

Foundations of Design

Scenarios & Requirements

School of Computer and
Communication Sciences

EPFL

Pearl Pu

- What is the process that bridges between research and design?
- What is a scenario in design?
- What is so particularly interesting to use narratives for scenarios?
- What are the different types of scenarios? in which stages of design were they used respectively?
- What are the key differences between persona-based scenarios and use cases?
- What does the word “requirement” mean?
- What is the requirement definition process? what does it comprise?



BRIDGE FROM RESEARCH TO DESIGN?

- Domain research
 - understand the domain where the product operates, including users' needs
- User research
 - interviewing and observing users, and identifying **gaps** between what they need and what is available
 - user modeling - creating composite user archetypes so that we can visualize and empathize with them, and understand their goals, mental models, motivations, behaviors, and tasks

How do we use this understanding of people to create design solutions that *satisfy* and *inspire* users, while simultaneously addressing business goals and technical constraints?

- This design process includes four activities:
 - scenarios
 - requirements
 - interaction framework (behavior)
 - visual and industrial design framework



The glue that holds everything together: narrative

WHAT IS A SCENARIO IN DESIGN?

Scenario is a *narrative* (storytelling) to construct and illustrate design solution, at many levels of detail.

It describes how personas *achieve* their goals.



THREE TYPES OF SCENARIOS

- Context scenarios - pre-design scenario focusing on users' end goals and what they have to do to achieve these goals
- Key path scenario - it is derived from context scenario; it emphasizes on interaction priorities, and introduces design vocabulary; it is refined as more detail is developed
- Validation scenarios - validation scenarios are used to test the design solution in different situations
- Notice these scenarios are used at different stages of design



HOW TO DEVELOP **CONTEXT** SCENARIO

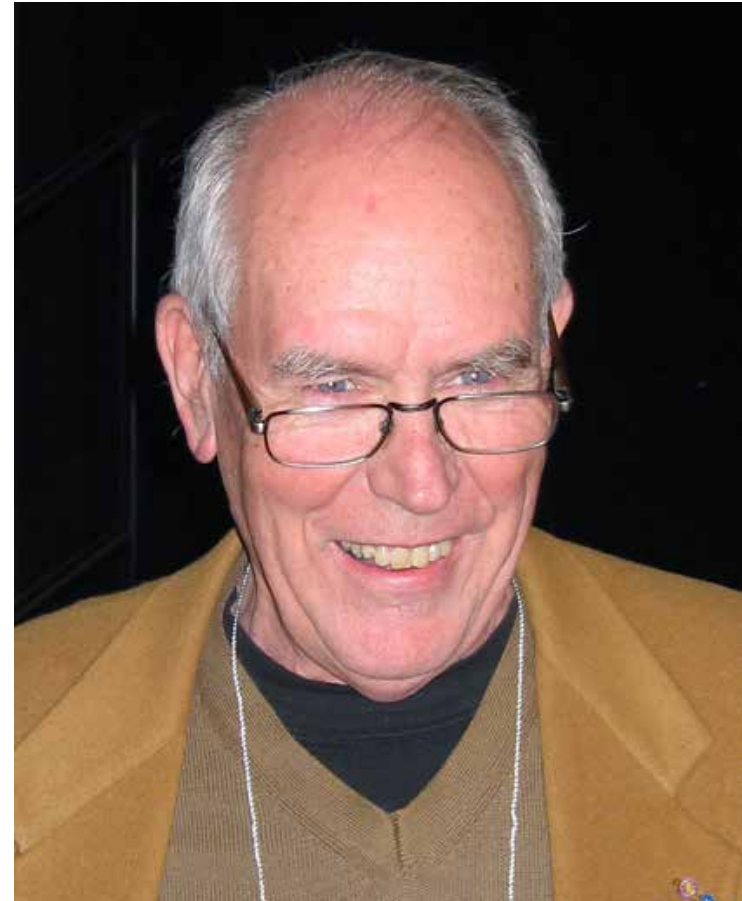
- Tells stories from personas' perspective
- Is brief, but comprehensible and engaging (emotional)
- Is concrete (day-in-the-life scenarios)
- Explores, at a high level, how the product can best serve the personas' needs
- Focuses on personas' activities, perceptions, and desires, and how they achieve goals
- Describes an ideal user experience
- It gives visual descriptions of interactive products
- Is based on information gathered during the Research phase and analysed during the Modeling phase (content and context)
- It avoids discussing actual technology or business constraints
- Contains magic



WHY USING STORYTELLING TO ILLUSTRATE DESIGN?

