Unit-1: UI/UX Introduction

UI-UX

Agenda

- UI and UX fundamentals
- Elements of UX – Garett's model
- Role & Responsibility of designers, Client paradox
- UX for beginners (chapters 1, 2)

Pallavi Rao G
Asst. Professor (IT) MPSTME
- Mumbai

UI and UX fundamentals

- UI design – Design elements, Interaction, Prototypes, Animation, Responsiveness

- UX Design – User Personas, User journey, Flows, Storyboarding, Mind mapping, Information Architecture, Usability evaluations

Pallavi Rao G
Asst. Professor (IT) MPSTME
- Mumbai

Difference between UI and UX

The difference between visual polish (UI) and usability (UX) is critical.

A banking app may look sleek but frustrate users if it lacks intuitive flow, showcasing how UI and UX must co-exist.

User engagement

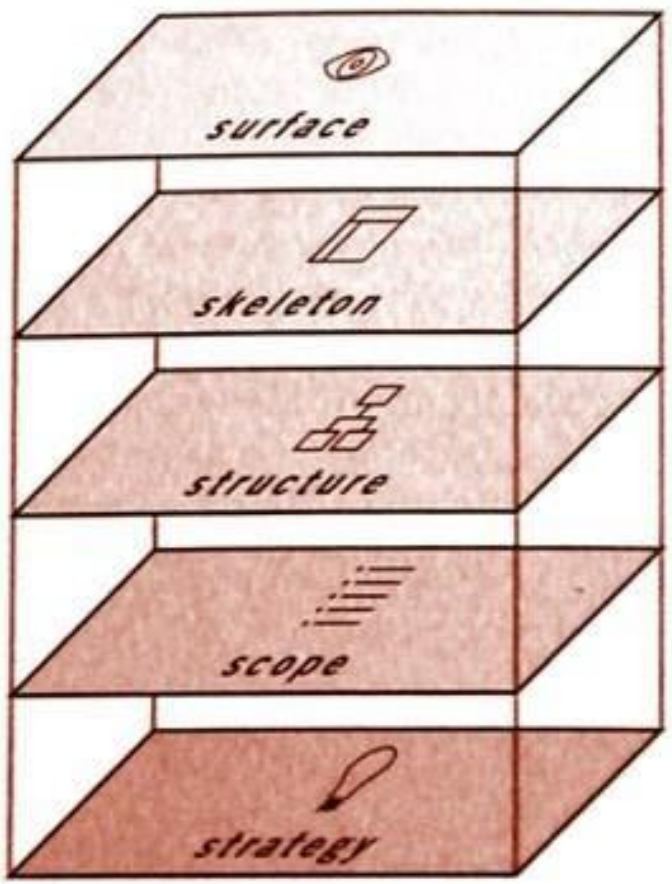
Netflix’s UI elements like
hover previews
and animations

Objective : designed to reduce user effort, supporting how interaction design shapes user engagement.

Design Challenge

- The Netflix slider is no ordinary slider, and offers a lot of functionality when the user hovers over a slide.
- Specifically, it enlarges the hovered slide and pushes the neighbouring items outward.

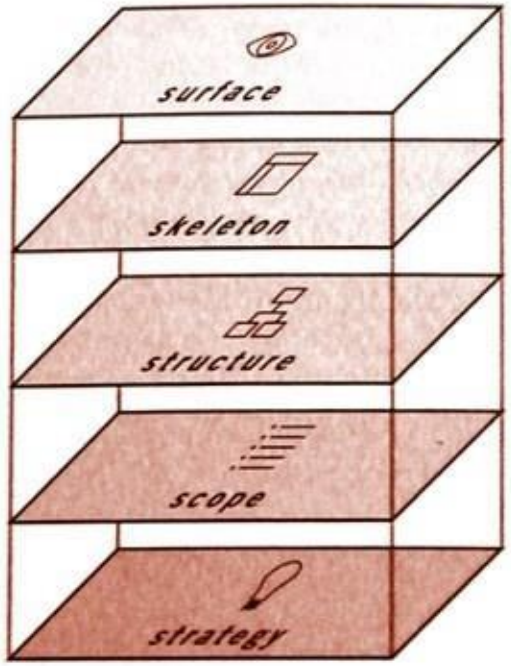
Elements of UX



What is there to design in Interactive products?

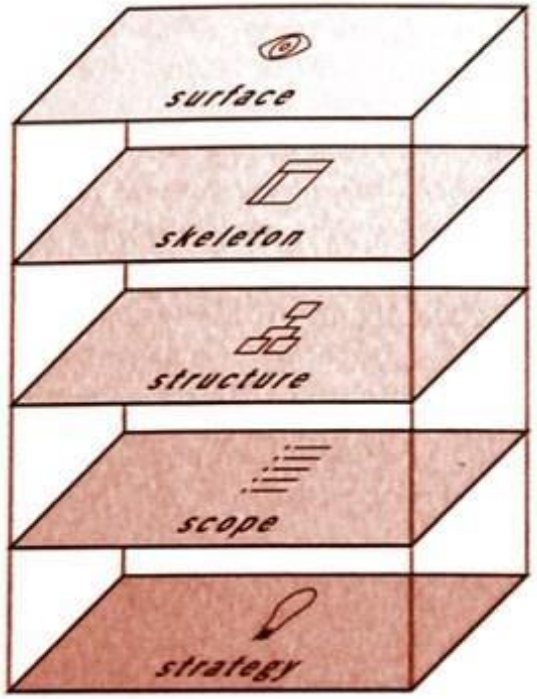
Elements of UX

- Surface
  - Sensory design
    - Visual elements (color, typography, photography, illustrations)
    - Media elements (audio, video, animation)
    - Text



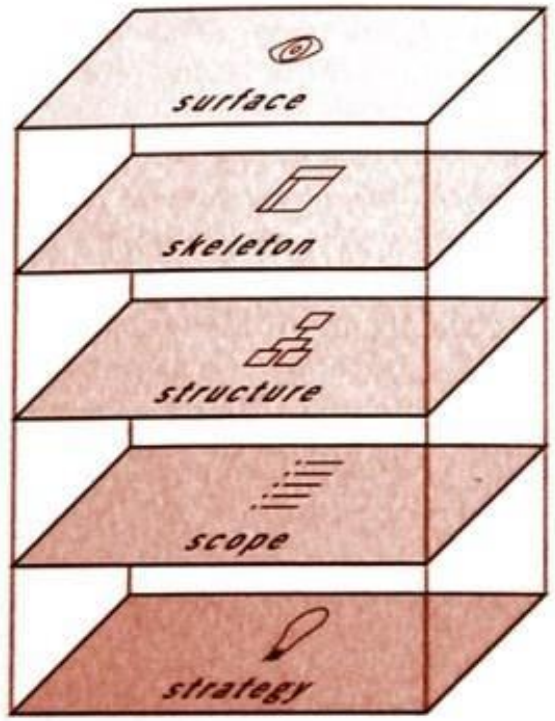
Elements of UX

- Skeleton
  - Interface design
    - Layouts, placements, arrangements
    - Widgets
    - Navigation
  - Interaction techniques
  - Information design
    - Script, labels,
    - Page complexity
    - Visualization
    - Layouts, grid, hierarchy
  - Navigation design
    - Navigation elements
  - *How should the design be detailed*



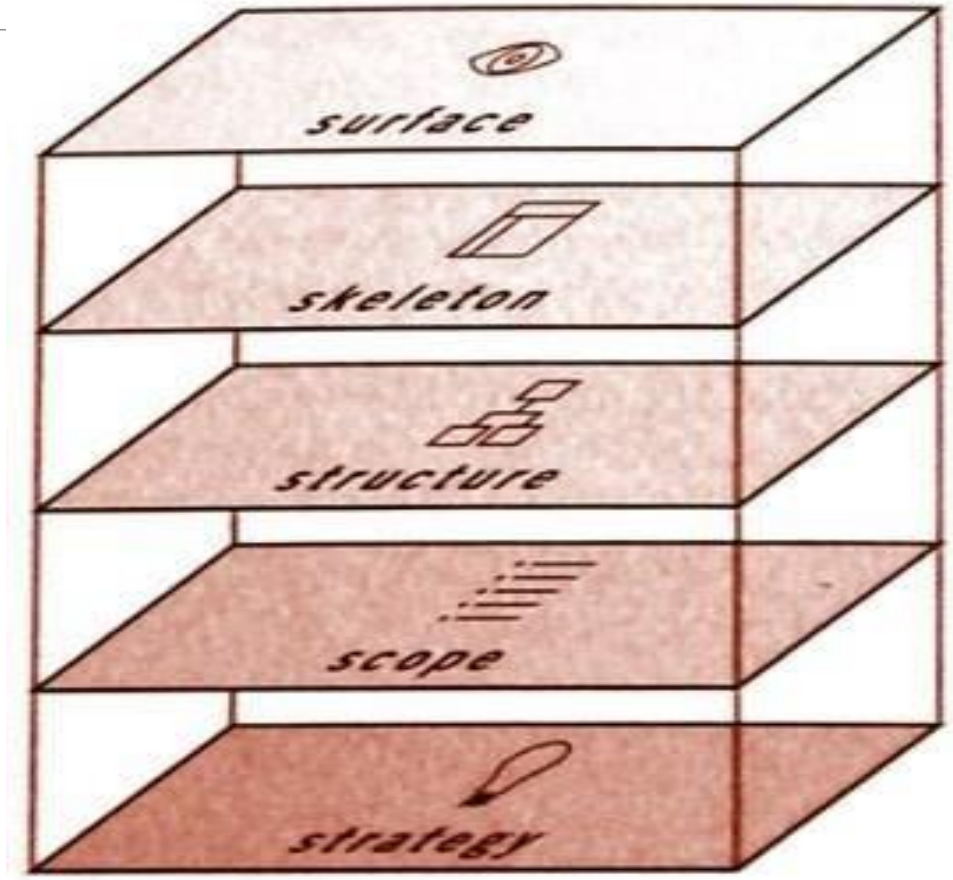
Elements of UX

- Structure
  - Interaction design
    - Conceptual model
    - Scenarios, storyboards, workflow, use cases
  - Information architecture
    - Categories, hierarchy
    - Scenarios, storyboards, workflow, use cases
  - How does the product fit in the life of users?



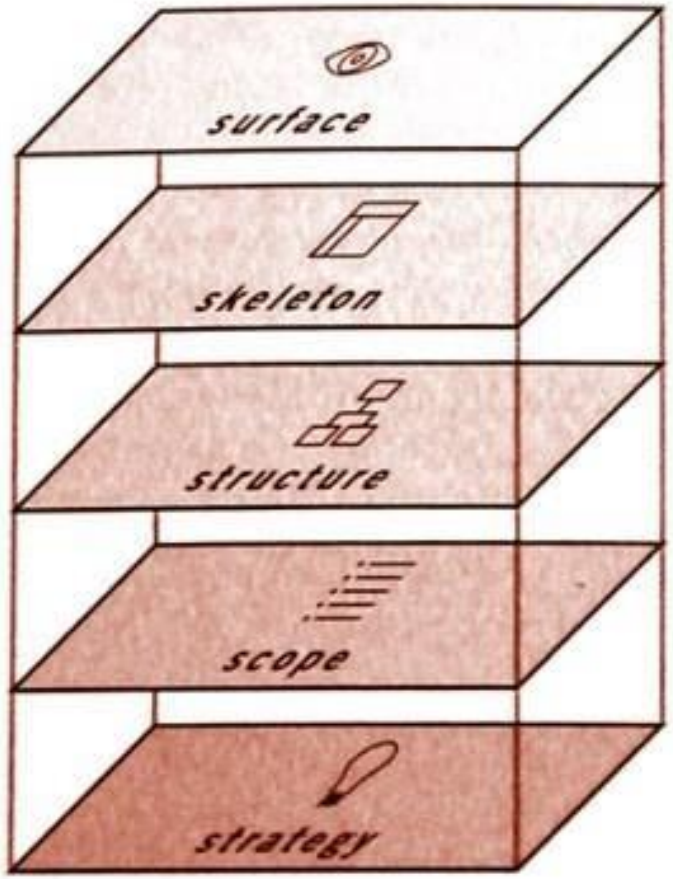
Elements of UX

- Scope
  - Functional specifications
    - Features, functions, services, facilities
    - Timelines, versions
  - Content requirements
    - Content
    - Editorial workflow
    - Content shelf life
    - Timelines, versions
    - *What are we making when?*

