

Module 1

1. Common Usability problems AL LIF SAE

Ambiguous menus and icons:

A menu that has icons or labels that are difficult to understand or interpret.

Example: a menu with an icon that could represent either "save" or "print" without any additional context.

Languages that permit only single direction movement through a system:

A system that only allows users to navigate through it in a linear fashion, without the ability to jump to different sections or go back to previous screens.

Input and direct manipulation limits:

A system that limits the ways in which users can input data or directly manipulate objects, making it difficult for users to accomplish their goals.

Complex linkage:

A system with many interconnected parts that are difficult for users to understand and navigate. (Paytm Karo)

Inadequate feedback:

A system that does not provide sufficient feedback to users, making it difficult for them to understand what is happening or what actions they need to take.

Example:

Imagine you are using a mobile banking app to transfer money to a friend. You enter the

amount you want to transfer and hit the "transfer" button. However, the app does not provide any feedback to let you know whether the transfer was successful or not. Instead, the screen simply remains unchanged. This lack of feedback makes it difficult for you to know what is happening and whether you need to take any further action.

Lack of system anticipation:

A system that does not anticipate user needs or actions, making it difficult for users to accomplish their goals efficiently.

Example:

Imagine you are using an online shopping website to purchase a new shirt. You add the shirt to your cart and proceed to the checkout page. However, when you get to the checkout page, you are asked to enter your billing and shipping information, even though you have already saved this information on the website. This lack of system anticipation makes it difficult for you to complete your purchase efficiently, as you have to re-enter information that the system should already have on file.

Inadequate error messages:

A system that provides error messages that are vague or unhelpful, making it difficult for users to understand what went wrong and how to fix it.

Example:

Imagine you are using a software program to edit a document. You try to save the document, but the program gives you an error message that simply says "Error saving document." This message does not provide any information about what went wrong or how to fix the problem. As a result, you have no idea what to do next and are unable to save your changes.

2. Response of people to poor design

- a. Explanation
- b. Examples
- c. Identify the response from the given scenarios

1. Physical

Frustration:

Poor design can cause users to feel frustrated when they are unable to accomplish their goals or complete tasks due to confusing or unintuitive interfaces or functions.

Example:

Imagine you are trying to use a website to book a flight, but the website is slow to load and the search function is difficult to use. This may cause you to feel frustrated and annoyed, as you are unable to easily accomplish your goal of booking a flight.

Confusion:

Poor design can lead to confusion, especially if it is not clear what users are supposed to do or how to navigate the system.

Example:

Imagine you are using a new app for the first time, but the interface is cluttered and there are no clear instructions on how to use it. This may cause you to feel confused and unsure of what to do next.

Stress:

Poor design can increase stress levels if it is difficult or time-consuming to use, or if it causes users to feel uncertain or unsure of what is happening.

Example:

Imagine you are trying to use a software program to complete an important project, but the program frequently crashes and loses your work. This may cause you to feel stressed and anxious, as you are worried about meeting your deadline and concerned about losing your progress.

Anger:

Poor design can lead to anger, especially if it causes users to feel that their time or effort has been wasted or if it is difficult to correct errors or resolve issues.

Example: Imagine you are trying to use an online shopping website to purchase an item, but the website is slow to load and the checkout process is confusing. This may cause you to feel angry and annoyed, as you feel like your time is being wasted and you are unable to complete your purchase

Disappointment:

Poor design can lead to disappointment if users have high expectations for a product or service but are let down by the poor design.

Example:

Imagine you are excited to try out a new product or service, but when you start using it, you realize that the design is poor and it is difficult to use. This may cause you to feel disappointed, as you had high expectations for the product or service but were let down by the poor design

Boredom

It can be a particularly challenging response to poor design to address, as it can be difficult to quantify and measure. However, it is important for designers to consider how to engage and interest users in order to keep them motivated and engaged. This can be achieved through a variety of strategies, such as using engaging visuals, providing interactive elements, and offering a variety of content or activities for users to explore

Example:

If a product or service is poorly designed and does not engage or interest users, it can lead to boredom. For example, if a website has a dull or uninteresting layout and does not provide engaging content, users may quickly become bored and lose interest in using the site. Similarly, if an app or software program has a poorly designed interface and is not intuitive or easy to use, it may cause users to become bored and lose motivation to continue using it.

2. Physical

When people do something, they expect the benefits of what they are doing to outweigh the cost or effort to do it. The following physical reactions are:

Abandonment of the system - In business systems this was a common reaction

of managerial and professional personnel. With the Web, almost all users can exercise this option.

Partial use of the system -This is the most common user reaction to most computer systems. Many aspects of many systems often go unused.

Physical

Psychological responses frequently lead to, or are accompanied by, the following physical reactions.

Abandonment of the system. The system is rejected and other information sources are relied upon. These sources must, of course, be available and the user must have the discretion to perform the rejection. In business systems this is a common reaction of managerial and professional personnel. With the Web, almost all users can exercise this option.

Partial use of the system. Only a portion of the system's capabilities are used, usually those operations that are easiest to perform or that provide the most benefits. Historically, this has been the most common user reaction to most computer systems. Many aspects of many systems often go unused.

Indirect use of the system. An intermediary is placed between the would-be user and the computer. Again, since this requires high status and discretion, it is another typical response of managers or others with authority.

Modification of the task. The task is changed to match the capabilities of the system. This is a prevalent reaction when the tools are rigid and the problem is unstructured, as in scientific problem solving.

Compensatory activity. Additional actions are performed to compensate for system inadequacies. A common example is the manual reformatting of information to match the structure required by the computer. This is a reaction common to workers whose discretion is limited, such as clerical personnel.

Misuse of the system. The rules are bent to shortcut operational difficulties. This requires significant knowledge of the system and may affect system integrity.

Direct programming. The system is reprogrammed by its user to meet specific needs. This is a typical response of the sophisticated worker.

These physical responses also greatly diminish user efficiency and effectiveness. They force the user to rely upon other information sources, to fail to use a system's complete capabilities, or to perform time-consuming "work-around" actions.

3. Methods to collect business definitions/ requirement analysis/requirements from users

- a. Discussion
- b. Examples
- c. Apply appropriate methods to collect business definitions/ requirement analysis/requirements from given scenarios/use cases

Direct methods:

- Interviews
- Surveys
- Focus groups
- User stories
- User personas
- Prototyping
- Requirements workshops
- Observation
- Existing documentation
- Collaborative design sessions



Indirect methods:

- Analyzing user behavior and data
- Reviewing customer feedback and support tickets
- Monitoring social media and online conversations
- Conducting market research
- Electronic Focus Group
- Other Media Analysis

4. Problems in requirement collection

- a. Discussion
 - b. Example with personas
- MC IA ULC

Miscommunication:

Miscommunication can occur when there is a lack of clarity or misunderstandings between the stakeholders and the requirements gathering team. This can lead to incorrect or incomplete requirements being gathered. To avoid this problem, it's important to have clear communication channels and to clearly define the roles and responsibilities of the stakeholders and the requirements gathering team.

For example, a stakeholder might request a feature that the requirements gathering team misunderstands and includes in the requirements document. This can lead to the development team building the wrong feature, which can be costly and time-consuming to fix.

Changing requirements:

Requirements can change over time, and it can be difficult to keep track of these changes and ensure that the final product or service meets the updated requirements. To address this problem, it's important to have a process in place for documenting and tracking changes to requirements.

For example, a stakeholder might request a feature that is initially included in the requirements document, but later decides that they no longer need it. If this change is not properly documented, the development team might still build the feature, leading to wasted resources.

Incomplete requirements:

It's important to gather a thorough set of requirements, but it can be challenging to ensure that all relevant requirements have been identified and documented. To avoid this problem, it's helpful to use tools and techniques, such as user stories and user personas, to help gather and organize requirements in a clear and structured way.