- We love to listen to stories
- We use them to communicate ideas and possibilities

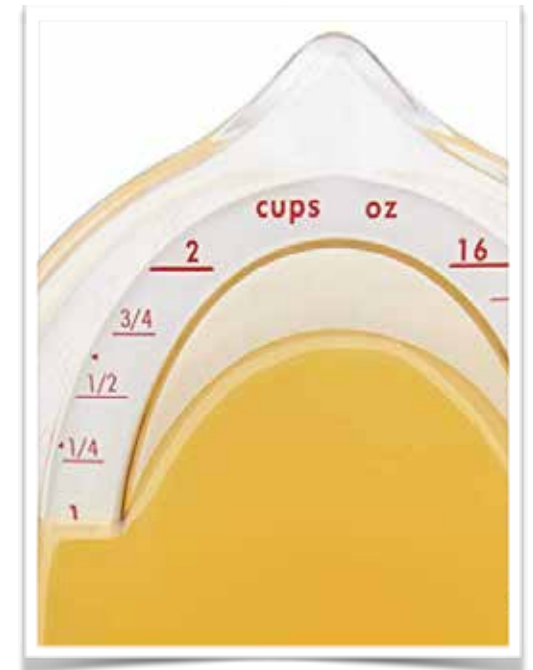
- Story about a pioneer in HCI
- Who was considered the founding father of GUI?
 - a computer science student from MIT; his name is **Ivan Sutherland**
- What did he invent? when?



Sketchpad,
1963

THE PRINCIPLE OF WYSWYG INTERFACE

- **Direct manipulation**
 - Users can evaluate their actions instantaneously





DESIGN SCENARIO IS NOT JUST ANY STORY

- It's about future and possibilities
- It's not a recall of an event
- It's called to-be scenarios



SCENARIOS AND USE CASES

- Similarity - both describe a user's interaction with a system
- **Scenarios** describe not only the functionality of the system, but also *the priority of functions*, what the user sees and how she interacts with the system
- **Use cases** give *an exhaustive* list of functional requirements of the system

Requirement definition phase determines the what of design:
what information and capabilities
our personas *require* to
accomplish their goals.



DIFFERENCE BETWEEN WHAT AND HOW

- The next phase, the framework definition, determines how the product looks, behaves, operates, and feels
- Confusing these two questions is one of the biggest pitfalls in the interactive design
- Why? You run the risks of forever iterating your solutions



A WORD ON “REQUIREMENT”

- Requirement is misused in industry
- Requirements are equivalent to “features” and “functions” — wrong
- Requirements are synonymous to “needs” — correct



REQUIREMENTS VS. FEATURES

- Needs should be fixed earlier
- Feature or function can be provided later



WHERE DO REQUIREMENTS COME FROM?

- Requirements are based on
 - personas' previous experiences and mental models
 - Ideal usage scenario analysis
 - Business and technical requirements



REQUIREMENT DEFINITION

1. Creating problem and vision statements
2. Brainstorming (eliminate preconception and allow imagination)
3. Identifying persona expectations (mental model)
4. Constructing context scenarios
5. Identifying requirements (data, functional)



Team activity

“Ideate solutions”



- Read Design Brief III
- Create your vision statement (together)
- Ideate context scenarios describing the ideal user experience, for example,
 - Emma came home last night and found herself in a depressive mood;
 - She suddenly remembered an app called “...” that her coach mentioned...