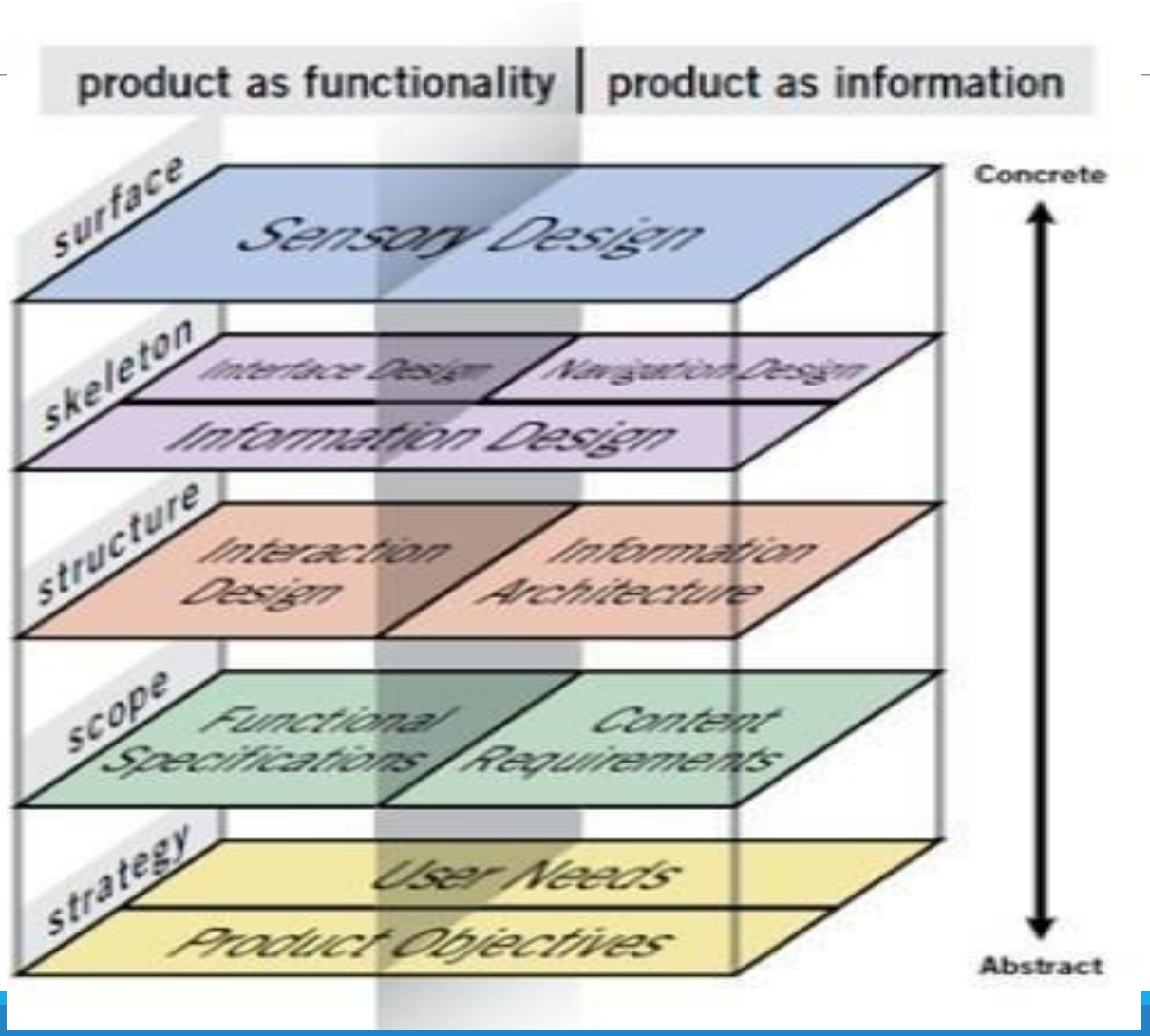


Elements of UX

- Strategy
  - User needs, goals
  - Product objectives
    - Business goals
    - Brand strategies
  - *Why are we making this?*



Elements of UX



Case Study : Amazon

Amazon’s approach to UX scope exemplifies meticulous planning of **features**, **content**, and **user goals** to ensure alignment with both **business objectives** and **user needs**.

Key Points:

•**Feature Definition**: Amazon prioritizes features like 1-click ordering, personalized recommendations, and real-time delivery tracking based on user behavior data and business KPIs (e.g., conversion rate, retention).

•**Content Planning**: Product descriptions, customer reviews, and FAQs are curated to address decision-making needs, enhancing the **content shelf life** and usability.

•**Functional Specifications**: UX teams document the **workflow**, interactions, and technical requirements before development, ensuring clarity across design, engineering, and marketing teams.

•**Version Control & Timelines**: Releases are scoped incrementally (e.g., Prime Early Access, Try Before You Buy) to validate features with A/B testing before full rollout.

Justification in UX Context:

This strategic scoping:

•Reduces feature bloat by prioritizing user-validated functionalities.

•Aligns with **Garrett's "Scope" plane**, where defining *what* is being built precedes *how* it will be built.

•Ensures every feature serves a clear **user goal (e.g., speed, convenience)** and a **business goal (e.g., increased cart size, upselling)**.

The Elements of User Experience

Jesse James Garrett
jjg@jjg.net
30 March 2000

A basic duality: The Web was originally conceived as a hypertextual information space; but the development of increasingly sophisticated front- and back-end technologies has fostered its use as a remote software interface. This dual nature has led to much confusion, as user experience practitioners have attempted to adapt their terminology to cases beyond the scope of its original application. The goal of this document is to define some of these terms within their appropriate contexts, and to clarify the underlying relationships among these various elements.

Web as software interface

Visual Design: graphic treatment of interface elements (the "look" in "look-and-feel")

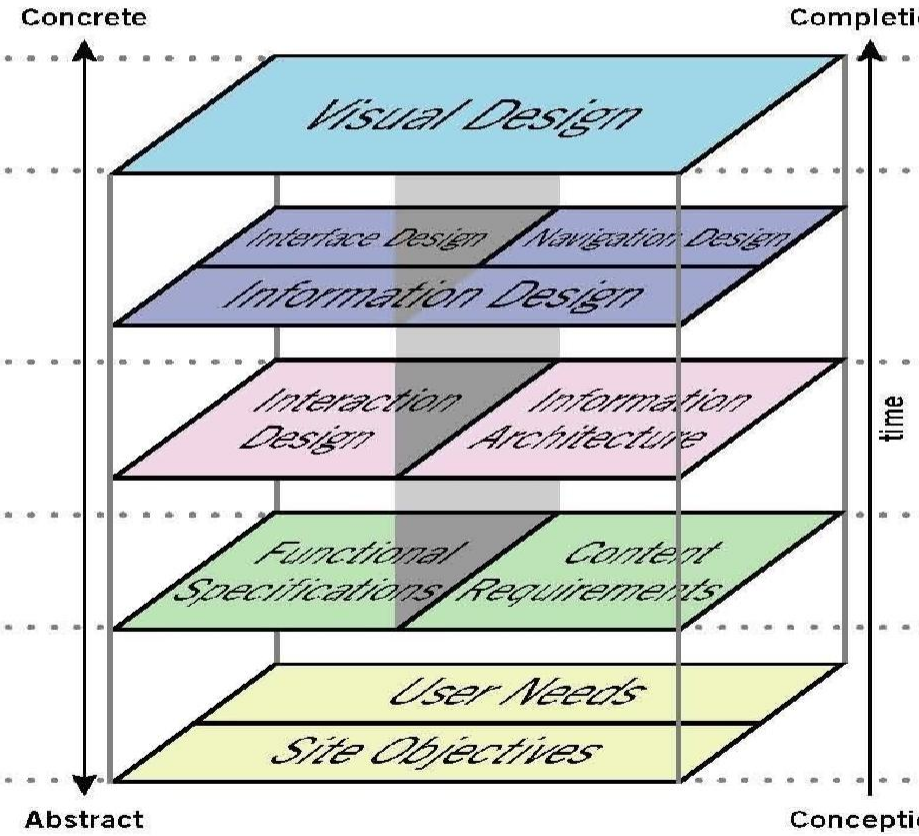
Interface Design: as in traditional HCI: design of interface elements to facilitate user interaction with functionality
Information Design: in the Tuftean sense: designing the presentation of information to facilitate understanding

Interaction Design: development of application flows to facilitate user tasks, defining how the user interacts with site functionality

Functional Specifications: "feature set": detailed descriptions of functionality the site must include in order to meet user needs

User Needs: externally derived goals for the site; identified through user research, ethno/techno/psychographics, etc.
Site Objectives: business, creative, or other internally derived goals for the site

task-oriented



Web as hypertext system

Visual Design: visual treatment of text, graphic page elements and navigational components

Navigation Design: design of interface elements to facilitate the user's movement through the information architecture
Information Design: in the Tuftean sense: designing the presentation of information to facilitate understanding

Information Architecture: structural design of the information space to facilitate intuitive access to content

Content Requirements: definition of content elements required in the site in order to meet user needs

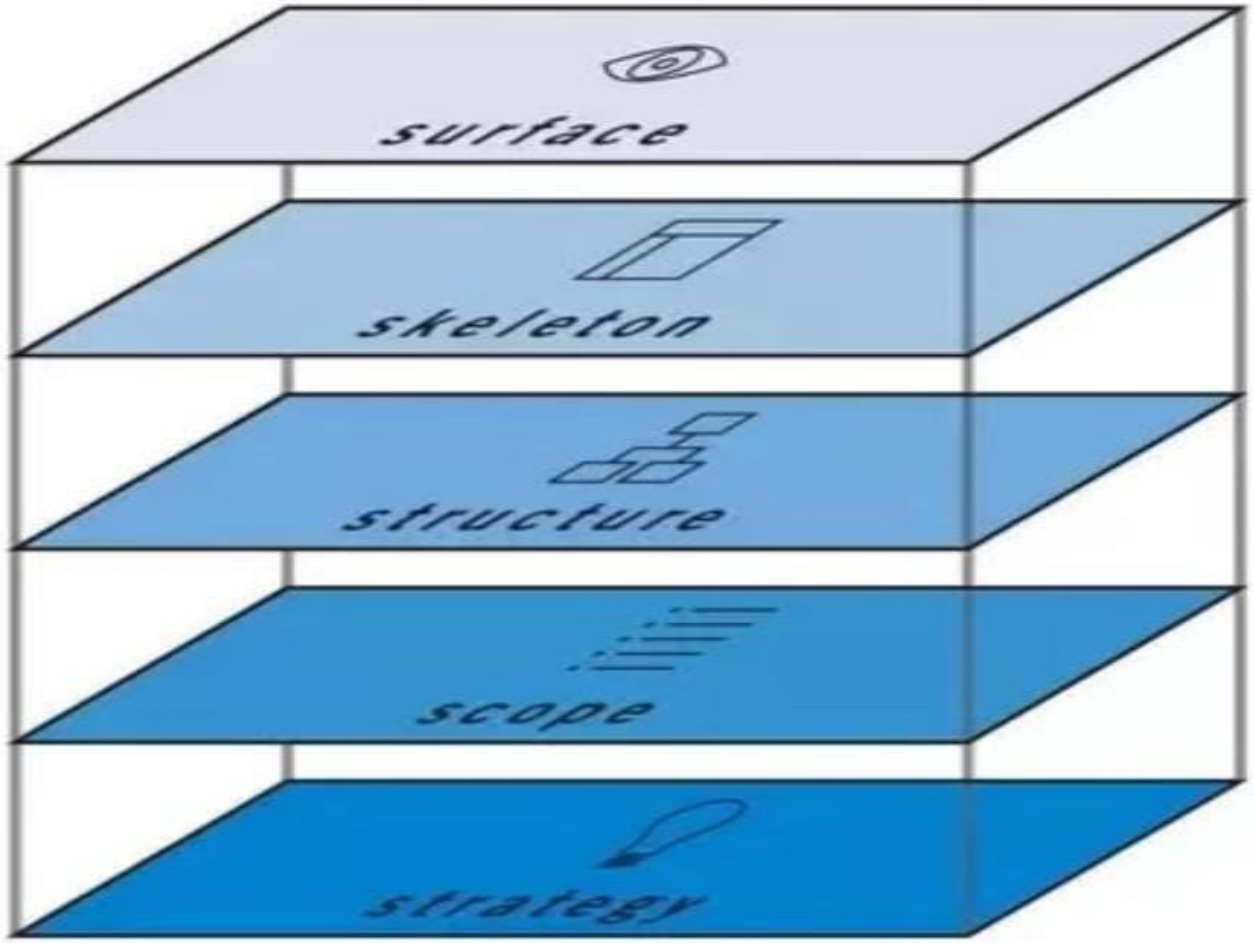
User Needs: externally derived goals for the site; identified through user research, ethno/techno/psychographics, etc.
Site Objectives: business, creative, or other internally derived goals for the site

information-oriented

This picture is incomplete: The model outlined here does not account for secondary considerations (such as those arising during technical or content development) that may influence decisions during user experience development. Also, this model does not describe a development process, nor does it define roles within a user experience development team. Rather, it seeks to define the key considerations that go into the development of user experience on the Web today.

http://www.jjg.net/ia/

Elements of UX



Concrete

Abstract

Surface brings everything together visually: What will the finished product look like?