For example, a stakeholder might request a feature that is not fully described in the requirements document. The development team might build the feature based on the incomplete information, but it might not meet the stakeholder's needs.

Ambiguity:

Requirements that are vague or ambiguous can be difficult to understand and can lead to misunderstandings or misinterpretations. To avoid this problem, it's important to ensure that requirements are clearly and concisely written and that any ambiguous terms are defined.

For example, a stakeholder might request a feature that is described in the requirements document in vague terms, such as "a way to search for users." This could be interpreted in multiple ways, leading to misunderstandings and misinterpretations.

Unclear roles and responsibilities:

If the roles and responsibilities of the stakeholders and the requirements gathering team are not clearly defined, it can lead to confusion and delays in the requirements gathering process. To avoid this problem, it's important to clearly define the roles and responsibilities of each party involved in the requirements gathering process.

For example, if the roles and responsibilities of the stakeholders and the requirements gathering team are not clearly defined, it might lead to confusion about who is responsible for gathering and documenting requirements.

Limited resources:

Collecting requirements can be a time-consuming and resource-intensive process, and it can be challenging to allocate sufficient resources to this task. To address this problem, it's important to allocate sufficient resources to the requirements gathering process and to prioritize the most important requirements.

For example, the requirements gathering team might not have enough time or resources to gather a thorough set of requirements, leading to gaps or incomplete information.

Stakeholder conflicts:

Different stakeholders may have conflicting requirements or priorities, and it can be difficult

to reconcile these differences and come to a consensus. To address this problem, it's important to involve all relevant stakeholders in the requirements gathering process and to facilitate open and transparent communication to ensure that all perspectives are considered. It can also be helpful to establish clear decision-making processes to help resolve conflicts. For example, different stakeholders might have conflicting requirements or priorities, such as one stakeholder wanting a feature that is not a priority for another stakeholder. It can be challenging to reconcile these differences and come to a consensus.

5. Understanding user's work

The technique used to gain an understanding of what the computer system must do is called task analysis. Another object of task analysis is to gain a picture of the user's mental model.

Mental Models

A mental model is an internal representation of a person's current conceptualization and understanding of something: themselves, other people, the environment, and the thing with which they interact.

Performing a Task Analysis

Task analysis involves breaking down the user's activities to the individual task level. The goal is to obtain an understanding of why and how people currently do the things that will be automated.

Task analysis also provides information concerning workflows; the interrelationships between people, objects, and actions; and the user's conceptual frameworks. The output of a task analysis is a complete description of all user tasks and interactions.

Work activities are studied and/or described by users using the techniques just reviewed: direct observation, interviews, questionnaires, or obtaining measurements of actual current system usage.

Defining Objects

- Determine all objects that have to be manipulated to get work done. Describe
- The objects used in tasks.

- Object behaviour and characteristics that differentiate each kind of object.
- The relationship of objects to each other and the people using them.
- The actions performed.
- The objects to which actions apply.
- Information or attributes that each object in the task must preserve, display, or allow to be edited.
- Identify the objects and actions that appear most often in the workflow.
- Make the several most important objects very obvious and easy to manipulate.

Developing Metaphors

- Choose the analogy that works best for each object and its actions.
- Use real-world metaphors.
- Use simple metaphors.
- Use common metaphors.
- Multiple metaphors may coexist.
- Use major metaphors, even if you can't exactly replicate them visually.
- Test the selected metaphors.

A metaphor is a concept where one's body of knowledge about one thing is used to understand something else.

Metaphors act as building blocks of a system, aiding understanding of how a system works and is organized.

6. Human Consideration in design

The User's Knowledge and Experience

The knowledge possessed by a person, and the experiences undergone, shape the design of the interface in many ways. The following kinds of knowledge and experiences should be identified.

Computer Literacy

Highly technical or experienced, moderate computer experience, or none

System Experience

High, moderate, or low knowledge of a particular system and its methods of interaction

Application Experience

High, moderate, or low knowledge of similar systems

7. Screen Distraction factors and varieties/types

- a. Discussion
- b. Discussion on example with the diagram of screen distraction factors and varieties/types

Variety of distractions

How to distract the screen user

Numerous audio and visual interruptions

Extensive visual clutter

Clustered and cramped layout

Poor information readability

Unclear captions

Misleading headings

Irrelevant and unnecessary headings

Bad typography

Incomprehensible screen components

Irrelevant and unnecessary headings

Arrangement

Confusing and inefficient navigation

Clustered and cramped layout

Inefficient operations

Inefficient results

Excessive or inefficient page scrolling

Inefficient results

Information overload

Poor quality of presentation

Design inconsistency

Appearance

Overuse of too many bright colors

Over use of 3D presentations

Arrangement

Visual inconsistency

Outdated information

8. Ordering of Screen Data and Content

- a. Discussion
- b. Example

- Divide information into units that are logical, meaningful and sensible.
- Organize by interrelationships between data or information.
- Provide an ordering of screen units of elements depending on priority.
- Possible ordering schemes include
 - Conventional
 - Sequence of use
 - Frequency of use
 - Function
 - Importance
 - General to Specific
- Form groups that cover all possibilities.
- Ensure that information is visible.
- Ensure that only information relative to the task is presented on screen.
- Organizational scheme is to minimize the number of information variables.
- Upper left starting point
- Provide an obvious starting point in the screen's upper left corner.

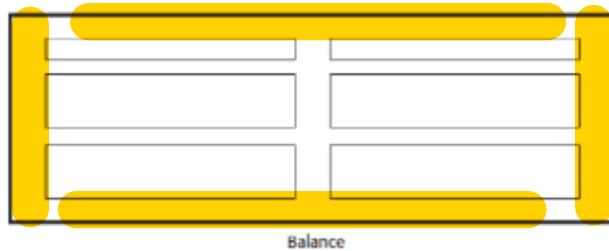
9. Screen Navigation and Flow

- Provide an ordering of screen information and elements that:
 - is rhythmic guiding a person's eye through display
 - encourages natural movement sequences.
 - minimizes pointer and eye movement distances.
- Locate the most important and most frequently used elements or controls at top left.
- Maintain top to bottom, left to right flow.
- Assist in navigation through a screen by
 - Aligning elements
 - Grouping elements
 - Use of line borders
- Through focus and emphasis, sequentially, direct attention to items that are
 - Critical
 - Important
 - Secondary
 - Peripheral
- Tab through window in logical order of displayed information.
- locate command button at the end of the tabbing order sequence,
- When groups of related information must be broken and displayed on separate screens, provide breaks at logical or natural points in the information flow.
- In establishing eye movement through a screen, also consider that the eye tends to move sequentially, for example –
 - From dark areas to light areas
 - From big objects to little objects
 - From unusual shapes to common shapes.

10. Visually pleasing composition with the following qualities:

Balance

Screen balance by providing an equal weight of screen elements, left and right, top and bottom.



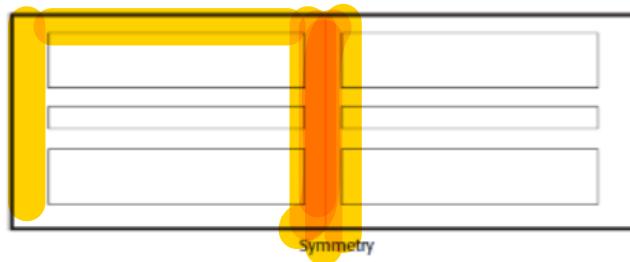
Balance



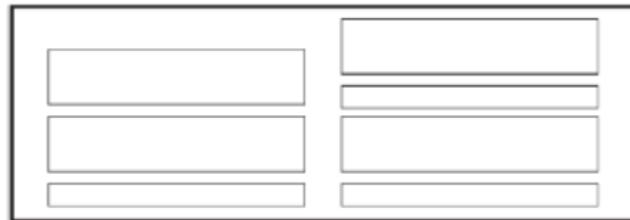
Instability

Symmetry

Symmetry by replicating elements left and right of the screen centerline.