Tips for ideation

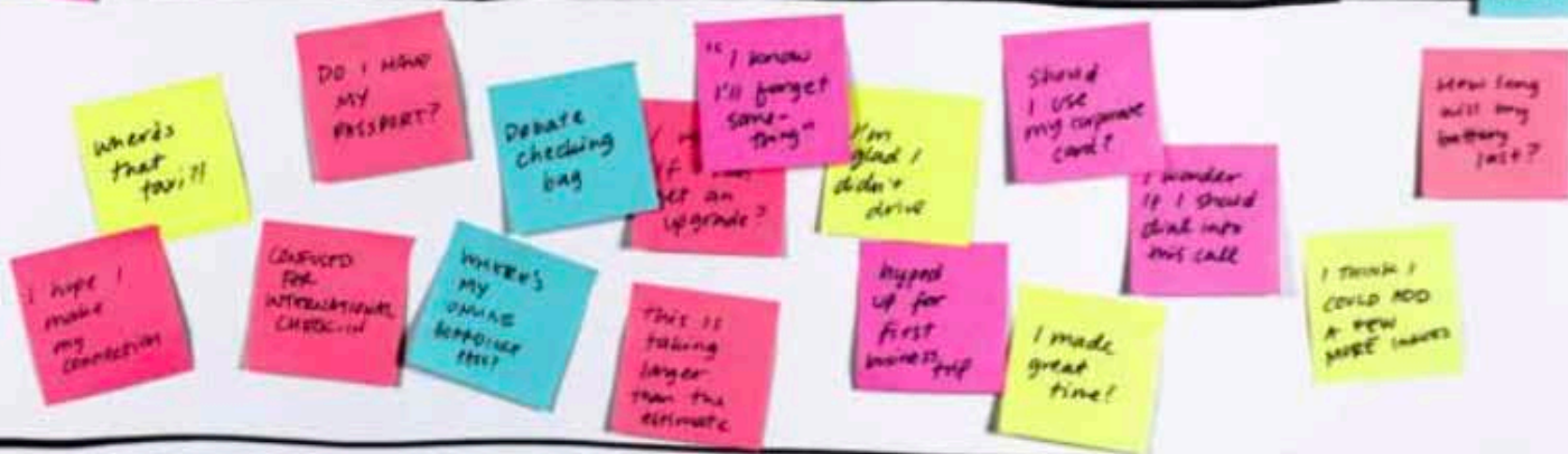
- Everyone participates
- Write or sketch lots of your ideas on sticky notes before talking about them
- There are no bad ideas
- Stay on time (60 minutes)

PHASES

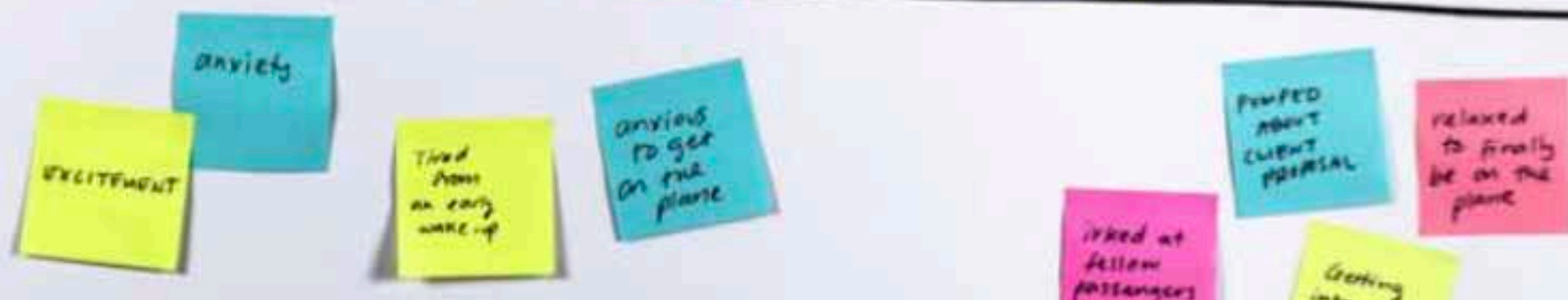
DOING



THINKING



FEELING





DETAILED SPEC OF CONTEXT SCENARIOS

- In what setting(s) will the product be used?
- Will it be used for extended amounts of time?
- Is the persona frequently interrupted?
- Are multiple users involved in creating the experience?
- With what other products will it be used?
- **What primary activities does the persona need to perform to meet her goals?**
- What is the expected end result of using the product?
- How much complexity is permissible, based on persona skill and frequency of use?