Skeleton makes structure concrete: What components will enable people to use the site?

Structure gives shape to scope: How will the pieces of the site fit together and behave?

Scope transforms strategy into requirements: What features will the site need to include?

Strategy is where it all begins: What do we want to get out of the site? What do our users want?

Role & Responsibility of Designers

- Design - Planning of a product's interaction with people
- Good design – transparent, delightful, helpful
- Bad design – collide with human behaviours and cause undesired friction
- *Badly designed products serve their creator (or sponsor) first and the users second.*
- Designers are gate keepers of technology

Pallavi Rao G
Asst. Professor (IT) MPSTME
- Mumbai

The Client Paradox?

- Paradox –
- designers aren’t always in charge, they get paid by a client that has a vision, business needs, objectives, etc., and not by the users that will end up using the design

Pallavi Rao G
Asst. Professor (IT) MPSTME - Mumbai

What Is An Experience?

There are probably many, endless conversations we could have about a philosophical "experience," but I am not qualified to teach you philosophy, so I won't. In UX, we need practical answers.

There are six big parts of an experience discussed throughout this book:

1. What the user *feels*

   In UX forums, this is what inexperienced designers talk about most. Making the user "happy." Asking them what they "like." Making users say "wow!" Users have feelings, and they are useful, but they are only a small fraction of an experience. The good things about feelings are that we can see them on a user's face, users can tell us about them, we can measure them, and we can relate to them, so feelings are easy to study.

2. What the user *wants*

   Much more important, but not as easy for the user to describe. A user's motivations are the engine of their behavior. Everything they do, click, choose, buy, and even what they see and hear depends on what they want. "When you're a hammer, everything looks like a nail." And if you change the way they see the situation, sometimes they will want something different.

3. What the user *thinks*

   It is helpful to imagine "thinking" as something the user carries, like bricks. Psychologists might call it *cognitive load*. Every time you make a user figure something out, or read more than a sentence of instructions, or learn a new feature, or hunt for the right link, or do two things at once, you're giving them another brick to carry. Most people can only carry a few bricks at a time. If you give them too many, they will drop everything.

LESSON 1

What Is UX?

The best place to start any education is at the beginning.

Everything has a user experience. Your job is not to create the user experience. Your job is to make it good.

And what do I mean by "good" user experience? It is common to think that a good user experience is one that makes users happy.

Not true!

If happiness was your only goal, you could just throw in some *Lolcats* and random *compliments* and go home. But—although that's not the worst universe I can imagine—your boss may not be satisfied with the results. The goal of a UX designer is to make users effective.

A user's experience is just the tip of the iceberg:

Many people mistakenly think that "UX" means a *user's experience*, but it is actually about "doing" the process of User Experience Design. A user's individual experience is their conscious, subjective opinion of your app or site. User feedback is important—sometimes—but UX designers need to do a lot more than that.

"Doing" UX

UX Design (also sometimes called UXD) involves a process very *similar to doing science*: you do research to understand the users, you develop ideas to solve the users' needs—and the needs of the business—and you build and measure those solutions in the real world to see if they work.

You will learn about all of that in this book. Or if that's not your deal, Lolcats are still an option.

LESSON 2

The Five Main Ingredients of UX

User Experience design is a process, and these lessons roughly follow that process, but you should always keep these five things in mind: *Psychology*, *Usability*, *Design*, *Copywriting*, and *Analysis*.

Any one of these five ingredients could be a book of its own, so I will be oversimplifying a bit. This is supposed to be a crash course, not Wikipedia.

Although, to be fair, I'm pretty sure *Wikipedia's UX page* was written by a guy who heard about UX once... at that thing... that time...

1. Psychology

   A user's mind is complex. You should know; you have one, (I assume). UXers work with subjective thoughts and feelings a lot; they can make or break your results. And the designer must ignore their own psychology sometimes, too, and that's hard!

Ask yourself:

- What is the user's motivation to be here in the first place?
- How does this make them feel?
- How much work does the user have to do to get what they want?
- What habits are created if they do this over and over?
- What do they expect when they click this?
- Are you assuming they know something that they haven't learned yet?
- Is this something they want to do again? Why? How often?
- Are you thinking of the user's wants and needs, or your own?
- How are you rewarding good behavior?

2. Usability

If user psychology is mostly subconscious, usability is mostly conscious. You know when something is confusing. There are cases where it is more fun if something is hard—like a game—but for everything else, we want it to be so easy that even a (moron) could use it.

Ask yourself:

- Could you get the job done with less input from the user?
- Are there any user mistakes you could prevent? (Hint: Yes, there are.)
- Are you being clear and direct, or is this a little too clever?
- Is it easy to find (good), hard to miss (better), or subconsciously expected (best)?
- Are you working with the user's assumptions or against them?
- Have you provided everything the user needs to know?
- Could you solve this just as well by doing something more common?
- Are you basing your decisions on your own logic or categories, or the user's intuition? How do you know?
- If the user doesn't read the fine print, does it still work/make sense?

3. Design

As the UX designer, your definition of "design" will be much less artistic than a lot of designers. Whether you "like it" is irrelevant. In UX, design is how it works, and it's something you can prove; it's not a matter of style.

Ask yourself:

- Do users think it looks good? Do they trust it immediately?
- Does it communicate the purpose and function without words?
- Does it represent the brand? Does it all feel like the same site?
- Does the design lead the user's eyes to the right places? How do you know?
- Do the colors, shapes, and typography help people find what they want and improve usability of the details?
- Do clickable things look different than nonclickable things?

4. Copywriting

There is a huge difference between writing brand copy (text) and writing UX copy. Brand copy supports the image and values of the company. UX copy gets shit done as directly and simply as possible.

Ask yourself:

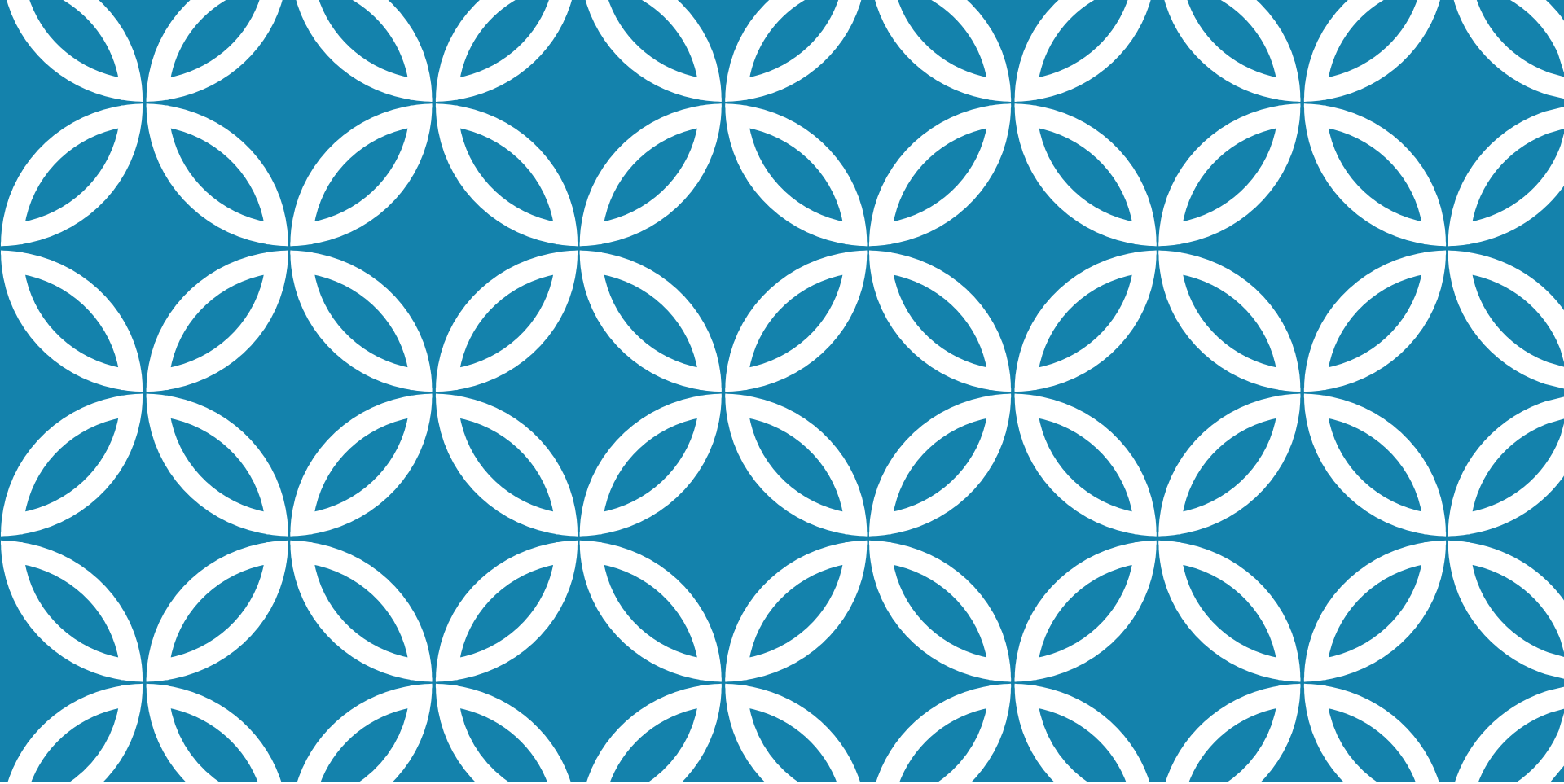
- Does it sound confident and tell the user what to do?
- Does it motivate the user to complete their goal? Is that what we want?
- Is the biggest text the most important text? Why not?
- Does it inform the user or does it assume that they already understand?
- Does it reduce anxiety?
- Is it clear, direct, simple, and functional?

5. Analysis

In my opinion, most designers' weak spot is analysis. But we can fix that! Analysis is the main thing that separates UX from other types of design, and it makes you extremely valuable. It literally pays to be good at it.

So, ask yourself:

- Are you using data to prove that you are right, or to learn the truth?
- Are you looking for subjective opinions or objective facts?
- Have you collected information that can give you those types of answers?
- Do you know why users do that, or are you interpreting their behavior?
- Are you looking at absolute numbers, or relative improvements?
- How will you measure this? Are you measuring the right things?
- Are you looking for bad results, too? Why not?
- How can you use this analysis to make improvements?



UNDERSTANDING USER JOURNEY & JOURNEY MAPPING

Presented by: Dr. Ruchi Kaushal

WHAT IS A USER JOURNEY?

- Full path a user takes to complete a task using a product/service.

- Includes actions, thoughts, emotions, goals, and expectations.

- Extends before and after product interaction.

USER JOURNEY EXAMPLE

- Searches 'best AI course online'.
- Browses platforms and compares reviews.
- Creates an account on selected platform.
- Completes payment using UPI.
- Begins accessing the course.

WHAT IS A JOURNEY MAP?

- Visualizes a user journey over time and across platforms.

- Includes goals, actions, emotions, pain points, and opportunities.

- Aligns design with real user behavior.

ELEMENTS OF A JOURNEY MAP

- **Persona** – Who the user is.
- **Scenario** – The user's goal or problem.
- **Phases** – Journey stages (e.g., discovery, usage).
- **Touchpoints** – Interaction channels.
- **Emotions** – Feelings across the journey.
- **Pain Points** – Barriers to success.
- **Opportunities** – Areas to improve UX.