Symmetry

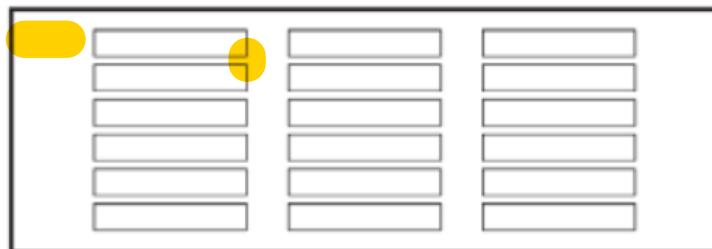


Asymmetry

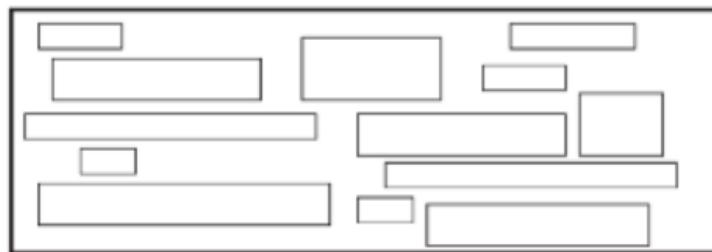
Regularity

Create regularity by establishing standard and consistently spaced horizontal and vertical alignment points.

Also, use similar element sizes, shapes, colors, and spacing.



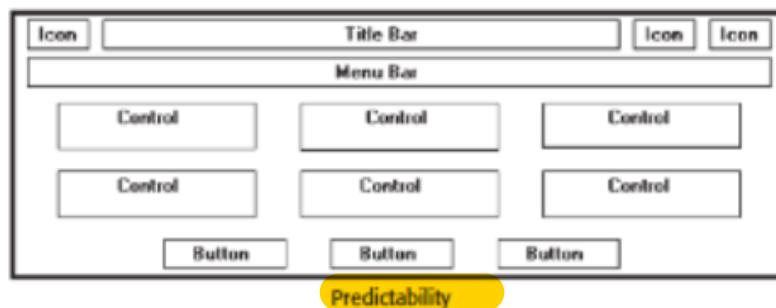
Regularity



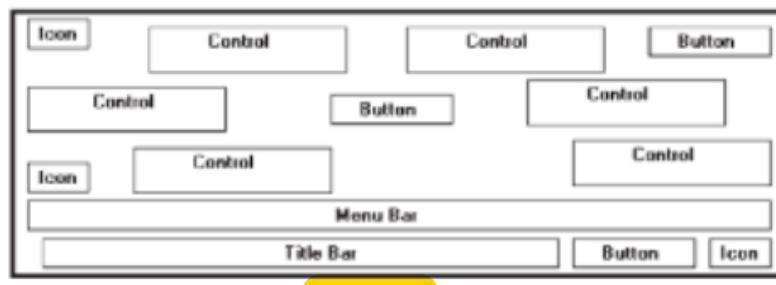
Irregularity

Predictability

Predictability by being consistent and following conventional orders or arrangements.



Predictability



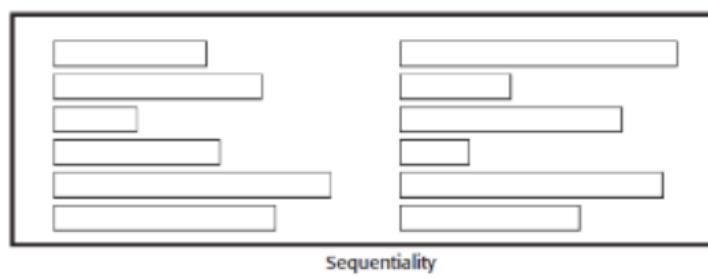
Spontaneity

Sequentially

Sequentiality by arranging elements to guide the eye through the screen in an obvious, logical, rhythmic, and efficient manner.

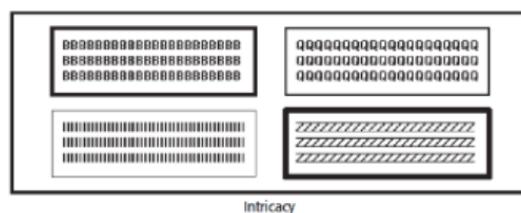
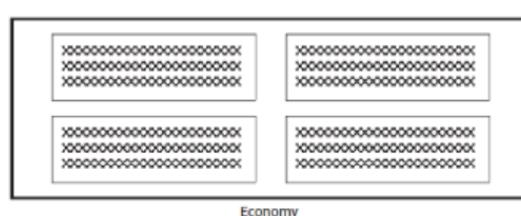
The eye tends to be attracted to:

- A brighter element before one less bright.
- Isolated elements before elements in a group.
- Graphics before text.
- Color before black and white.
- Highly saturated colors before those less saturated.
- Dark areas before light areas.
- A big element before a small one.
- An unusual shape before a usual one.
- Big objects before little objects.



Economy

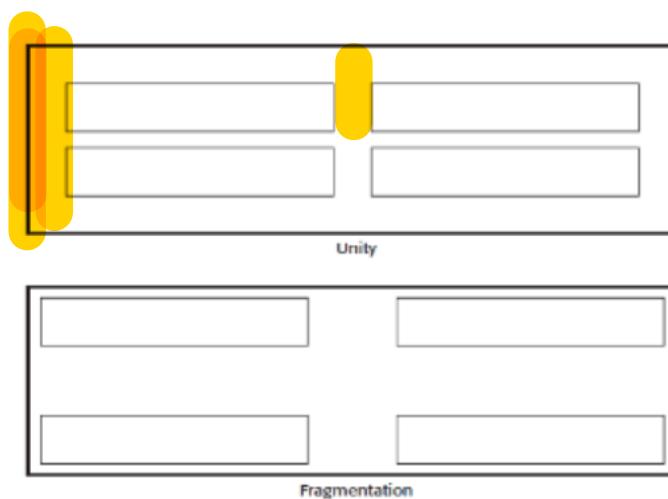
Provide economy by using as few styles, display techniques, and colors as possible.



Unity

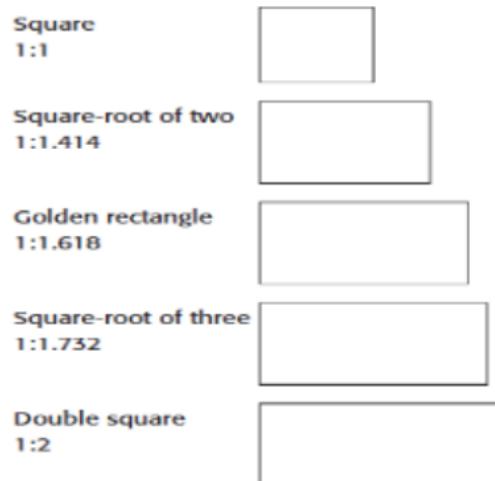
Create unity by:

- Using similar sizes, shapes, or colors for related information.
- Leaving less space between elements of a screen than the space left at the margins.



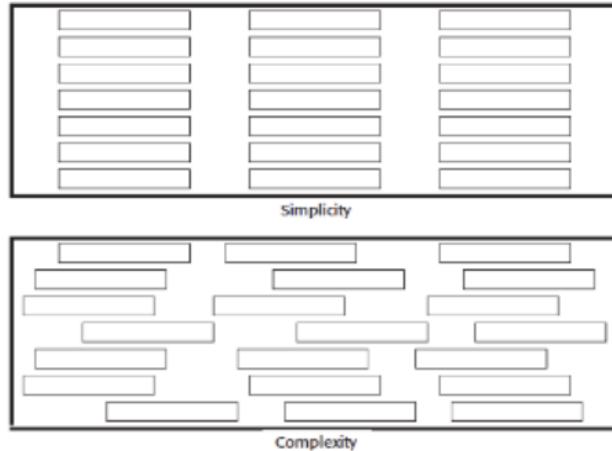
Proportion

Create windows and groupings of data or text with aesthetically pleasing proportions.