- Vision statement
 - WineExpert is a wine recommender system, helping users discover wines in places where they consume wines: parties, restaurants, meals at home
 - The primary persona is a combination of (Jacques, Kate, Eugene)

EUROPEAN WINE CONSUMER



Jacques

Manager at a software company

Almost a daily wine consumer

Wife and two college educated children

Hobby: golf and travel



FEMALE WINE CONSUMER FROM US



Kate

Magazine editor

Buys exclusively online

Good income

Likes European
culture, and likes to
experience new things

Hobby: reading



WESTERN EDUCATED ASIA WINE CONSUMER



Eugene

Works for multinational
company

EPFL graduate

Went back to Hong
Kong few years ago

Hobby: golf & art
collection



JACQUES AND HIS CONTEXT SCENARIOS

- Jacques Boutin is a IT manager in a software company. He frequently travels to meet clients. He also travels for pleasure with his family
- Although by far he is an expert of wines, he is very knowledge about them and is quite confident when ordering one
- Jacques has developed personal preferences for wines. On occasions, he still likes to **discover** new wines from restaurants, hotel bars, wine tasting tours, and wine shows
- One day, Jacques goes to a restaurant whose owner provides tablets to his VIP customers for **ordering food and wine**

- Jacques likes the roast beef on the menu. He knows that a “Châteauneuf-du-Pape”, from the domain “Clos des Papes” of the year 2003 would be great. However, he just had it 2 days ago.
- He **locates** that wine by giving the exact name of “Châteauneuf-du-Pape”.
- He **wants a recommendation** of a similar wine.

- After dinner, he wants to provide feedback about the wine he finally ordered because he liked these fruity and woody savors. He also **earns** brownie points for rating wines.
- He **rates** it on a tabletPC and **provides a comment**.
- He wants to **remember this wine**, to **order them** online and **recommend** it to his friends via social media and for future occasions.



USER: KATE AND HER GMRT

- Kate Austen is an editor for a fashion magazine in New York city. She is very dynamic, friendly and very sociable.
- She is not an expert about wines. She just enjoys drinking wines during parties and social events.
- She likes tasting new wines from different countries.
- She is not very confident when buying a bottle. Thus she **needs advises** from her friends and family, and information provided by wine websites.

- Kate is also a fan of new technologies and killer applications. She is equipped with smart phones, tablets, and software apps.
- During a party, she **discovers** a great new wine.
- She discretely **takes a photo of the wine label**, **uploads** to the site, and is able to **find information** about this wine on WineExpert.
- After consumption, she **puts a rating/comment**.
- She wants to **suggest this wine to her friends** on social media, and adds **personal messages**.



USER: EUGENE AND HIS GMRT

- Eugene Huang is an expatriate and works as an assistant to the director in a multinational company in Hong Kong. He becomes an aspiring wine consumer while studying and working in Europe. He always wants to learn more about wine.
- Eugene is a weekly wine consumer. He likes tasting new wines in social events and buys those he likes to drink them at home.
- One day, as Eugene is preparing a dinner for his wife, he **looks up the suggested wines that go well with “boeuf bourguignon”** in WineExpert. In fact, WineExpert knows all of the wines he has in his cellar.
- WineExpert not only **suggests** the best wine, but also **wines that are best consumed at the time of the query**.

- He wants to buy a good wine for a special occasion. He logs on and started **searching** and **browsing**. He would like to **find a** French red wine.
- He **reads** the ratings and comments. Three wines got his attention. He **recognizes one of these wines** and remembers that he liked it. He now wants to **compare these 3 wines**. He finally **chooses** the second one, because he never tried it and notices it is similar to the one he liked but is cheaper.