CREATE JOURNEY MAP FOR :

Ordering a custom birthday gift online.

CLASSROOM ACTIVITY – MAP THE JOURNEY

- Scenario: Ordering a custom birthday gift online.
- Step 1: Define persona (e.g., Smita, 29, gift enthusiast).
- Step 2: Goal – Deliver gift on time.
- Step 3: Journey phases – Discover, Browse, Customize, Pay, Track.
- Step 4: Document emotions, actions, pain points.
- Step 5: Use Miro/sticky notes.
- Step 6: Present and discuss UX improvements.

CASE STUDY

Sketch Journey Map and Pain Points for Food Delivery App

CASE EXAMPLE – FOOD DELIVERY APP

- Ad click: Pain – Not clickable → Add deep link.

- Menu browsing: Pain – Overwhelmed → Add filters.

- Order entry: Pain – Address form → Enable GPS autofill.

- Tracking: Pain –Add live tracker.

- Delivery: Happy → Ask for feedback.

CASE STUDY – ONLINE LEARNING PLATFORM

- Persona: Maya, 34, IT professional.
- Problem: Flexible learning option.
- Payment failed → No UPI support.
- Fix: Add UPI and wallet integration.
- Result: 30% fewer dropouts.

USER JOURNEY VS JOURNEY MAP – KEY DIFFERENCES

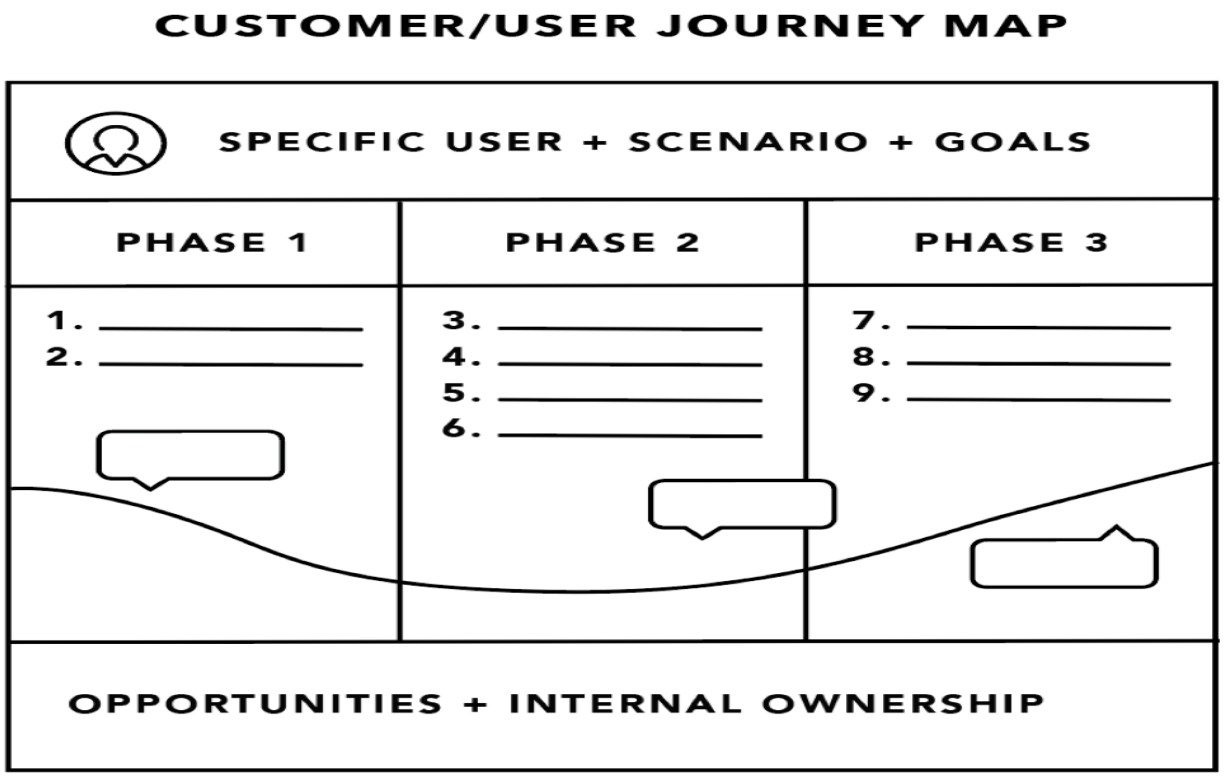
- Journey: Step-by-step story.
- Map: Breaks down each step visually.
- Journey = What; Map = How, Why, Feelings.

QUESTIONS & DISCUSSION

- Think of an app you recently used.
- What parts were confusing or delightful?
- How would you redesign that journey?

JOURNEY MAP

Definition: A **journey map** is a visualization of the process that a person goes through in order to accomplish a goal.



TYPES OF JOURNEY MAPS

- **Experience Map**: General, not tied to one product or persona.

- **Customer Journey Map**: Specific to product/service and user goal.

- **Service Blueprint**: Includes internal systems and processes.

JOURNEY MAPPING PROCESS (ESSENTIALS)

- 1. Define user and scenario clearly.
- 2. Conduct qualitative and quantitative research.
- 3. Document phases, touchpoints, emotions.
- 4. Identify recurring patterns and friction points.
- 5. Visualize, validate, and iterate collaboratively.

THEORETICAL FOUNDATIONS

- Activity-Centered Design: Focus on task workflows.

- Affective Design: Emotional resonance in UI.

- Affordance Theory: Design that suggests its use.

SUPPORTING UX THEORIES

- Empathic Design: Observe real user behavior contextually.

- Aesthetic–Usability Effect: Beauty improves perceived usability.

ELEMENTS OF JOURNEY MAP

journey maps have the following key elements in common:

Actor

The actor is thepersonaor user who experiences the journey. The actor is who the journey map is about —a point of view. Actors usually align with personas and their actions in the map are rooted in data.

Provide one point of view per map in order to build a strong, clear narrative. For example, a university might choose either a student or a faculty member as actor —each would result in different journeys. (To capture both viewpoints, the university willneed to build two separate maps, one for each of the two user types.)

Scenario + Expectations

The scenario describes the situation that the journey map addresses and is associated with an actor's goal or need and specific expectations. For example, one scenario could be switching mobile plans to save money, and expectations for it include to easilyfind all the information needed to make a decision.

Scenarios can be real (for existing products and services) or anticipated —for products that are yet in the design stage.

Journey maps are best for scenarios that involve a sequence of events (such as shopping or taking a trip), describe a process(thus involve a set of transitions over time)

JOURNEY MAPS IN UX PROCESS

- Bridge between research and prototyping.
- Encourages user-centric collaboration.
- Aligns business and user goals.

BENEFITS OF JOURNEY MAPPING

- Fosters user empathy within teams.
- Uncovers UX pain points.
- Reveals design opportunities and competitive advantages.

COMMON MISTAKES IN JOURNEY MAPPING

- Mapping based on assumptions, not research.

- Overlooking emotional aspects.

- Making the map too complex or too generic.

- Skipping iterations or updates.

JOURNEY MAPPING TOOLS

- Miro: Collaborative online whiteboard.

- UXPressia: Templates, personas, journey mapping tools.

- Lucidchart: Visual diagrams with flowchart logic.

JOURNEY MAP VALIDATION TECHNIQUES

- Conduct user interviews and surveys.
- Cross-check with web/app analytics.
- Review and iterate with team feedback.

UNDERSTANDING TOUCHPOINTS

- Touchpoints include website, app, customer support, ads.

- Every touchpoint should be intentional and user-friendly.

- Consistent design builds trust and satisfaction.

EMOTIONAL MAPPING IN JOURNEY MAPS

- Track user emotion at each stage: joy, frustration, confusion.

- Use mood graphs or emoji curves.

- Fix low points, amplify positive moments.

CROSS-CHANNEL JOURNEY MAPPING

- Users often shift across devices (mobile, desktop, in-store).
- Map the full omnichannel experience.
- Ensure design consistency across platforms.

STAKEHOLDER INVOLVEMENT

- Include product, marketing, support, design teams.

- Gather diverse perspectives for complete mapping.

- Improves collaboration and ownership.

ACCESSIBILITY IN USER JOURNEY

- Design for users with visual, auditory, cognitive, and motor impairments.

- Test with screen readers, contrast checkers, keyboard nav.

- Inclusive design broadens usability.

JOURNEY MAPPING IN AGILE UX

- Use maps to support sprint planning.

- Tie user stories to specific journey phases.

- Adapt maps over iterations and releases.

PERSONA INTEGRATION IN JOURNEY MAPS

- Different personas have unique goals and paths.
- Mapping each ensures inclusive design.
- Supports role-based customization.

ADVANCED JOURNEY MAP LAYERS

- Frontstage: What users see and interact with.

- Backstage: Internal systems supporting those interactions.

- Used in service blueprints to align teams.

29. JOURNEY MAPS FOR PRODUCT STRATEGY

- Transform pain points into roadmap features.

- Align product goals with user goals.

- Prioritize fixes and features that impact user flow.

30. WRAP-UP & RESOURCES

- Journey mapping is a core UX method.

- Use it to build empathy, fix problems, and guide strategy.

- Resources: interaction-design.org, nngroup.com, uxplanet.org

- Assignment: Choose a product and map its user journey.

FINAL TAKEAWAYS

- Maps help uncover the real user experience.

- Enable design decisions rooted in empathy.

- Support meaningful improvements and alignment.

UI Design: Modalities and Visual Elements

What is User Interface (UI) Design?

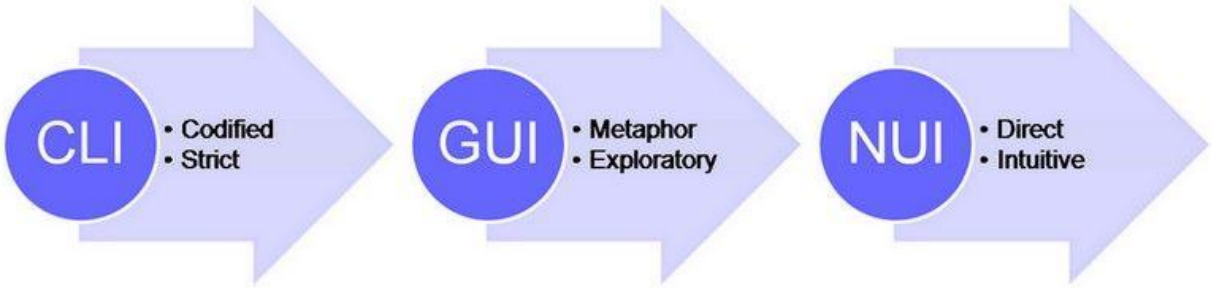
- Focus on looks, style, and responsiveness
- Bridges user interaction with technology
- Works alongside UX but emphasizes visuals
- Involves screens, buttons, icons
- Improves intuitiveness and satisfaction

Modality

Modality Is the One UX Concept That Most Designers Don’t Fully Understand …..

Different Modalities in UI Design

- Modalities refer to the ways users interact with digital systems.
- Common UI modalities:
  - Graphical User Interfaces (GUI)
  - Voice User Interfaces (VUI)
  - Gesture-Based Interfaces
- Each modality addresses different user needs and contexts.



Natural User Interface --things in the ‘digital world’ behave as they do in the ‘analogue world’.

