

Synthetizing

User Experience Design

Alberto Monge Roffarello

Academic Year 2023/2024

Hall of Fame or Shame?

The screenshot shows the Microsoft Bing weather interface for Turin, Italy. The search bar contains the word "weather". Below the search bar are navigation tabs for ALL, NEWS, IMAGES, VIDEOS, MAPS, and SHOPPING. The search results show 61,400,000 results for the location "La Crocetta, Piedmont". The main weather card displays the current temperature as 13°C (55°F) with a high of 20°C and a low of 13°F. It also shows weather conditions (Sunny), time (Tue 18, 10:06 AM), and a 7-day forecast. A detailed hourly forecast is shown below the 7-day forecast, including a temperature line graph and a precipitation bar chart.

Microsoft Bing weather

61,400,000 Results Date Results near La Crocetta, Piedmont · Change

10129, Turin, Turin, Piedmont, Italy Updated over an hour ago

Sunny · Tue 18, 10:06 AM

11 AM 2 PM 5 PM 8 PM 11 PM 2 AM 5 AM 8 AM

Day	Icon	High	Low
Tue 18	Sunny	20°	14°
Wed 19	Sunny	21°	14°
Thu 20	Cloudy	17°	15°
Fri 21	Cloudy with rain	15°	13°
Sat 22	Cloudy	18°	14°
Sun 23	Cloudy	18°	15°
Mon 24	Cloudy with rain	17°	14°
Tue 25	Cloudy	18°	14°
Wed 26	Cloudy	18°	14°

16° 19° 21° 18° 17° 16° 15° 15°

11 AM 2 PM 5 PM 8 PM 11 PM 2 AM 5 AM 8 AM

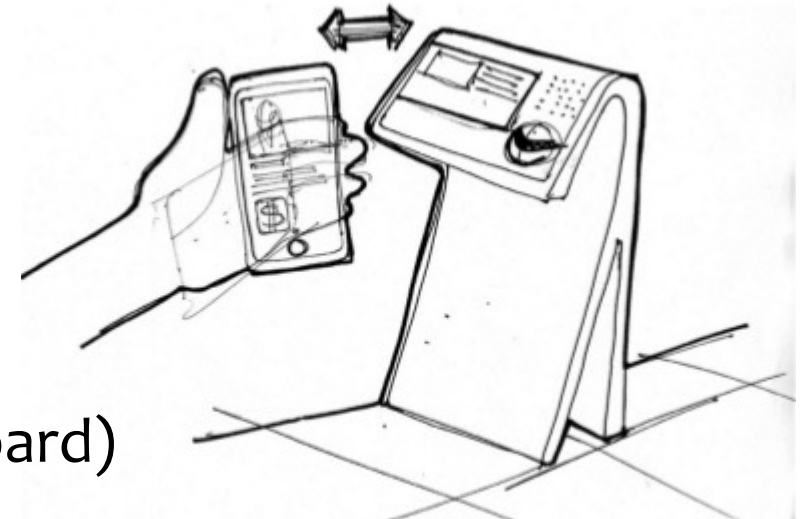
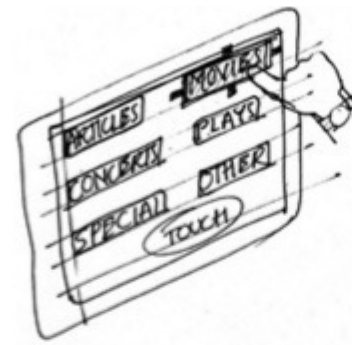
Detailed forecast · Data from Foreca Show background

Sketches

Quick drawings to convey a part of the interface, or a feeling about a design

Sketch

- An individual drawing showing
 - A single user interface screen
 - A drawing of an artifact part of the system
 - The shape of an interaction object
- Gives a static view of a possible interaction
- Helps setting the interaction context
- Often, part of a longer representation (e.g., a storyboard)



Scenarios

Possible sequences of actions for reaching user goals

Scenario

- Scenarios are stories for design: rich stories of interaction
- Description of how the user engages the interactive system to solve a specific task/goal
- Formats:
 - Written summary, Use Case
 - Graphical sketches (→ Storyboard)
 - Flowcharts, Transition Diagram...

Level of Details In Scenarios

▪ **Stories**

- From needfinding
- Used for understanding what people do and what they want

▪ **Conceptual (abstract) Scenarios**

- Used for generating ideas and specifying requirements
- Abstracts tasks from stories
- No reference to technology
- May lead to different concrete scenarios

▪ **Concrete Scenarios**

- Used for envisioning ideas and evaluation
- One possible solution to a Conceptual Scenario (may try many alternatives)
- Shows how technologies are used in the user context
- Key design features are included

▪ **Use Cases**

- Used for specification and implementation (→ software engineering)

Storyboards

Comic book – like representation of user scenarios, with emphasis of how the system supports users in the development of the task

Storyboard

- “A graphical depiction of the outward appearance of the intended system, without any accompanying system functionality”
- A hand-drawn comic that features the execution of a task (like a concrete scenario)
- With a few panels (sequence of sketches) it conveys what a person may accomplish
 - Always include people
- They communicate **flow**, showing what happens **at key points** in time
- No artistic skills are required
 - Not about “nice pictures”
 - About communicating ideas



What To Find In a Storyboard

- Illustrate a goal (for the task)
- How a task unfolds (people interacting among themselves and with devices)
 - Repeated for all significant steps
- At the end, how they accomplish their goals (satisfactory outcome)

- Storyboards are **all about tasks**

Example

This storyboard illustrates how the app had already downloaded the daily recipe to the user's smartphone, so he could look it up and check the shopping list while on the underground, before shopping for ingredients and making a healthy meal.



