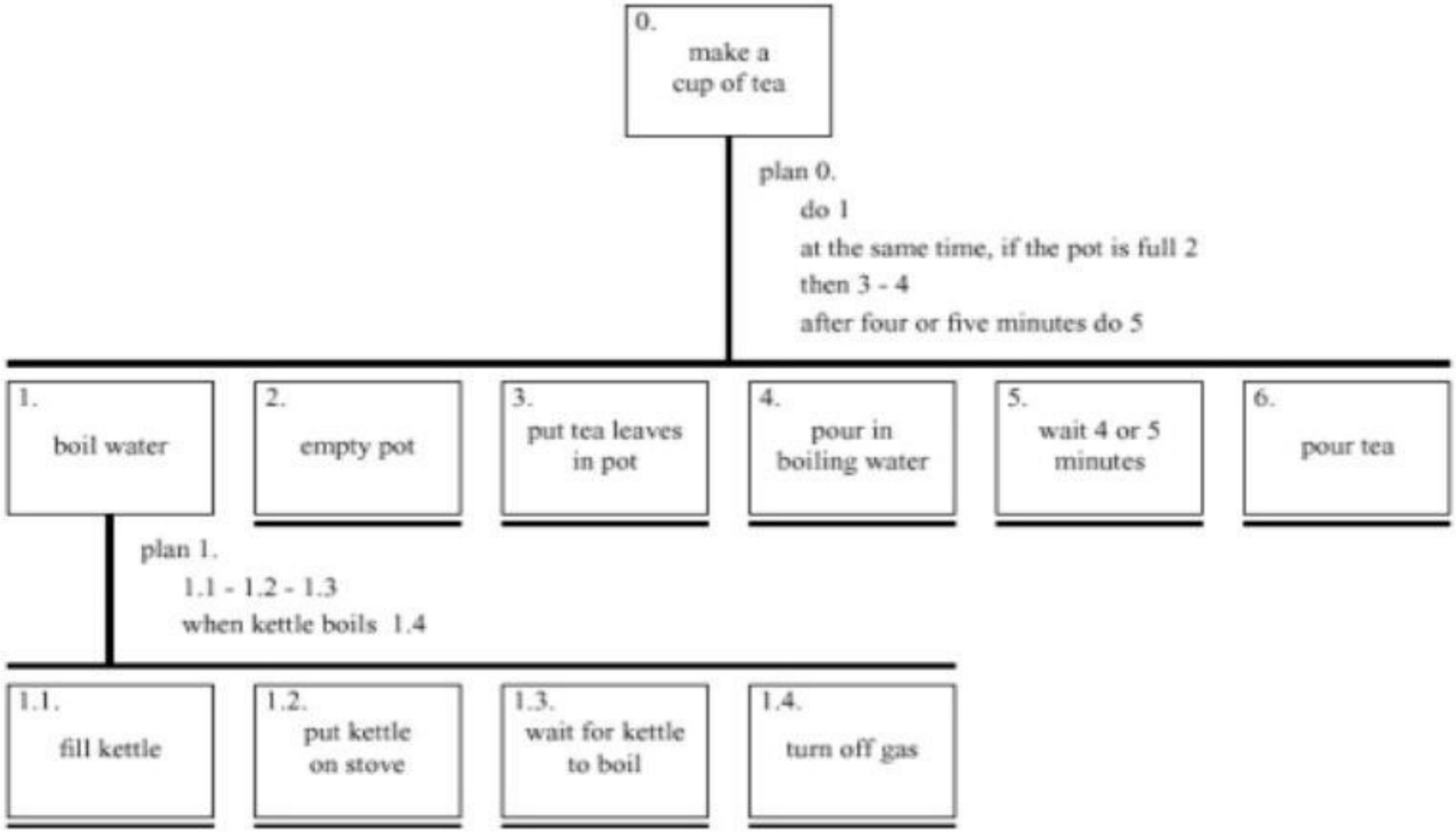
memory

attention

and judgement

https://www.interaction-design.org/literature/article/task-analysis-a-ux-designer-s-best-friend

Hierarchical Task Analysis:



Using tasks in design

Write up scenarios and storyboards

formally or informally run by people and rest of the design team get more information where needed

Manny is in the city at a restaurant and would like to call his friend Sherry to see when she will be arriving. She called from a friend’s house while he was in the bus tunnel, so he missed her call. He would like to check his missed calls and find the number to call her back.