Graphical User Interfaces (GUI)

- Interaction via visual components
- Examples: desktop apps, websites
- Uses icons, menus, buttons
- Touch or mouse-based control
- Highly discoverable and visual

Case Study: GUI – WhatsApp

- Tabs: Chats, Status, Calls
- Icons: Mic, Emoji, Camera
- • Green denotes active or call state
- Consistent visual feedback

Advantages of GUI

- Easy to learn
- Visual feedback is immediate
- Rich layout options
- Supports multitasking
- Familiar design patterns

Limitations of GUI

- Needs visual focus
- May cause clutter
- Accessibility challenges
- Screen-size constraints
- Requires physical input

Voice-Controlled Interfaces (VUI)

- Uses speech to interact
- Popular in smart devices
- No need for screens
- Linear and contextual
- Examples: Alexa, Siri

Use Case: Voice UI in Smart Homes

- “Turn on lights” command
- System gives audio reply
- Great for hands-free control
- Reduces physical effort
- Ideal for home automation

Advantages of VUI

- Natural communication
- Hands-free & eyes-free
- Inclusive for blind users
- Speeds up task flow
- Growing ecosystem

Limitations of VUI

- Noise affects performance
- Struggles with accents
- No visual confirmation
- Can’t handle complex tasks well
- Privacy issues

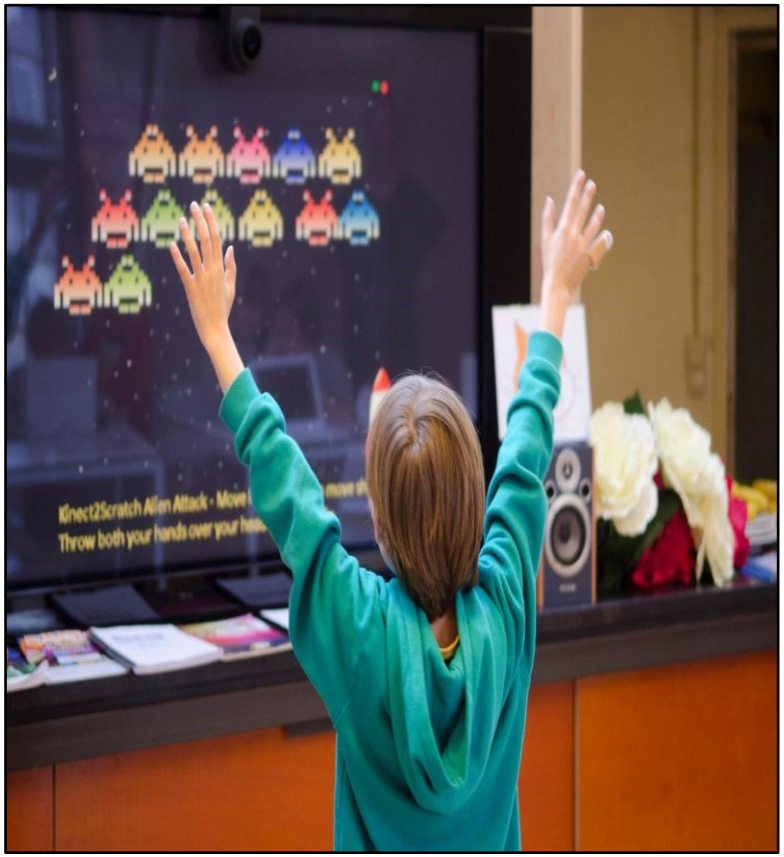
Gesture-Based Interfaces

- Interact using body movement
- Found in AR/VR and gaming
- Uses touch or motion
- No physical controls
- Spatial interaction

Use Case: Gesture UI in Gaming

- Wii/Kinect detect motion
- Swing = action
- Promotes active gaming
- Immersive user experience
- No joystick needed

Example



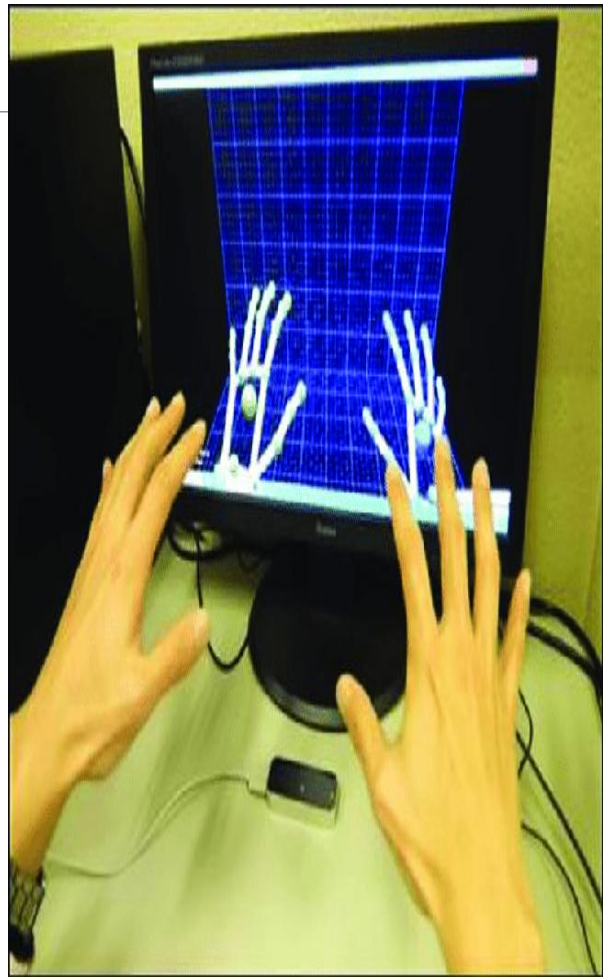
Microsoft's Kinect console senses the users' motion, allowing them to interact with content on the screen via movements. The interaction is not close to the screen, but it responds in real time and follows the motions of the user.

Benefits of Gesture Interfaces

- Natural interaction
- Engaging for users
- Great for physical training
- No need for hardware
- High immersion

Challenges in Gesture Interfaces

- Needs tracking accuracy
- User fatigue is common
- Complex to learn
- Sensitive to space/noise
- Not always intuitive



Visual Elements in UI Design

- Key to usability
- Affects visual appeal
- Includes color, contrast, spacing
- Reduces cognitive load
- Enhances navigation

Colour in UI Design

- Evokes emotions
- Red = alert; Blue = calm
- Green = success
- Influences decisions
- Brand consistency

Red vs Blue for Action Buttons

- Red = delete or stop
- Blue = confirm, submit
- Color guides action
- Must match context!!
- Examples: Google, Amazon

Contrast and Accessibility

- Ensures text readability
- WCAG ratio: 4.5:1 minimum
- Aids colorblind users
- White-on-black is common
- Use tools for checking

Netflix Dark Theme UI

- Reduces eye strain
- Highlights visuals
- Black background = cinematic
- Focused UX
- Preferred for binge-watching

White Space in UI

- Also called negative space
- Separates content clearly
- Prevents clutter
- Adds elegance
- Aids focus

Apple Product Pages

- Minimalistic layout
- High image focus
- Clean typography
- Luxury impression
- Simplifies navigation

Visual Hierarchy in UI

- Guides user attention
- Shows importance of elements
- Uses contrast, size, layout
- Key for scanning
- Aids quick decisions

Techniques for Hierarchy

- Size matters: bigger = priority
- Color draws attention
- Grouping adds clarity
- Alignment indicates flow
- Motion can direct focus

Amazon Product Page Layout

- Big product image
- Bold “Add to Cart”
- Clear price display
- Tabs: specs, reviews
- Structured hierarchy

How Modality Impacts UX Design

- Each modality shapes how users experience a product.
- GUI offers visual structure and discoverability.
- VUI supports hands-free control and natural communication.
- Gesture interfaces enhance immersion and intuitiveness.
- Poor modality choice leads to frustration or exclusion.

How Modality Impacts UX Design (2/2)

- Accessibility: VUI helps users with visual impairments.
- Context of use: Gesture works well in gaming; not for data entry.
- Speed and feedback: GUI gives visual cues; VUI needs confirmations.
- Multimodal designs can reduce errors and increase satisfaction.
- Choosing the right modality enhances efficiency and engagement.

How to Choose the Right Modality

- Consider user needs: Are they special users ? Multitasking?
- Analyze context: Is the system used in motion, at home, or on the go?
- Evaluate task complexity: GUIs work better for multi-step tasks.
- Determine device constraints: Screenless = VUI; AR = gestures.
- Match modality with user behavior and preferences.

Combining Modalities and Visuals

- Smartwatches use touch + voice
- Multimodal = flexibility
- Supports various contexts
- Improves accessibility
- Enables fallback options

Case Study: Tesla Automotive UI

- Central touchscreen UI
- Voice for controls
- Map & music in one screen
- Simple dashboard layout
- Safety-enhancing design

Future Trends in UI

- AR/VR interfaces
- Haptic feedback
- Adaptive UIs
- AI-driven personalization
- Neural input tech

Summary & Key Takeaways

- Modalities: GUI, VUI, Gesture
- Visuals: color, contrast, spacing
- Accessibility is critical
- Design impacts engagement
- Stay user-centered

Class Activity

- Pick an app
- Identify UI modality
- Evaluate its color & hierarchy
- Spot one pain point
- Propose a design improvement

Modal vs Non-Modal Interfaces

Introduction to Modes in UI Design

- A mode is a state where the same input has different effects.
- Modal UI restricts actions until task is done.
- Non-modal UI allows seamless interactions.
- Helps prevent usability errors.

What is a Modal Interface?

- Restricts user to a single task.
- Example: MS Word asking to save before closing.
- Ensures critical actions are completed first.

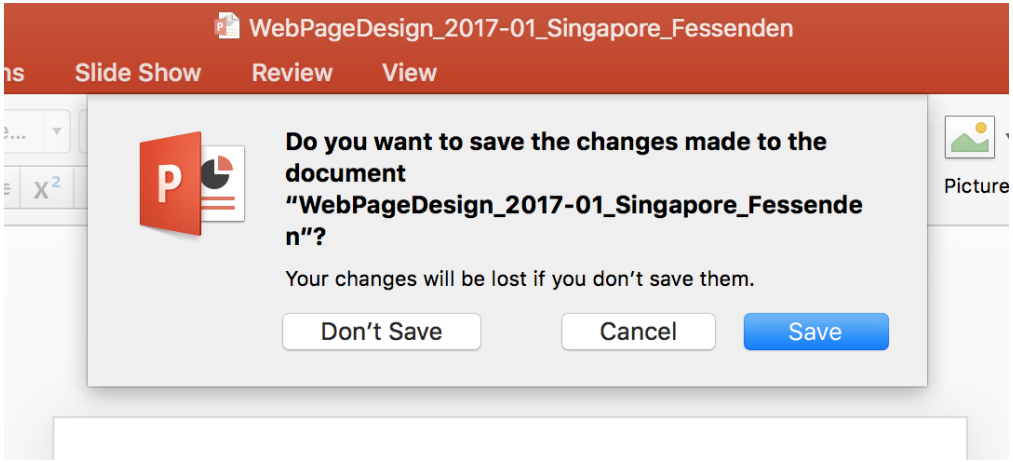
Modal dialog: A dialog that appears on top of the main content and moves the system into a special mode requiring user interaction. This dialog disables the main content until the user explicitly interacts with the modal dialog.

Characteristics of Modal Interfaces

- Locks background interaction.
- Draws user attention.
- Used for warnings, confirmations.
- Example: Online banking timeout pop-up.

Examples of Modal Interfaces

- Delete confirmation box.
- Login dialogs.
- File download prompts.
- Example: Gmail send without subject alert.



Advantages of Modal Interfaces

- Ensures important actions are acknowledged.
- Reduces errors.
- Keeps users focused.
- Example: Confirming payment details.

Limitations of Modal Interfaces

- Breaks workflow.
- May cause frustration.
- Poor accessibility.
- Example: Error popup blocking field view.

What is a Non-Modal Interface?

- Allows multitasking.
- Doesn't force immediate response.
- Example: Google Docs comment panel open during edit.

Nonmodal (or **modeless**) dialogs and windows do not disable the main content: showing the dialog box doesn't change the functionality of the user interface.

The user can continue interacting with the main content (and perhaps even move the window, minimize it, etc.) while the dialog is open.