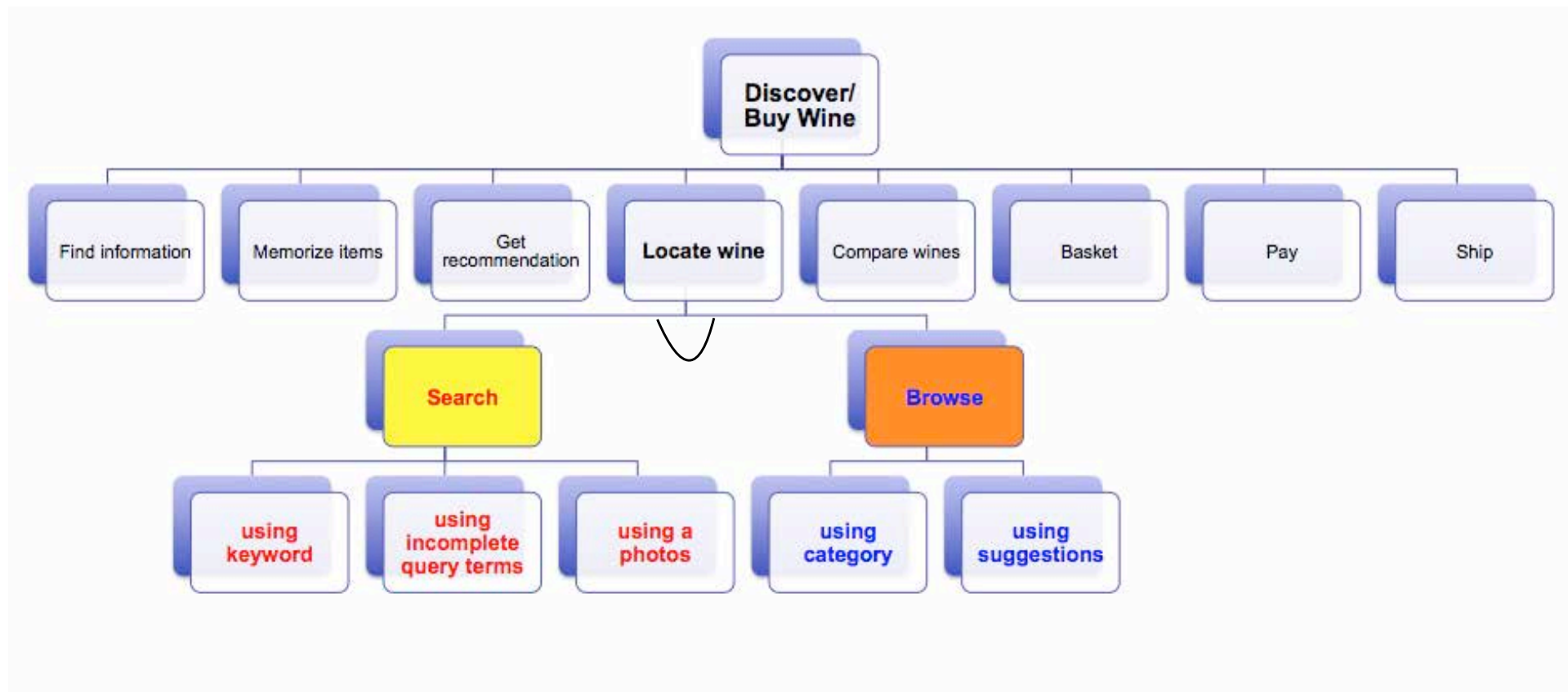
- Definition: a task model is an abstract tree structure where a set of main tasks are outlined. Each main task can be further divided into subtasks.
- From the scenarios for each persona
 - List all tasks at a higher level
 - Activities (verbs) users want to accomplish
 - If a task is too big, divide it further into subtasks
- Create a task tree
 - Group related subtasks together
 - Denote the order of tasks (ones on the left need to be done first)
 - Denote subtasks that are alternative to each other by “or” sign