Task: Park in a new neighborhood

Peter is going to brunch on a Sunday with his roommates. He is trying a new place he found on Yelp. He has the address for the place and he is using a smartphone GPS for directions. He leaves the apartment with his roommates at around 8:30am and he wants to beat the crowd so they won't have to wait in line. He is driving a Toyota Corolla that he has owned for five years. It is a rainy day and he doesn't have an umbrella.

Task: Park in a new neighborhood

unknown neighborhood and restaurant facade

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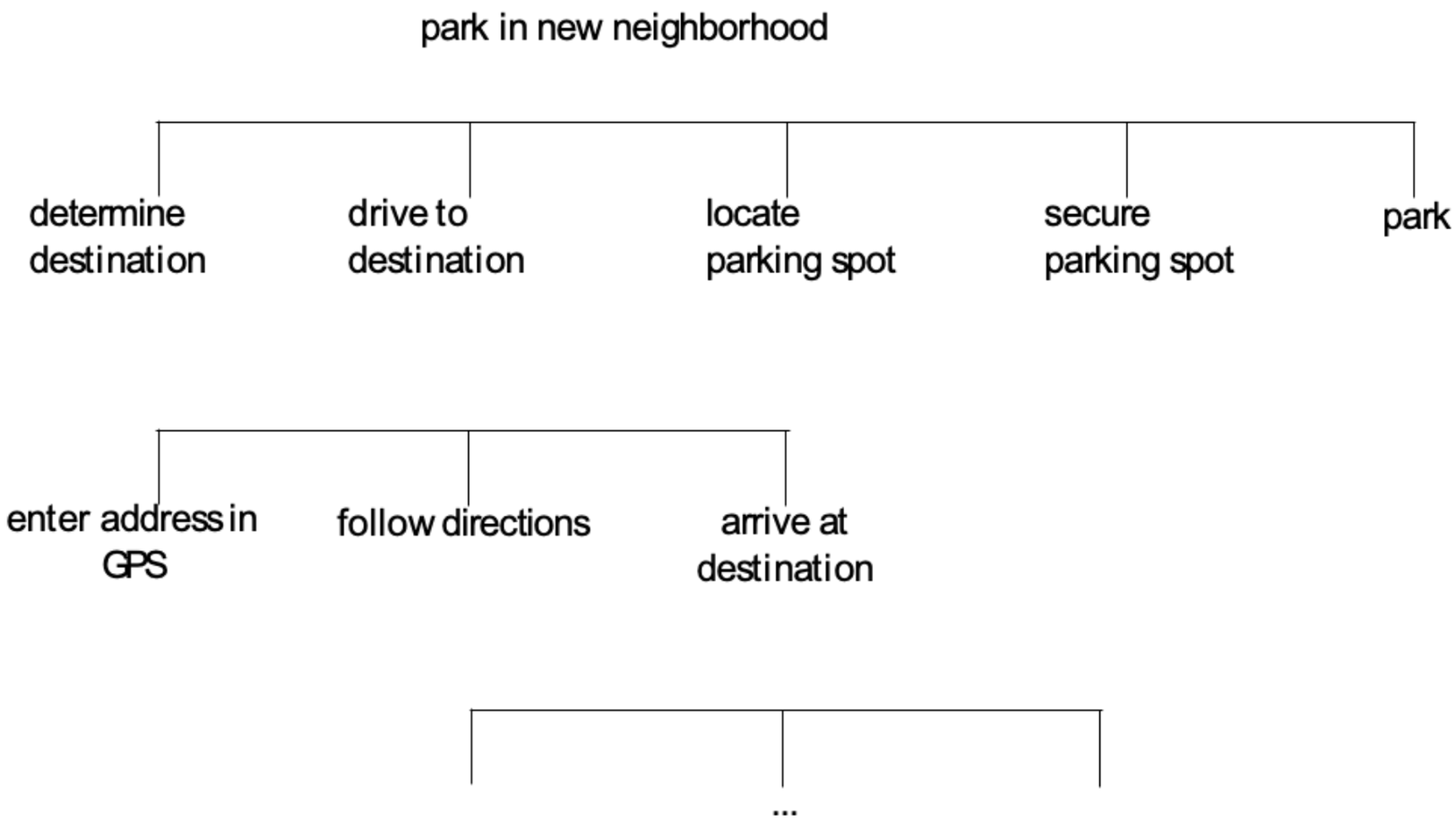
needs to find a parking spot close by so as to not cause further delays

Task: Park in a new neighborhood

Steps of the task execution (detailed in a hierarchy)



Questions