Simplicity

- Optimize the number of elements on a screen, within limits of clarity.
- Minimize the alignment points, especially horizontal or columnar.
- Provide standard grids of horizontal and vertical lines to position elements.



Groupings

- Provide functional groupings of associated elements.
- Create spatial groupings as closely as possible to five degrees of visual angle.
- Evenly space controls within a grouping, allowing 1/8 to 1/4 inch between each.
- Visually reinforce groupings:

- Provide adequate separation between groupings through liberal use of white Space.
- Provide line borders around groups.

Provide meaningful titles for each grouping.

- Discussion
- Example
- Design

Module 2

1. Information Architecture

- What is it, and what it covers?

Ans:

What is it: Information architecture is an art of organising the information space. It comprises of organisation such as: searching, browsing, labelling, categorizing, sorting, manipulating and

strategically hiding the information.

What it covers: ...

- i. Show one single thing, such as a map, book, video, or game
- ii. Show a list or set of things
- iii. Provide tools to create a thing
- iv. Facilitate a task

2. Organizational Pattern

1. Feature, Search, and Browse

2. News Stream

3. Picture Manager

4. Dashboard

5. Canvas Plus Palette

6. Wizard

7. Settings Editor

8. Alternative views

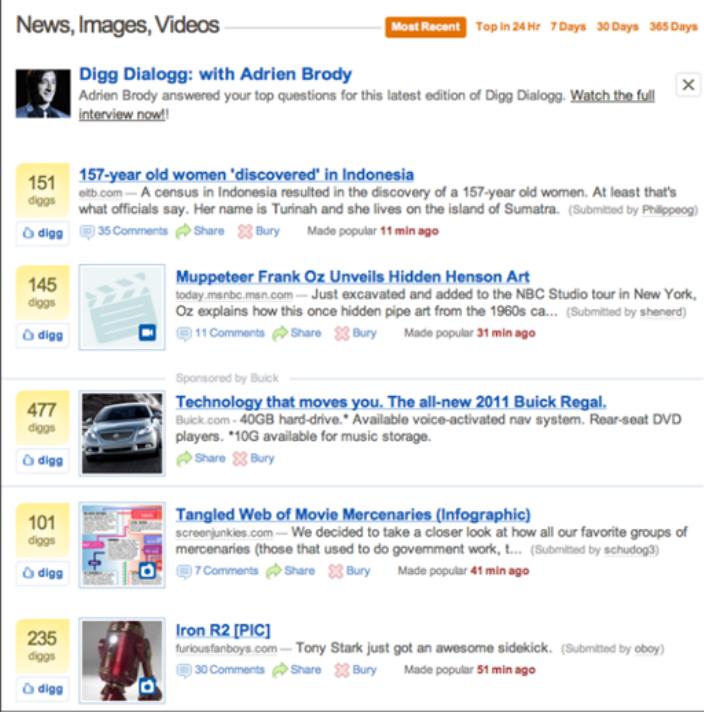
9. Many Workspaces

10. Multi-Level Help

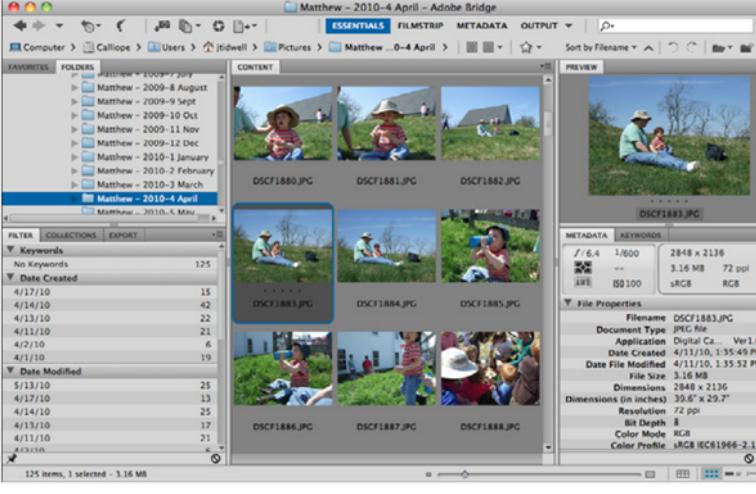
Name of the pattern	Feature, Search, and Browse
What	Put three elements on the main page of the site or app: a featured article or product, the search box, and a list of items or categories that can be browsed
When	Your site offers users long lists of items—articles, products, videos, and so on—that can be browsed and searched. You want to engage incoming users immediately by giving them something interesting to read or watch.

Why	Searching and browsing go hand in hand as two ways to find desired items: some people will know what they're looking for and zero in on the search box, while others will do more open-ended browsing through the lists and categories you show them.
Example	
Real word examples	Amazon, Flipkart, Gpay.

Name of the pattern	News Stream
What	Show time-sensitive items in a reverse chronological list, with the latest items at the top. Update it dynamically, and combine the items from different sources or people into one single stream.
When	When user subscribes to more than one communication channel, such as blogs, email, social site updates or news site, to deliver timely content to users.
Why	People can keep up with a news stream easily, since the latest items reliably appear on top with no effort on the part of the user. User can have a glance at news stream which gives a user a lot of information with very little time and efforts.

Example	 <p>The screenshot shows a news feed from Digg. At the top, there's a banner for 'Digg Dialog: with Adrien Brody'. Below it, several news items are listed with their digg counts, titles, and brief descriptions. One item is an advertisement for the 2011 Buick Regal.</p> <table border="1"> <thead> <tr> <th>Article Title</th> <th>Diggs</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>157-year old women 'discovered' in Indonesia</td> <td>151</td> <td>eltb.com — A census in Indonesia resulted in the discovery of a 157-year old woman. At least that's what officials say. Her name is Turinah and she lives on the island of Sumatra. (Submitted by Philippeog)</td> </tr> <tr> <td>Muppeteer Frank Oz Unveils Hidden Henson Art</td> <td>145</td> <td>today.msnbc.msn.com — Just excavated and added to the NBC Studio tour in New York, Oz explains how this once hidden pipe art from the 1960s ca... (Submitted by shenerd)</td> </tr> <tr> <td>Technology that moves you. The all-new 2011 Buick Regal.</td> <td>477</td> <td>Buick.com - 40GB hard-drive.* Available voice-activated nav system. Rear-seat DVD players. *10G available for music storage.</td> </tr> <tr> <td>Tangled Web of Movie Mercenaries (Infographic)</td> <td>101</td> <td>screenjunkies.com — We decided to take a closer look at how all our favorite groups of mercenaries (those that used to do government work, t... (Submitted by schudog3)</td> </tr> <tr> <td>Iron R2 [PIC]</td> <td>235</td> <td>furiousfanboys.com — Tony Stark just got an awesome sidekick. (Submitted by oboy)</td> </tr> </tbody> </table>	Article Title	Diggs	Description	157-year old women 'discovered' in Indonesia	151	eltb.com — A census in Indonesia resulted in the discovery of a 157-year old woman. At least that's what officials say. Her name is Turinah and she lives on the island of Sumatra. (Submitted by Philippeog)	Muppeteer Frank Oz Unveils Hidden Henson Art	145	today.msnbc.msn.com — Just excavated and added to the NBC Studio tour in New York, Oz explains how this once hidden pipe art from the 1960s ca... (Submitted by shenerd)	Technology that moves you. The all-new 2011 Buick Regal.	477	Buick.com - 40GB hard-drive.* Available voice-activated nav system. Rear-seat DVD players. *10G available for music storage.	Tangled Web of Movie Mercenaries (Infographic)	101	screenjunkies.com — We decided to take a closer look at how all our favorite groups of mercenaries (those that used to do government work, t... (Submitted by schudog3)	Iron R2 [PIC]	235	furiousfanboys.com — Tony Stark just got an awesome sidekick. (Submitted by oboy)
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Real world examples	Inshorts app, New tab screen of Microsoft Edge browser, Dashboard of Dev.to and Medium.com (Blogging websites), Google news.																		