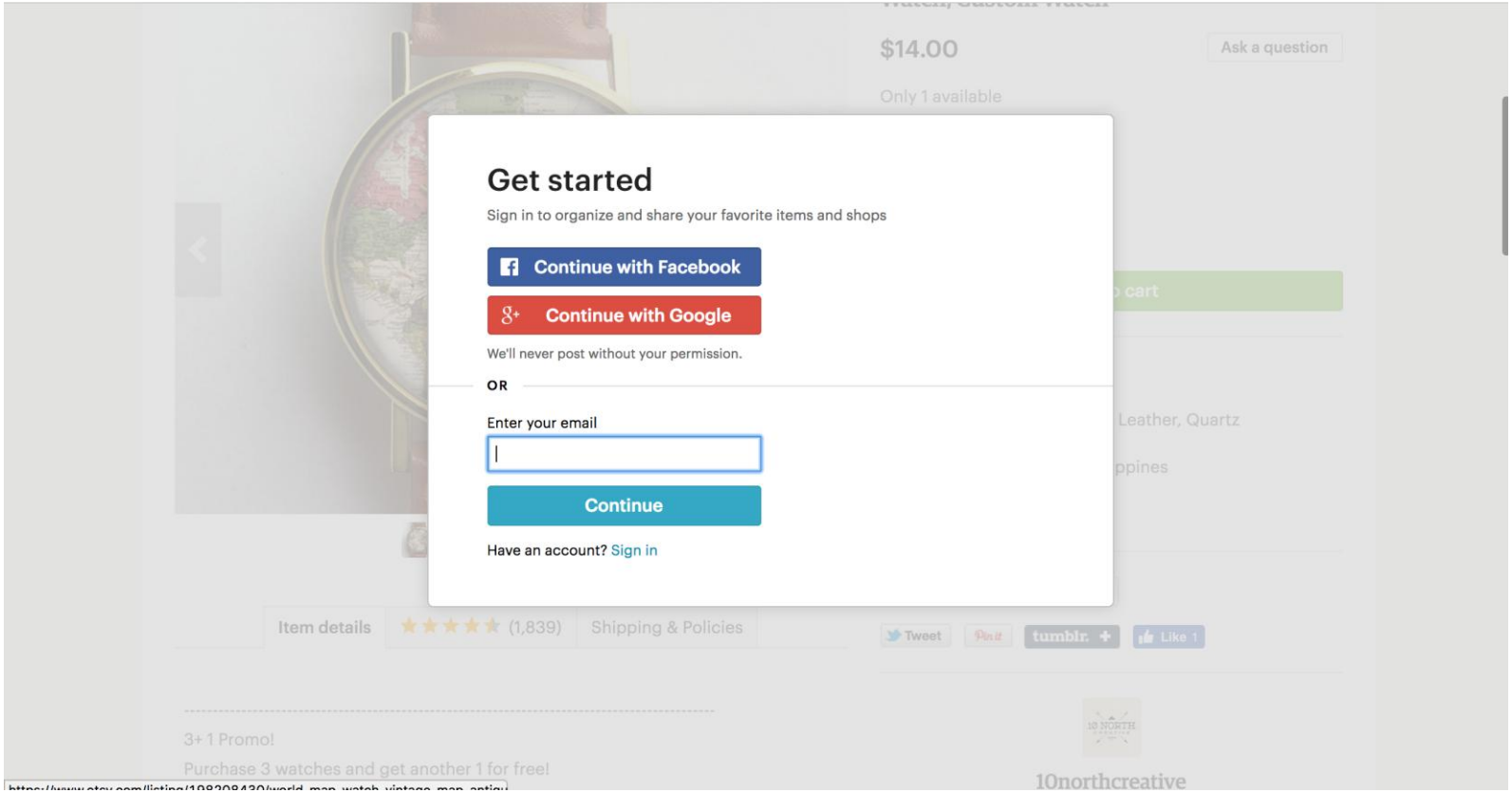
Characteristics of Non-Modal Interfaces

- Persistent but non-blocking.
- Supports background tasks.
- Example: Slack allows message drafts while chatting.

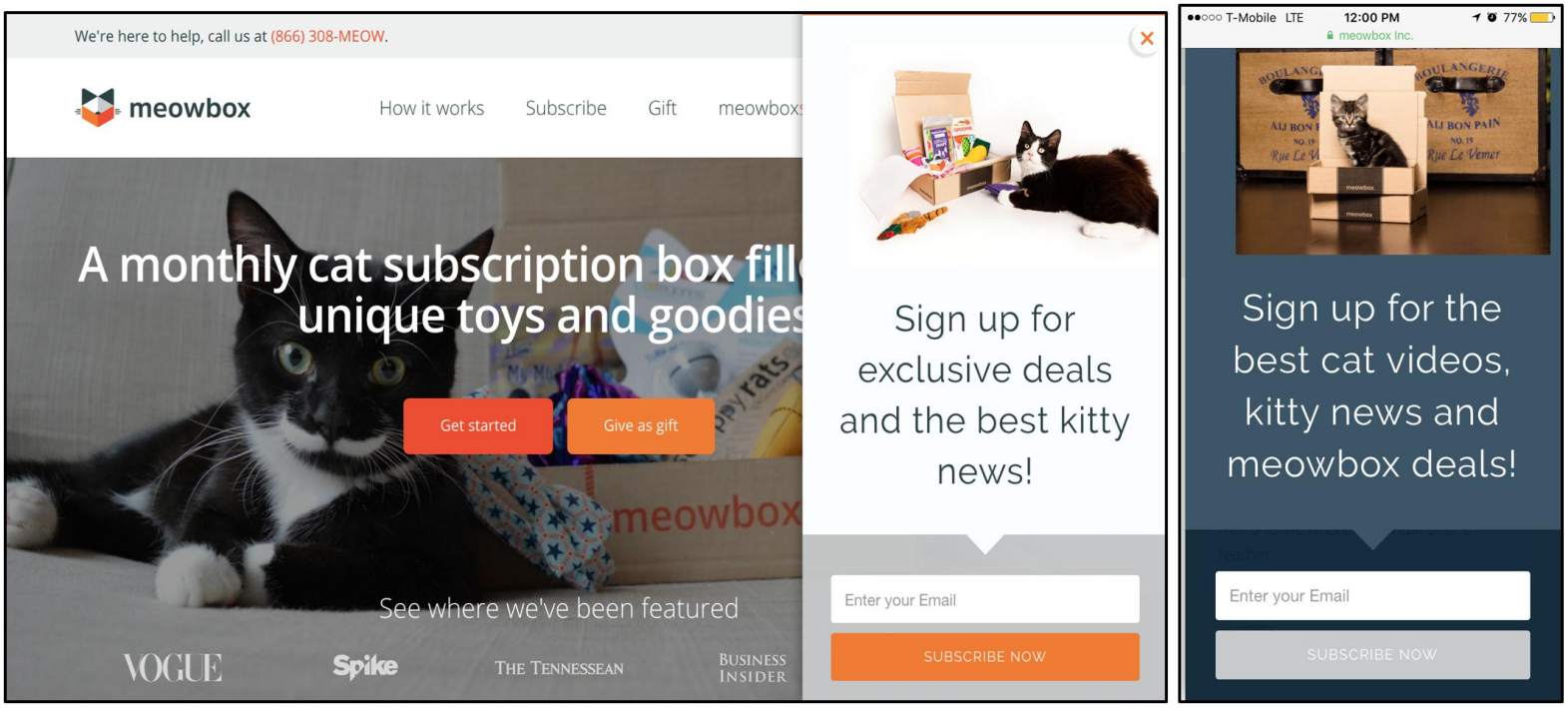
Examples of Non-Modal Interfaces

- Notification banners.
- Floating toolbars.
- In-app help widgets.
- Example: Google Calendar event editor.

Modal –to enter critical information



Non Modal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Gift
A monthly cat subscription box fill
unique toys and goodies
Get started
Give as gift
See where we've been featured
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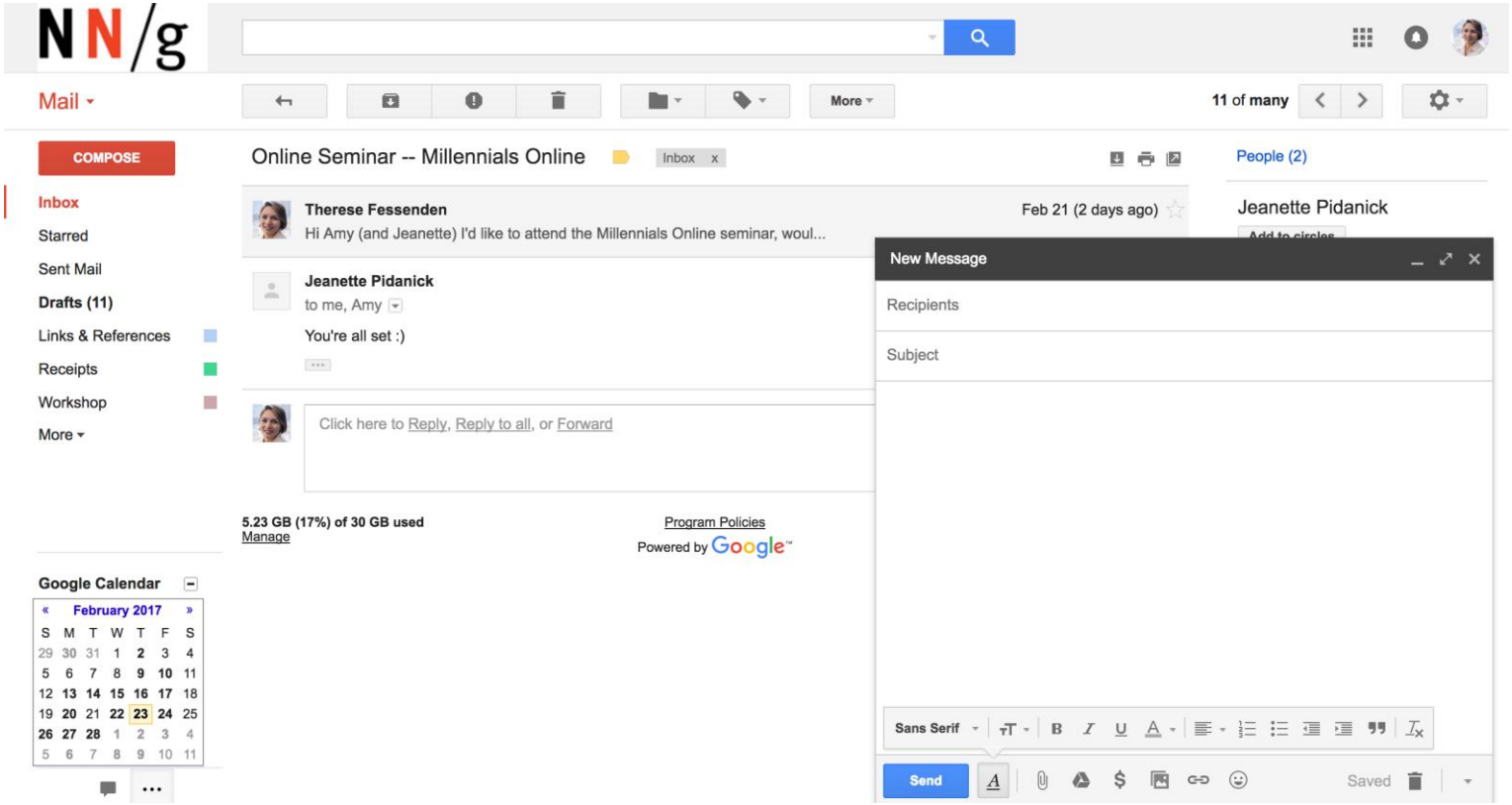
meowbox Inc.
Sign up for the best cat videos, kitty news and meowbox deals!
Enter your Email
SUBSCRIBE NOW

Advantages of Non-Modal Interfaces

- Maintains task flow.
- Supports multitasking.
- Encourages autonomy.
- Example: Microsoft Teams parallel workflows.

Google Mail uses nonmodal windows as the default method for composing new email messages. Users can continue working with this window open, minimize the composed email without losing it (or optionally, maximize it into a modal window). This separate view allows users to locate older emails or additional information that might be helpful for composing the current email.



Limitations of Non-Modal Interfaces

- May be overlooked.
- Clutter risk.
- Higher cognitive load.
- Example: Missed ‘Auto Save Failed’ alert.