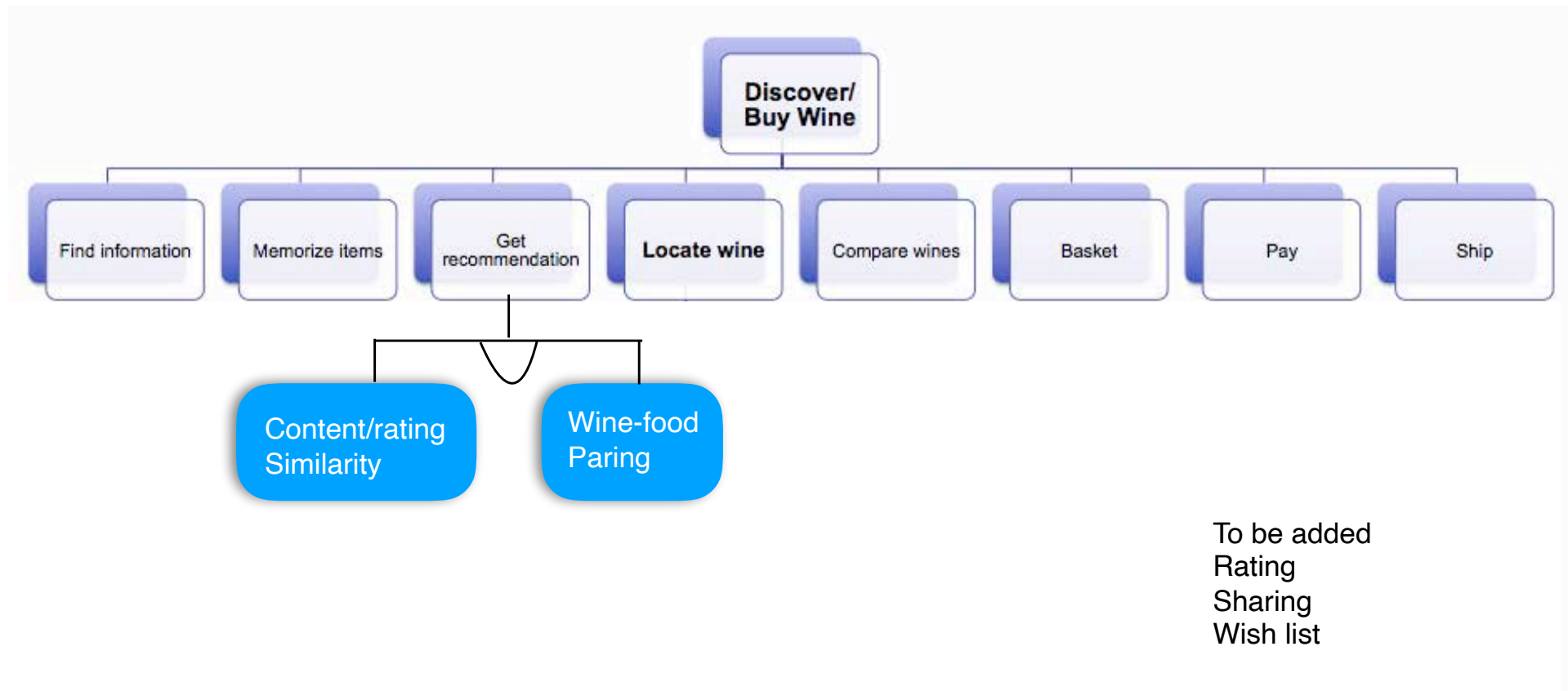
TASK NAMES

- **Search** wine with its specific name and year etc.
- **Browse** wine by types, years, terrier, reviews, and ratings
- **Get recommendation** using content similarity or purchase pattern
- **Food wine paring** recommendation based on food
- **Info:** get wine information
- **Share:** suggest wine to friends
- **Rate** and **comment** a wine
- **Remember** a wine
- **Compare** several wines

TASK TREE FOR WINEEXPERT



TASK TREE FOR WINEEXPERT



- Pretend the interface is magic
 - If your persona has goals and the product has magical powers to meet them, “how simple could the interaction be?”



Knowledge Navigator

Class Discussion “Scenarios”



- Watch the video “Knowledge Navigator”
- Form discussion groups (three-four members)
 - who is the persona?
 - what are the context scenarios?
 - how many such scenarios were presented?
 - what gets accomplished by the persona in each scenario?