Name of the pattern	Picture Manager
What	Use thumbnails, item views, and a browsing interface to create a familiar structure for managing photos, videos, and other pictorial items.
When	Users work with lists or pictorial things like photos, drawings, video clips etc. The list can either be in web, app or both. The owner may allow the content to edit, comment etc.
Why	It is a style of application that many people recognise, it has a set of patterns which are closely related to each other such as Thumbnail Grid, Comment and discussion, Search Box, Sharing widget, Tabs and collapsible panels

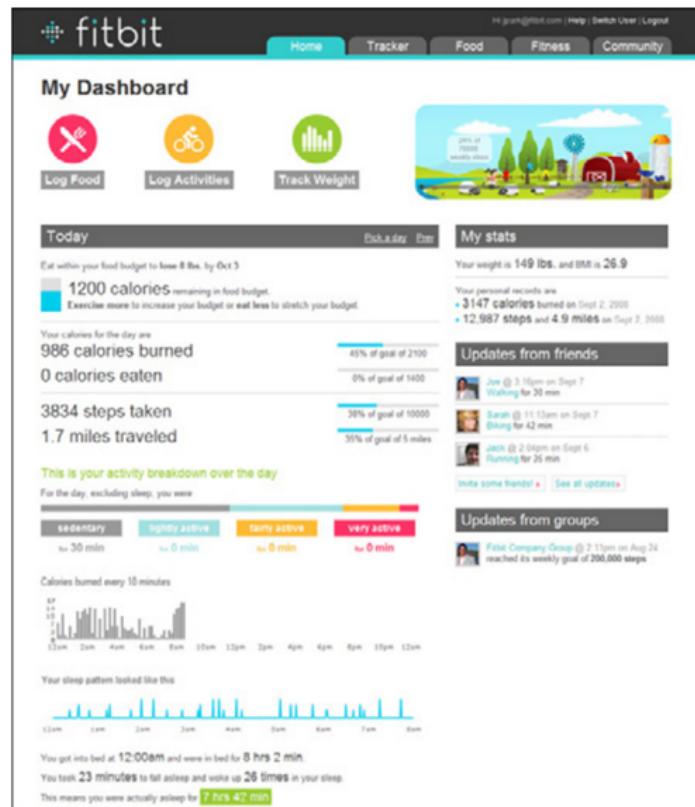
<p>Example</p> <p>(adobe bridge contains all views in one window)</p> 	
<p>Real World Examples</p> <p>Pinterest, Instagram Reels section, Google images, Phone Gallery, Picasa, YouTube,</p>	

<p>Name of the pattern</p>	<p>Dashboard</p>
<p>What</p>	<p>Information is displayed dense in this page, shows user relevant , actionable information and allowing some customizations</p>
<p>When</p>	<p>When user needs continuous monitoring of various data from various sources onto single page. Information could come from web server data, airline flights, social chatter, news.</p>
<p>Why</p>	<p>Dashboards show useful information, they update themselves, usually use graphics to display data.</p>

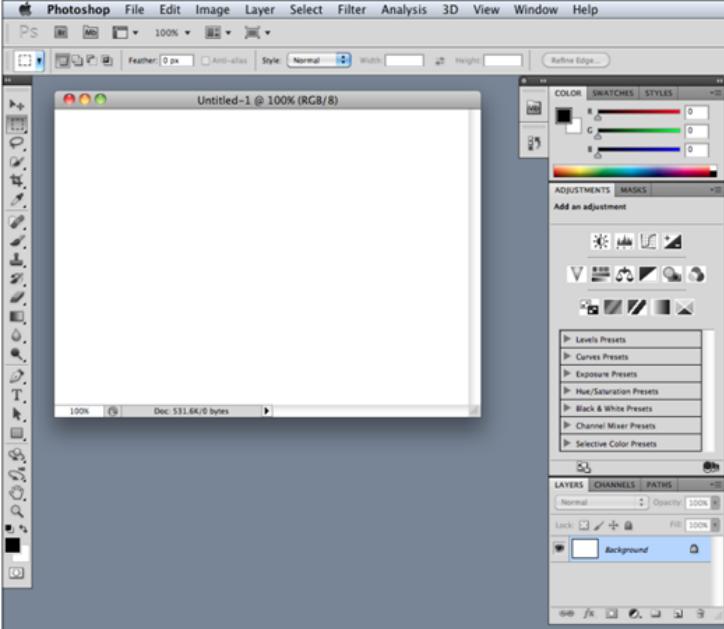
Example



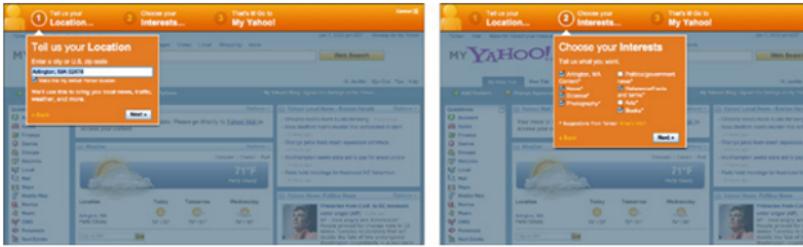
Figure 2-19. Google Analytics



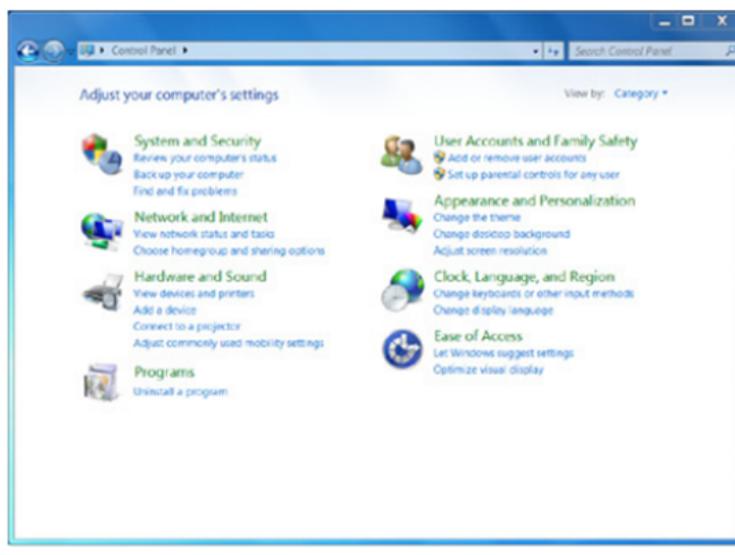
Real World Example	Fitbit watch, Samsung galaxy watch, stats of a blog, performance of website (render time, seo, image loading etc), Google analytics
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Name of the pattern	Canvas Plus Palette
What	An iconic palette next to a blank canvas, user clicks on the palette button to create objects in canvas
When	When you are designing any new graphics.
Why	It's a natural mapping from familiar physical objects to the virtual on-screen world. And the palette takes advantage of visual recognition: the most common icons (paintbrush, hand, magnifying glass, etc.) are reused over and over again in different applications, with the same meaning each time.
Example	 <p>Figure 2-20. Photoshop CS5</p>
Real World Examples	Figma, MS Paint, Adobe XD, etc

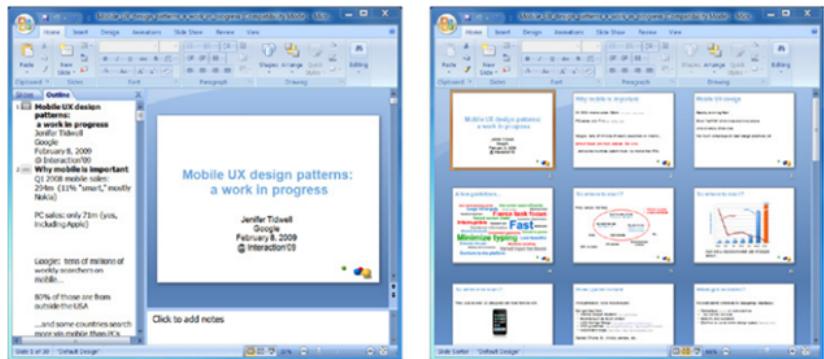
Name of the pattern	Wizard
What	Lead the user through the interface step by step to do tasks in a prescribed order.