Modal vs Non-Modal Comparison

Modal:

- Limited control
- Task interruption
- High visibility

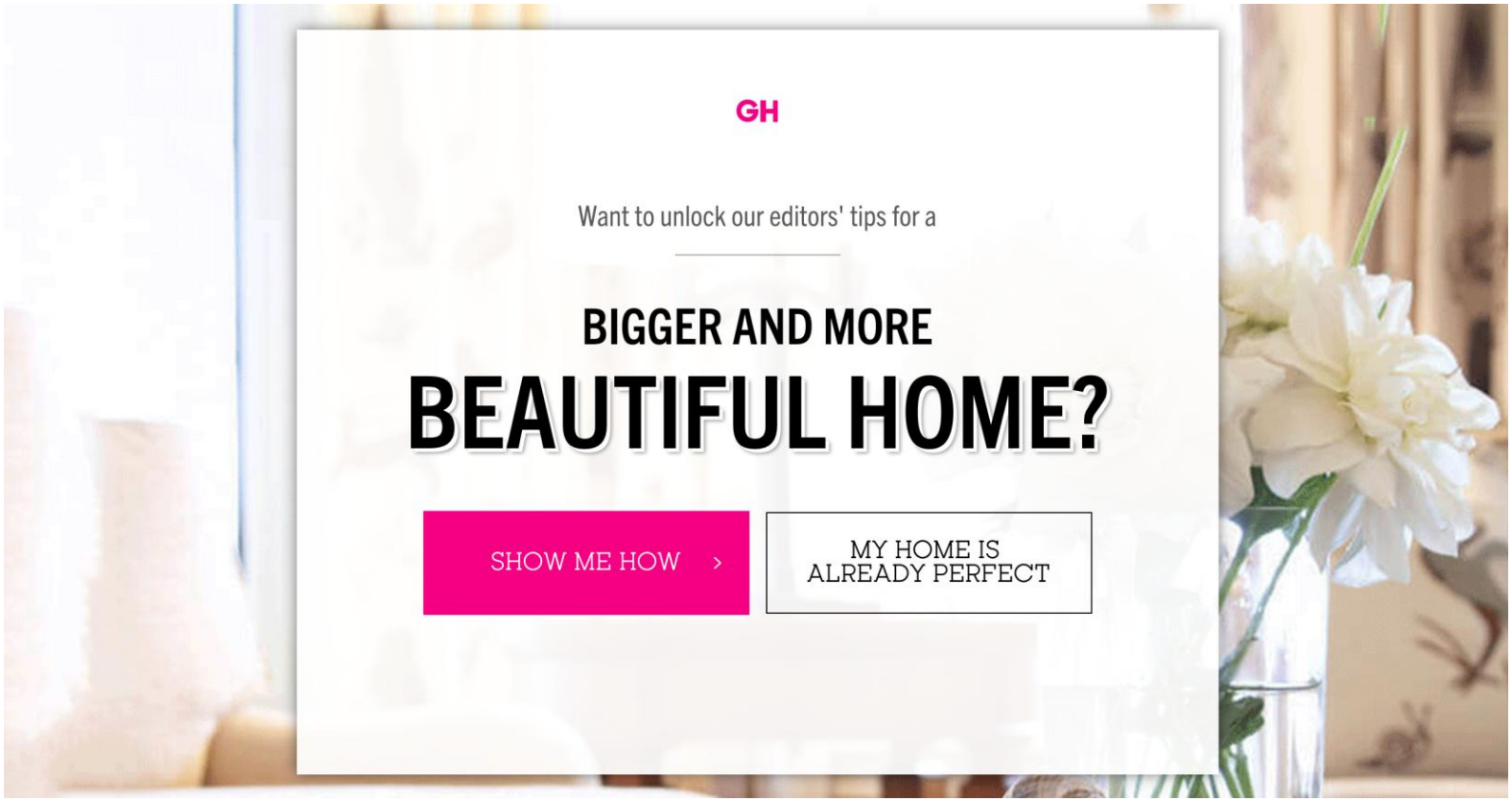
Non-Modal:

- Free control
- Task continuity
- May be ignored

Best Practices

- Use modals for critical tasks.
- Use non-modals for support tasks.
- Avoid overusing either.
- Test for accessibility.
- Tip: If background info is needed, go non-modal.

Mode ? Advantage? Disadvantage



Modal –Yes/No ?

Contrary to popular belief, mailing list signups, while critical for generating business leads, are not critical to the user. In a recent web-usability study, we heard visceral disdain for modal dialogs pertaining to email newsletter signups.

Avoid modal dialogs for complex decision making that requires additional sources of information unavailable in the modal.

Modal dialogs should be used for short, direct dialogs with the user. If a modal requires the user to do complex research or consult additional sources of information (potentially blocked by the modal), then it's not the right UI element for that interaction.

Conclusion & Discussion

- Choose modality by task & context.
- Think about user state.
- Discussion: Share frustrating or helpful modal/non-modal examples.
- Bonus: Redesign a poorly used modal from any app.

UI UX

The Design of Everyday Things

Problem Space

The Problem Space is the initial phase of product development where the focus is on understanding the problem.

This phase involves extensive research and analysis to identify the root causes of user pain points and needs.

It is about asking the right questions and gathering insights to define the problem accurately.

Problem Space -Key Activities

1.Research and Discovery:

1. Conducting user research, market analysis, and competitive analysis to gather a comprehensive understanding of the context.
2. Methods include surveys, interviews, ethnographic studies, and data analysis.

2.Problem Definition:

1. Clearly articulating the problem statement based on the insights gathered.
2. This involves defining the scope of the problem, its impact on users, and the desired outcomes.

1.User Personas:

1. Creating detailed profiles of the target users, including their demographics, behaviors, needs, and pain points.
2. Personas help in visualizing the end-users and keeping the development process user-centered.

2.Journey Mapping:

1. Visualizing the user's journey to identify pain points and areas of opportunity.
2. This involves mapping out the steps users take to achieve their goals and the challenges they face along the way.

Problem Space

Goal

The primary goal of the Problem Space is to develop a deep understanding of the problem from the user's perspective.

This phase ensures that the team is addressing the right problem and not just symptoms of a deeper issue.

By thoroughly exploring the problem space, teams can avoid costly mistakes and ensure that their solutions are relevant and effective.

Solution Space

The Solution Space is the phase where the focus shifts to generating, developing, and testing solutions to address the identified problem.

This phase involves creativity and innovation to come up with potential solutions and then refining these solutions based on feedback and testing.

.

Solution Space -Key Activities

1.Brainstorming and Ideation:

1. Generating a wide range of ideas and potential solutions.
2. Techniques such as brainstorming sessions, mind mapping, and sketching are used to foster creativity.

2.Prototyping:

1. Creating low-fidelity and high-fidelity prototypes to visualize and test solutions.
2. Prototypes can range from simple sketches to detailed interactive models.

3.Testing and Validation:

1. Conducting user testing and gathering feedback to validate solutions.
2. Methods include usability testing, A/B testing, and pilot programs.

4.Iteration:

1. Continuously improving the solutions based on user feedback and testing results.
2. This involves refining prototypes, addressing identified issues, and enhancing features to better meet user needs.

Solution Space

Goal

The primary goal of the Solution Space is to develop effective solutions that directly address the problem defined in the Problem Space.

This phase is about applying creativity and innovation to create products that are not only functional but also delightful for users.

By iterating on prototypes and incorporating user feedback, teams can ensure that their solutions are viable, feasible, and desirable.

Importance of Distinguishing Between Problem Space and Solution Space

---

1.Avoids Premature Solutions:

1. Ensures that the team does not jump to conclusions or develop solutions before fully understanding the problem.
2. This reduces the risk of building products that do not adequately address user needs.

2.Focuses on User Needs:

1. Keeps the focus on the user's actual needs and problems, leading to more user-centered solutions.
2. This increases the likelihood of creating products that resonate with users and solve real problems.

Importance of Distinguishing Between Problem Space and Solution Space

1.Encourages Innovation:

1. Allows for a broader exploration of potential solutions, fostering creativity and innovation.
2. Teams can explore multiple avenues before settling on the best solution.

2.Improves Problem-Solving:

1. Leads to better problem-solving as it ensures a thorough understanding of the problem before moving to solution development.
2. This structured approach enhances the quality and effectiveness of the solutions.

Problem vs. Solution Space

References :

No solution space context, only a problem space:
http://www.youtube.com/watch?v=dq_SJ7CtnZI

Great job of modeling the problem space:

http://www.youtube.com/watch?v=ynvKWYvyCqw

http://www.youtube.com/watch?v=W1czBcnX1Ww

https://www.youtube.com/watch?v=rVlhMGQgDkY


PUSH
PUSH


PULL
PULL

Visibility Factor

User needs visual and oftentimes auditory indication that the system is behaving properly

- membrane keypads - https://jalopnik.com/science-proves-that- buttons-are-better-than-touchscreen-1849428675
- *A study in Europe found that buttons in cars were quicker and safer to use than touchscreens.*
- To do this, the publication tested the user interfaces in 11 different cars currently on the market. Models tested included the screen-filled BMW iX and Tesla Model 3, the tactile Dacia Sandero and a 17-year-old Volvo V70.

Observation

Natural mapping between objects allows the users to complete a task without consciously figuring out how the system works.

Is your intent clear?

Each person may have a different mental model of how to complete some task

Terminologies

Utility (UT): “the ability of a product to provide the necessary functions for given tasks” (pragmatic).

Usability (US): “the ability of a product to provide the functions in an easy and efficient way” (pragmatic).

Stimulation (S): “the ability of a product to surprise, to foster curiosity and to provide opportunities for the perfection of knowledge and skills” (hedonic).

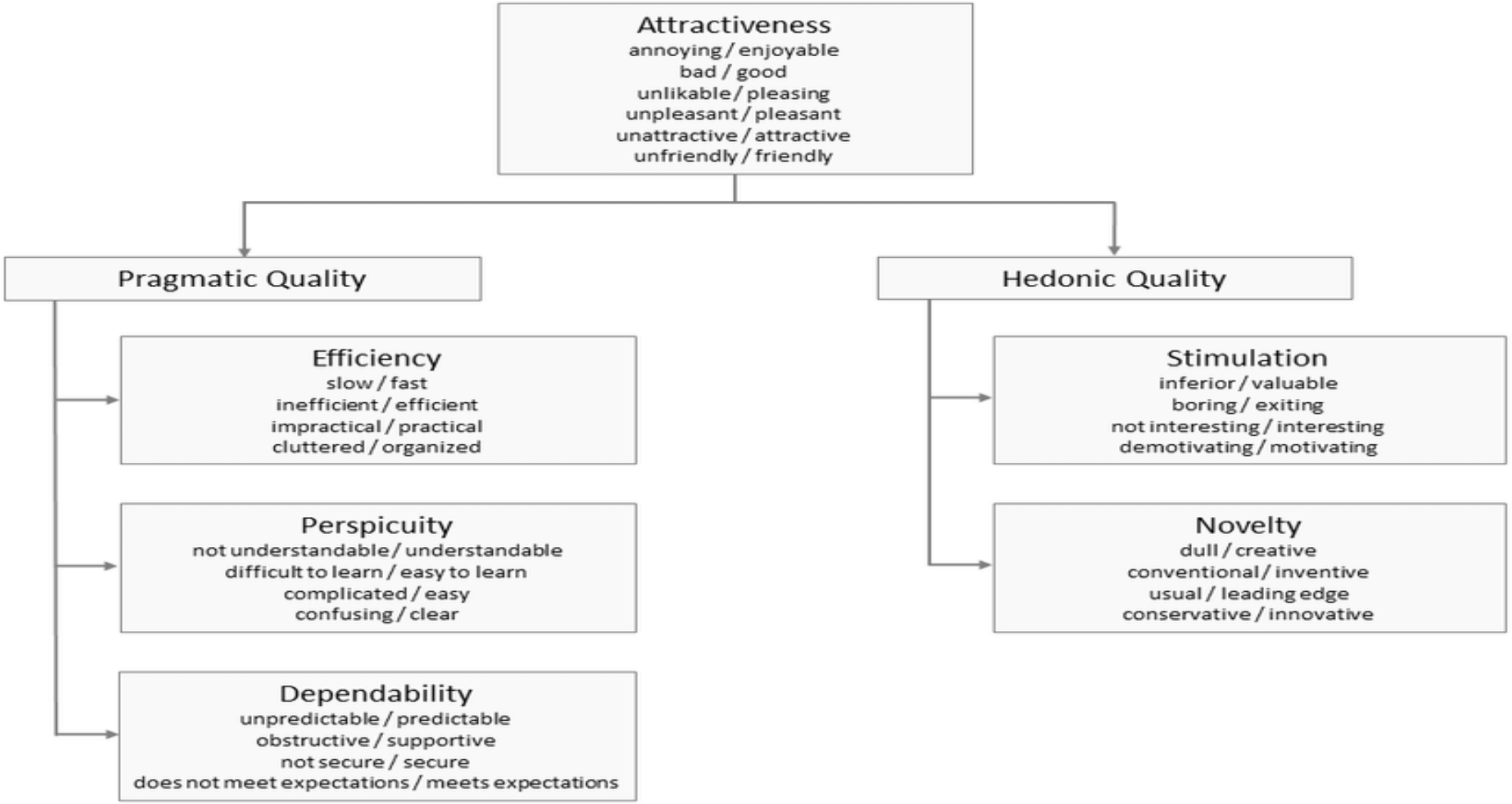
Beauty (B): “the ability of a product to evoke a feeling of ‘beauty”’ (hedonic)

Pragmatic Design:

- **Focus:** Functionality, usability, efficiency, task completion.
- **Goal:** To make a product easy to learn, understand, and use for achieving specific goals.
- **Key aspects:** Clarity, simplicity, predictability, and ease of navigation.
- **Examples:** A well-organized website with clear navigation, a straightforward user interface, or an intuitive software application.