<http://alexmevissen.com/2014/07/16/storyboarding/>

Example

This storyboard illustrates how the app can show the user that a home cooked meal can be quicker than ordering food delivery, using left over ingredients in the fridge.



<http://alexmevissen.com/2014/07/16/storyboarding/>

Storyboards Should Convey...

- Setting
 - People involved
 - Environment
 - Task being accomplished
- Sequence
 - What steps are involved?
 - Not the detailed UI
 - What role the UI plays in helping users achieve their goal?
 - What leads someone to use the system?
 - The “trigger” for the task
 - What task is being illustrated?
- Satisfaction
 - What’s the motivation for the user?
 - The end point to reach after all the steps
 - What’s the end result?
 - What need are you “satisfying”?

Handling Dynamicity In Storyboards

- Traditional storyboarding
 - “Comic book” conventions: actors, speech bubbles, background
 - Notes attached to each scene explaining what is happening
- Scored storyboards
 - When the user interface is highly dynamic, or contains specific media elements
 - Add specific annotations focusing on movement, colors, sounds, ...
- Text-only storyboards
 - When the interaction behavior is too complex to compact into an illustration, use a longer text description

Why Hand-drawn?

- Quick
 - No need to spend time in graphics tools (they would “push” you to focus on details, too)
 - Able to experiment different scenarios
- Imprecise
 - Users feel free to express more comments and suggestions w.r.t. a more “polished” version
 - Focus on the content (the graphics is obviously ignored)
 - No distraction by fonts, colors, icons, ...

Drawing Sketching People



Stick People



Block People



Blob People



Star People



Triangle People



Use Your Imagination

Star man versatility



neutral



pointing



ballet

Benefits of Storyboards

- Emphasize how an interface accomplishes a task
- Focus the conversation and feedback on user tasks
- Get everyone on same page about the app's goals
- Avoid nitpicking about user interface details (buttons, etc.)

Recap: Tasks

- Task: the structured **set of activities**/high-level actions required to **achieve** a user goal.
 - It says what a person *wants to do*, not how, and describe a *complete* goal.
- Often, given a domain, you have a **mix** of tasks with different **complexity**
 - Simple tasks – common or introductory
 - Moderate tasks
 - Complex tasks – infrequent or for power/extreme users

Example of Good Tasks

- Service/App: Uber
- Simple task: signaling for a ride
 - *Is it a task? Why is it simple?*
- Moderate task: reach out to the driver to get a forgotten object
 - *Is it a task? Why is it moderate?*
- Complex task: become a driver for Uber
 - *Is it a task? Why is it complex?*

Your First Storyboard

- Craft a **simple storyboard** representing a story showing *at least* one of the “good tasks” discussed so far
- To start, define:
 - The context, the actors, the problems/needs they have
 - How you can help solving/satisfying such problems/needs
- Write up a scene-by-scene list of your story
 - First, this happens... then, this... finally, this other thing...
- Make simple sketches of each scene and lay them out on a board
- We will see a few of them before the end of the class
 - E.g., by sharing the result in the Telegram group

References

- Alan Dix, Janet Finlay, Gregory Abowd, Russell Beale: Human Computer Interaction, 3rd Edition, Chapter 15 “Task Analysis”
- David Benyon: Designing Interactive Systems, Chapter 11 “Task Analysis”
- <http://www.usabilitybok.org/task-analysis>
- <https://www.usability.gov/how-to-and-tools/methods/task-analysis.html>

Acknowledgements

- Some icons from <https://icons8.com>
- Some material by
 - <http://www.inf.ed.ac.uk/teaching/courses/hci/0708/lecs/tasks.pdf>
 - https://www.tutorialspoint.com/human_computer_interface/design_process_and_task_analysis.htm
 - <https://www.slideshare.net/alanjohndix/hci-3e-ch-15-task-analysis>
- Most of the slides are adapted from those used in the "Human Computer Interaction" course of Politecnico di Torino
 - <http://bit.ly/polito-hci>





License

- These slides are distributed under a Creative Commons license “**Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0)**”
- **You are free to:**
 - **Share** — copy and redistribute the material in any medium or format
 - **Adapt** — remix, transform, and build upon the material
 - The licensor cannot revoke these freedoms as long as you follow the license terms.
- **Under the following terms:**
 - **Attribution** — You must give [appropriate credit](#), provide a link to the license, and [indicate if changes were made](#). You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.
 - **NonCommercial** — You may not use the material for [commercial purposes](#).
 - **ShareAlike** — If you remix, transform, or build upon the material, you must distribute your contributions under the [same license](#) as the original.
 - **No additional restrictions** — You may not apply legal terms or [technological measures](#) that legally restrict others from doing anything the license permits.
- <https://creativecommons.org/licenses/by-nc-sa/4.0/>