When	<p>Tasks that seem well suited for this approach tend to be either branched or very long and tedious—they consist of a series of user-made decisions that affect downstream choices.</p> <p>“Don’t make me think, just tell me what to do next.” Think about moving through an unfamiliar airport—it’s often easier to follow a series of signs than it is to figure out the airport’s overall structure. You don’t get to learn much about how the airport is designed, but you don’t care about that.</p>
Why	<p>Divide and conquer. By splitting up the task into a sequence of chunks, each of which can be dealt with in a discrete “mental space” by the user, you effectively simplify the task. You have put together a pre-planned road map through the task, thus sparing the user the effort of figuring out the task’s structure—all he needs to do is address each step in turn, trusting that if he follows the instructions, things will turn out OK.</p>
Example	
Real World Example	Pitch.com, Windows setup (for the first time), Wix website builder.

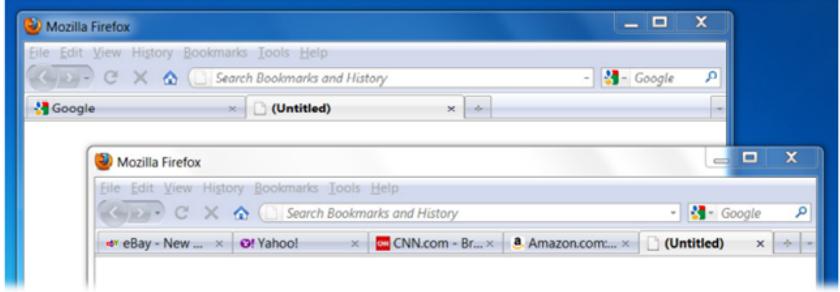
Name of the pattern	Settings Editor
What	Provide an easy-to-find, self-contained page or window where users can change settings, preferences, or properties. Divide the content into separate tabs or pages, if you need to manage large numbers of settings
When	?????
Why	?????

Example	 <p>Figure 2-28. Mac OS system preferences</p> 
Real World Examples	Windows control panel, Linux display settings menu, profile settings WhatsApp,

Name of the pattern	Alternative Views
What	User choose among alternative views that are substantially different from the default view
When	You may face design requirements that directly conflict with each other. You can't find a way to show both feature set A and feature set B at the same time, so you need to design both separately and let the user choose between them.

Why	<p>Reasons for alternative views:</p> <ol style="list-style-type: none"> 1. A user might need to temporarily view data through a different “lens” or perspective in order to gain insight into a problem. Consider a map user switching between views of street information and topographic information. 2. If a user is editing a slideshow or website, for instance, he may do most of his editing while using a “structural” view of the document containing editing handles, markers for invisible content, layout guides, private notes, and so on. But sometimes he will want to see the work as an end user would see it.
Example	 <p>Figure 2-34. PowerPoint alternative views</p>
	 <p>Figure 2-33. Google Maps</p>
Real world examples	Google Maps, MS power point, Figma design + prototype

Name of the pattern	Many Workplaces
What	Use multiple top-level tabs, tab groups, and windows so that users can view more than one page, project, file, or context at a time.
When	You're building an application that views or edits any type of content—websites, documents, images, or entire projects that include many files.

Why	<p>People often multitask, they go off tangents, abandon train of thoughts, stop working on task A and switch to task B, and then eventually come back to something they left hanging.</p> <p>Side by side comparison between two or more can help people learn and gain insights.</p>
Example	 <p>Figure 2-37. Firefox windows and tabs</p>
Real world examples	Chrome Browser, VS Code, Recent tabs in mobile.

Name of the pattern	Multilevel Help
What	Use a mixture of lightweight and heavyweight help techniques to support users with varying needs.
When	When we are designing a complex system and we need to cater all kinds of users. Some users may need a full-fledged help system, but you know most users won't take the time to use it. You want to support the impatient or occasional user too, to the extent you can. In particular, you might need to tailor your design for intermediate-to-expert users.
Why	Users of almost any software artifact need varying levels of support for the tasks they're trying to accomplish . Someone approaching it for the first time ever (or the first time in a while) needs different support than someone who uses it frequently. Even among first-time users, enormous differences exist in commitment level and learning styles. Some people want to read a tutorial, some won't; most find tool tips helpful, but a few find them irritating.

<p>Example</p>	<p>Figure 2-44. Firefox input prompts</p> <p>Some dialogs attempt to describe themselves, as shown in Figure 2-45.</p>
<p>Real world examples</p>	<p>VS Code, MS word,</p>

3. Define

a. Signpost

Ans: Signpost are the features that helps user to figure out their surroundings. Common signposts include page and window titles, web page logos, and other branding devices, tabs. The **patterns include Sequence Maps, Breadcrumbs and Annotation Scrollbar**, they tell user where they currently are and where often where they can go by with just one jump, they help user to stay “found” and to plan his next steps.

b. Wayfinding

Ans: Wayfinding is about **what people do in order to find their way to their goals**.

4. Helpful features for wayfinding

i. Good Signage

- a. A Clear and Unambiguous label anticipate** what you are looking for and tell you where to go, sign is where we expect to be and **we are never left standing at a decision point without guidance.**
- b. Example:** we can check this by walking through an artifact we are designing and following the paths of all the major use cases. Make sure that each point where a user must decide where to go next is signed or labelled appropriately.

5. Environmental Clue

- a. Discuss:**
- b. Example:**

6. Maps

- a. Discuss**
- b. Example**

common-sense features help users with wayfinding:

Good signage

Clear, unambiguous labels anticipate what you're looking for and tell you where to go; signs are where you expect them to be, and you're never left standing at a decision point without guidance. You can check this by walking through the artifact you're designing and following the paths of all the major use cases. Make sure that each point where a user must decide where to go next is signed or labeled appropriately. Use strong "calls to action" on the first pages that a user sees.

Environmental clues

You'd look for restrooms in the back of a restaurant, for instance, or a gate where a walkway intersects a fence. Likewise, you would look for an "X" close button at the top right of a modal dialog and logos in the upper-left corner of a web page. Keep in mind that these clues are often culturally determined, and someone new to the culture (e.g., someone who's never used a given operating system before) will not be aware of them.

Maps

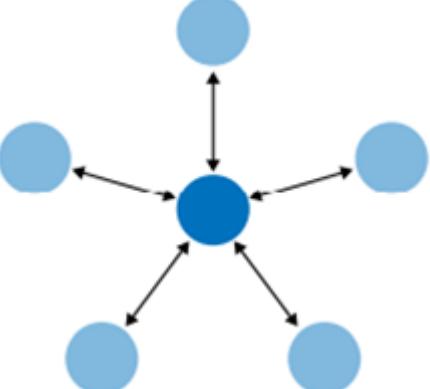
Sometimes people go from sign to sign or link to link without ever really knowing where they're going in a larger frame of reference. (If you've ever found your way through a strange airport, that's probably what you did.) But some people might prefer to have a mental picture of the whole space, especially if they're there often. Also, in badly signed or densely built spaces, such as urban neighborhoods, maps may be the only navigational aids people have.