Hedonic Design:

- **Focus:**
- Pleasure, fun, engagement, emotional appeal, and aesthetics.
- **Goal:**
- To create a positive and enjoyable user experience that goes beyond mere functionality.
- **Key aspects:**
- Novelty, stimulation, personalization, and the ability to evoke positive emotions.
- **Examples:**
- A visually appealing website with interactive elements, a game with engaging gameplay, or a product that evokes a sense of luxury and delight.


Attractiveness
annoying / enjoyable
bad / good
unlikable / pleasing
unpleasant / pleasant
unattractive / attractive
unfriendly / friendly
Pragmatic Quality
Hedonic Quality
Efficiency
slow / fast
inefficient / efficient
impractical / practical
cluttered / organized
Perspicuity
not understandable / understandable
difficult to learn / easy to learn
complicated / easy
confusing / clear
Dependability
unpredictable / predictable
obstructive / supportive
not secure / secure
does not meet expectations / meets expectations
Stimulation
inferior / valuable
boring / exiting
not interesting / interesting
demotivating / motivating
Novelty
dull / creative
conventional / inventive
usual / leading edge
conservative / innovative

Cognitive Bias

Anchoring

Bandwagon Effect

Decoy Effect

Anchoring

The first number you say affects the next number in someone's head. For example, if you ask people to donate to a charity, they might give an average of $2.

But if you "suggest" a donation of $10, the average will go up to something more like
$5. Nothing changed, but you anchored donors to $10, which made $2 feel lower.

Bandwagon Effect

The more people who believe something, the more likely it is that other people will believe it, too. Information doesn't become more true or more false because lots of people believe it, but your brain doesn't know that. Your mom always said, "If everybody jumped off a bridge, would you do it, too?" (Because all the other moms say that.)

This is why you should usually show how many people have Liked, registered for, or shared something. It's also why informercials say garbage like "a million people can't be wrong!"

Oh yes they can!

Decoy Effect

Imagine you want to subscribe to a newspaper, and these are the choices:

Web Only: $10

Print Only: $25

Print & Web: $25

Which one is the best deal? After a few seconds to consider it, there is about an 80% chance that you think Print & Web is the best value.

Why? Because the Print Only price is the “decoy”—nobody will choose it. Its only purpose is to make the most expensive price look like a good deal. Even though nobody chooses it, if you remove it, about 60% of people will choose the cheapest option instead.

It’s not rational. It’s biased.

Psychology versus Culture

Psychology, in this sense, is the same for all of us. Most of what we will learn in this book is about psychology. The stuff we all share. Behavior you can predict and use in your designs

For example: all people feel the need for justice, but one person might think death row is appropriate and another person might not. Or, to continue our Pinterest example: “collecting” might be universal, but what we collect is highly personal. Pinterest does a lot of work to find topics of interest for each user, whether that is interfaces, architecture, or fluffy chickens.

Why Do We Need User Psychology?

UX Design is the practice of creating nonrandom effects in people to solve a problem. In other words, you make them feel, think, and do stuff—on purpose. Therefore, the more you understand your users' feelings, thoughts, and actions, the better designer you are.

Understanding psychology allows you to answer things like why people share. Or why don't they choose the cheapest option every time? Or why does the design that got 200 Likes on Dribbble actually suck the big one?

User Experience?

What the user feels

What the user wants

What the user thinks

What the user believes

What the user remembers

What the user doesn’t realize

UX

In UX forums, this is what inexperienced designers talk about most. Making the user “happy.” Asking them what they “like.” Making users say “wow!”

Users have feelings, and they are useful, but they are only a small fraction of an experience. The good things about feelings are that we can see them on a user’s face, users can tell us about them, we can measure them, and we can relate to them, so feelings are easy to study.

It is helpful to imagine “thinking” as something the user carries, like bricks. Psychologists might call it cognitive load. Every time you make a user figure something out, or read more than a sentence of instructions, or learn a new feature, or hunt for the right link, or do two things at once, you’re giving them another brick to carry. Most people can only carry a few bricks at a time. If you give them too many, they will drop everything.

Creating User Profiles

Profiles or personas describe the goals, expectations, motivations, and behavior of real people. Why do they come to your site? What are they looking for? What makes them nervous?

research and data. If you can’t back it up with research or data, you’re just making shit up and you should stop.

Bad profile

Persona A is a male, between the ages of 35 and 45 with an above average income and education. They have at least one child and own at least one new vehicle. They are outgoing and career-oriented, and tend to be right-brain thinkers.

Why it’s bad

That might be great if you’re selling ads, but as far as UX goes, that profile is basically useless. Why? Because it doesn’t allow you to say “no” to any feature ideas. What sort of features does a male between 35 and 45 need? It could be anything

Web sites and GUIs…

There should be only one way to get to something

You should only be able to traverse backwards the way that you came

There is a difference between the FIRST time that you use a GUI, and the 100th.

- Which should you program for?
- Don't favor either.

GUIs

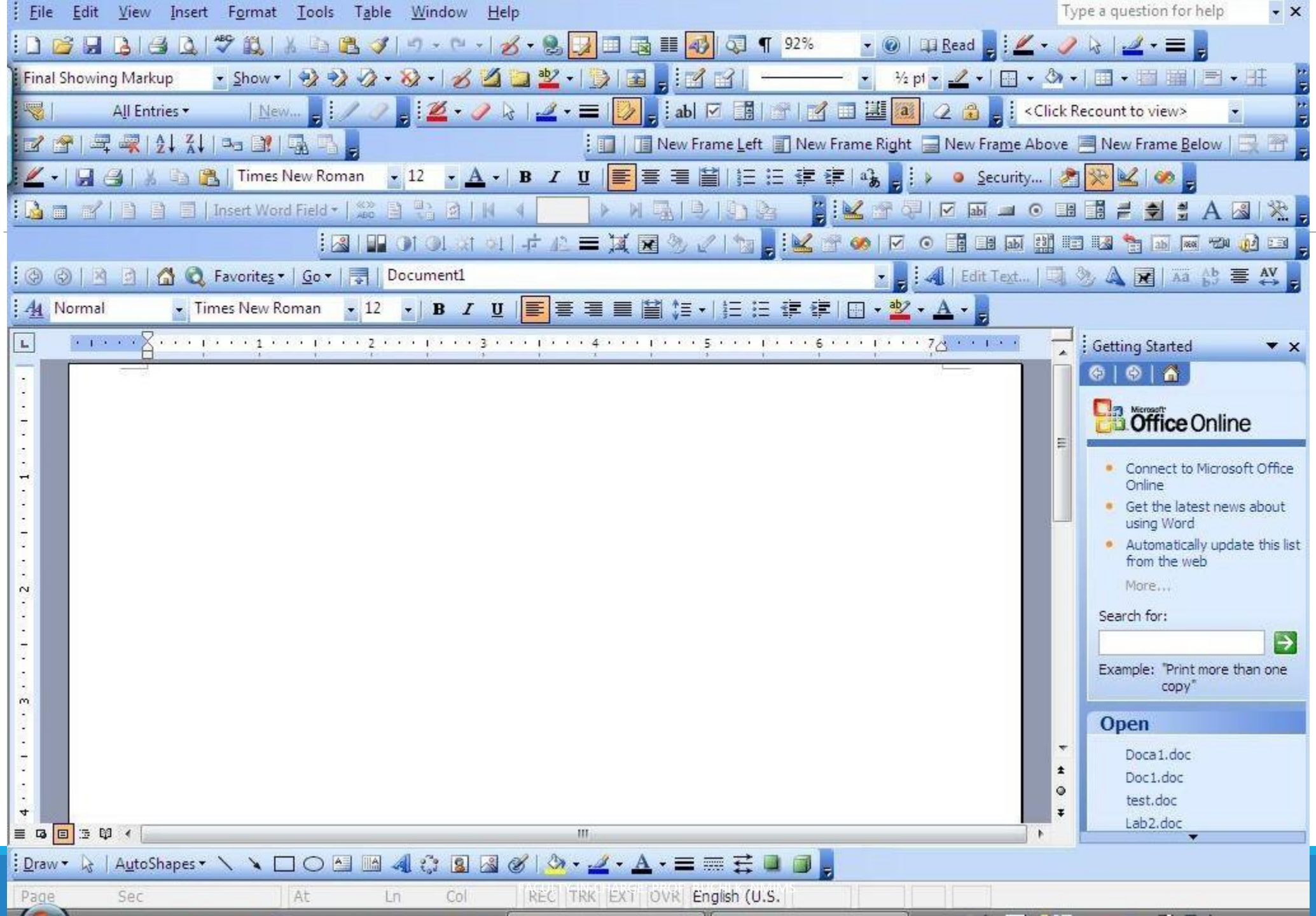
A tendency to add frills

- Great precision is not required - GUIs need not detail every move nor give power over every variable

A tendency to add configurability

Everyone who reviews your GUI will think you are wrong, and they are right.

- Everyone relies on their own personal history
- Design VERY neutral GUIs



Assignment: find a bad website

Art.yale.edu

Repeated misuse is a good indicator

http://www.baddesigns.com/numbers.html (note the attempt to fix a bad design with a “sticker”).

When we encounter a design (from Donald Norman):

1. form the goal *(picture the end result)*
2. specify the action *(without ambiguity)*
3. execute the action *(no fear of failure)*
4. perceive the state of the world *(feedback)*
5. evaluate the outcome *(degree of success)*

Engineers…

Think and create

Find simple and elegant solutions to complex problems

Simplicity is to be encouraged

Complexity is to be discouraged

Why?

Kevin Steven's Law – the simpler it is for the user, the harder it is for the programmer.

How Do Software-based Projects Fail? (note: not Why, but How)

Unhappy Client – do not get what they expect or expect what they get

- **Ran out of time and $$**
- **Unhappy user**

Safety compromised, including death

Technically inadequate or over-adequate

Does not contribute to the company business case

Burned out employees

Menace to Society

Types of Information Architecture

Types of IA include:

Categories

Tasks

Search

Time

People

Category

When you think of a retail store like H&M, you probably imagine its menu as a set of categories: “Men, Women, Kids, Sale,” and so on. Types of content.

When you click those categories, you expect to see content that fits in that category.

This is the most common type of IA.

Tasks

Another way to organize your site or app is by the goals the users need to achieve. If you are a bank, perhaps something like “Save, Loan, Invest, Get Help, Open an Account” would make a simpler menu.

If the user knows what they want, this is a great way to structure your design.

But be careful: users don’t always know enough to choose their own adventure.

If you think about it, you will realize that a task-based site and a category-based site for the same company could look very different. It’s an important choice.

Search

If your site is very complex, or if it is mostly full of user-generated content, a search-based architecture like YouTube might make more sense.

If YouTube only had categories (Funny, Sad, Ads, Movies, etc.) it would actually be hard to use and require a lot of work to keep the categories correct!

Time

If you’re just starting in UX, this might blow your mind a little: you can also design IA that changes with time. The simplest version would be your inbox, where messages are displayed in the order they arrived. That is time-based IA design.

On a site, you would have pages for things like “hot right now, archived, later, new,” etc. Reddit or the Facebook News Feed are also examples of time-based design.

People

Facebook—or any social network—is IA based on people.

All of the pages are designed around who the information is about, and the relationships between them.

Once you are on someone's profile, Facebook uses categories (Photos, Friends, Places) to organize different types of content.

User Stories

A user story describes one possible path a user can take in your site or app. It should be short, but complete. You will need many user stories to describe your whole design.

A basic user story for Google.com might look like this:

The user arrives on the main search page.

The user can enter any search query and submit it with the mouse or keyboard.

The next page displays a list of search results with the most relevant results on top.

The user can click a link to go to the appropriate site, or they can navigate through more pages of results until they find something useful.