5. Navigational Models

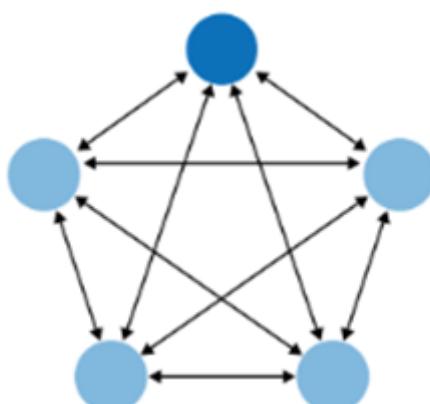
Definition: How do the different screens links to each other, and how do users move between them.

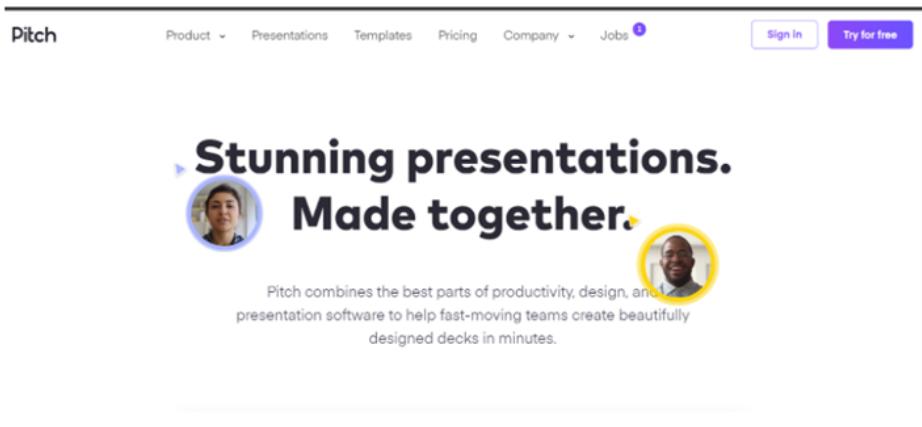
Types: Global Navigation, Utility Navigation, Associative and Inline Navigation

- a. Hub and Spoke
- b. Fully Connected
- c. Multi-Level
- d. Step Wise
- e. Pyramid

Name of the Navigational Model	Hub and Spoke
What	Most often found on mobile devices, this architectur lists all the major parts of the site or app on the home screen, or “hub.” The user clicks or taps through to them, does what she needs to do, and comes back to the hub to go somewhere else.
Diagram	

<p>Example</p>	
<p>Apply for the given scenario: Windows Desktop screen.</p>	

<p>Name of the Navigationa l Model</p>	<p>Fully Connected</p>
<p>What</p>	<p>Many websites follow this model. There's a home page or screen, but it and every other page link to all the others—they each have a global navigation feature, such as a top menu. As long as the user can reach any page from any other with a single jump, it's fully connected.</p>
<p>Diagram</p>	

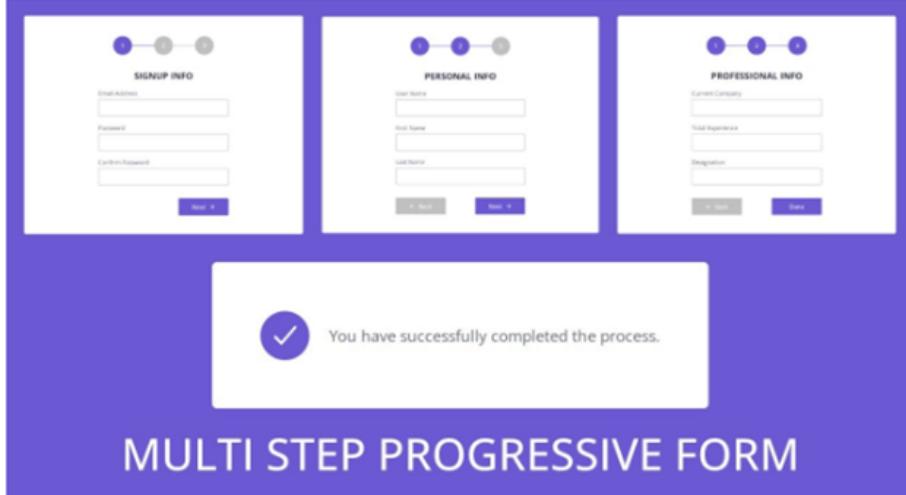
Example	 <p>Pitch combines the best parts of productivity, design, and presentation software to help fast-moving teams create beautifully designed decks in minutes.</p>
Apply for the given scenario	

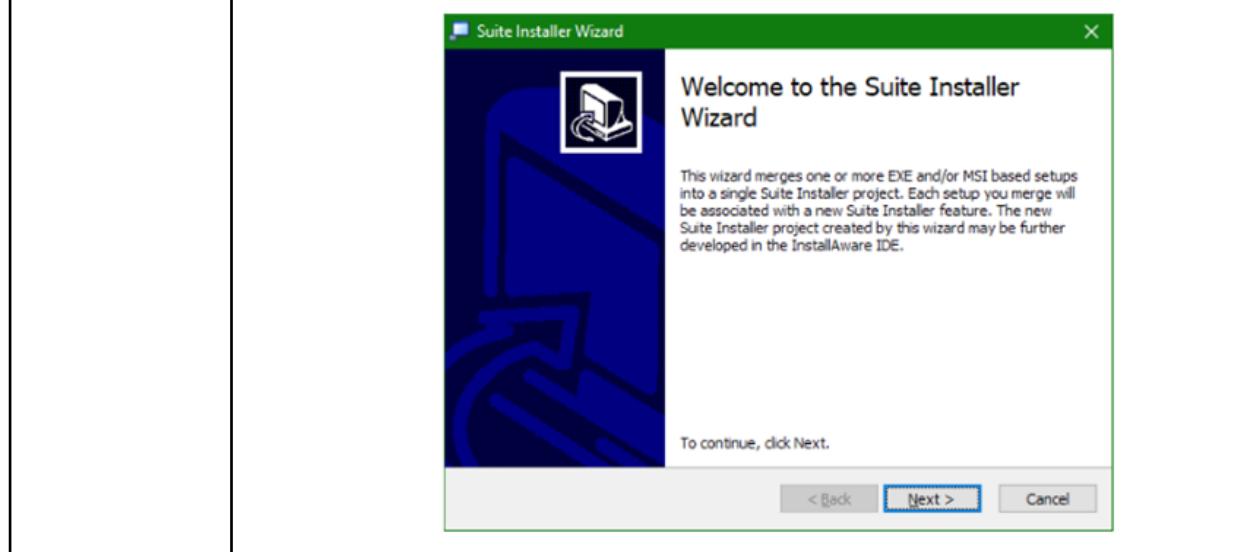
Name of the Navigational Model	Multi-level
What	This is also common among websites. The main pages are fully connected with each other, but the subpages are only connected among themselves (and usually to the other main pages, via global navigation). You've seen this on sites that have subpages listed only in sidebars or subtabs—users see these on menus that only show up after they've clicked the link for the main page or category.

Diagram	<pre> graph TD A(()) --> B(()) A(()) --> C(()) A(()) --> D(()) A(()) --> E(()) B(()) --> F(()) B(()) --> G(()) B(()) --> H(()) C(()) --> I(()) C(()) --> J(()) C(()) --> K(()) D(()) --> L(()) D(()) --> M(()) D(()) --> N(()) E(()) --> O(()) E(()) --> P(()) F(()) --> Q(()) F(()) --> R(()) F(()) --> S(()) G(()) --> T(()) G(()) --> U(()) G(()) --> V(()) H(()) --> W(()) H(()) --> X(()) I(()) --> Y(()) I(()) --> Z(()) J(()) --> AA(()) K(()) --> BB(()) L(()) --> CC(()) M(()) --> DD(()) N(()) --> EE(()) O(()) --> FF(()) P(()) --> GG(()) Q(()) --> HH(()) R(()) --> II(()) S(()) --> JJ(()) T(()) --> KK(()) U(()) --> LL(()) V(()) --> MM(()) W(()) --> OO(()) X(()) --> PP(()) Y(()) --> QQ(()) Z(()) --> RR(()) AA(()) --> RR(()) BB(()) --> SS(()) CC(()) --> TT(()) DD(()) --> UU(()) EE(()) --> VV(()) FF(()) --> WW(()) GG(()) --> XX(()) HH(()) --> YY(()) II(()) --> ZZ(()) JJ(()) --> AA(()) KK(()) --> BB(()) LL(()) --> CC(()) MM(()) --> DD(()) OO(()) --> FF(()) PP(()) --> GG(()) QQ(()) --> HH(()) RR(()) --> II(()) SS(()) --> JJ(()) TT(()) --> KK(()) UU(()) --> LL(()) VV(()) --> MM(()) WW(()) --> OO(()) XX(()) --> PP(()) YY(()) --> QQ(()) ZZ(()) --> RR(()) </pre>
Example	<p>The FY B.Tech application form based on MHT-CET 2022 (Phase-9 Round-2) is now open.</p> <p>Offer letters based on MHT-CET 2022 (Phase-9 Round-1) have been released for all meritorious candidates.</p>
Apply for the given scenario	

Name of the Navigational Model	Step Wise
What	Slideshows, process flows, and Wizards lead the user step by step through the screens in a prescribed sequence. Back/Next links are prominent on the page.



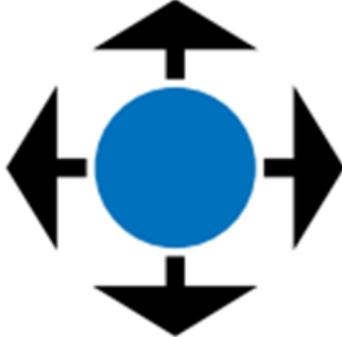
Example	
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	<p>Apply for the given scenario</p>
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Name of the Navigation	Pyramid
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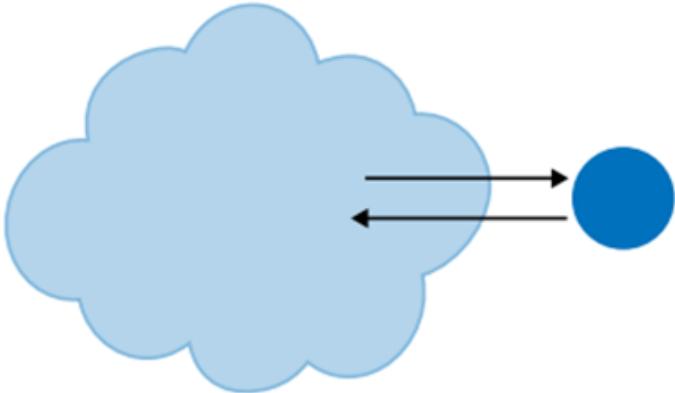
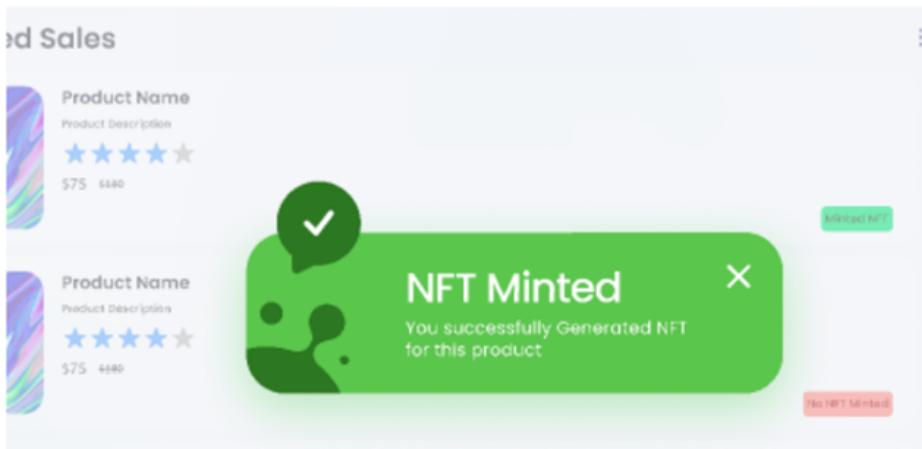
nal Model	
What	<p>It is a type of stepwise model, where it uses a hub model to list an entire sequence of items or subpages in one place, the user picks out any item, jumps to it, and then has an option to use Back/Next links to step through other items in order. He can go back to hub page anytime.</p>
Diagram	<pre> graph TD Top(()) --> C1(()) Top --> C2(()) Top --> C3(()) Top --> C4(()) C1 <--> C2 C2 <--> C3 C3 <--> C4 </pre>
Example	<p>Figure 3-17. Photoshop help tutorials</p> <p>The figure shows a hierarchical structure of Photoshop help pages. At the top is a 'Tutorials' hub page with links to various topics. Below it are three specific tutorial pages: 'Image correction made easy with the Levels command', 'Remove red-eye in images', and 'Create an image using layers'. Each of these sub-pages has a back arrow pointing to the hub page above it.</p>

	<p>Linux basics</p> <ul style="list-style-type: none"> • What is Linux? • Is Linux Unix? • Where can I get Linux? • How to find the kernel or distro of Linux. • Linux shell tutorial. • Linux vs. Windows. • Full listing of all Linux, Unix, and variant commands and their syntax. • Linux tips and tricks. • Linux, Unix, and related companies and their contact information. • The history of Linux and Unix.
Apply for the given scenario	
Name of the Navigational Model	Pan and Zoom
What	Some artifacts are best represented as single large spaces, not many small ones. Maps, large images, large text documents, information graphics, and representations of time-based media
Diagram	

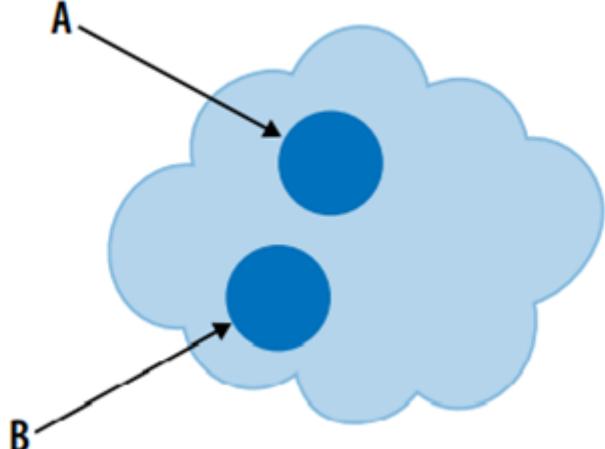
Example	
Apply for the given scenario	

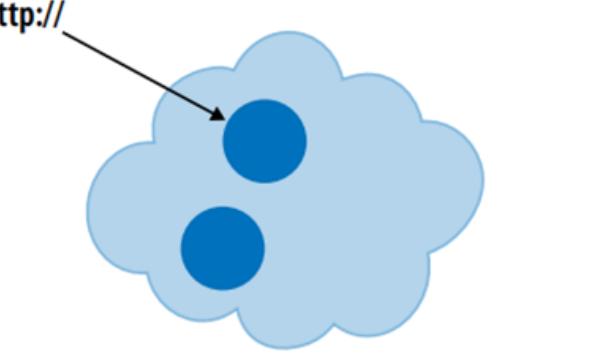
Name of the Navigational Model	Flat Navigation
What	<p>Some types of applications need little or no navigation at all. Consider Canvas Plus Palette applications such as Photoshop, or other complex apps such as Excel—these offer tons of tools and functions that are easily reached via menus, toolbars, and palettes. Tools that don't act immediately upon the work may be accessible via Modal Panels or step-by-step progressions. These types of applications seem to be qualitatively different from the other navigation styles listed here: the user always knows where he is, but he may not easily find the tools he needs because of the sheer number of features available at one time.</p>
Diagram	
Example	
Apply for the given scenario	

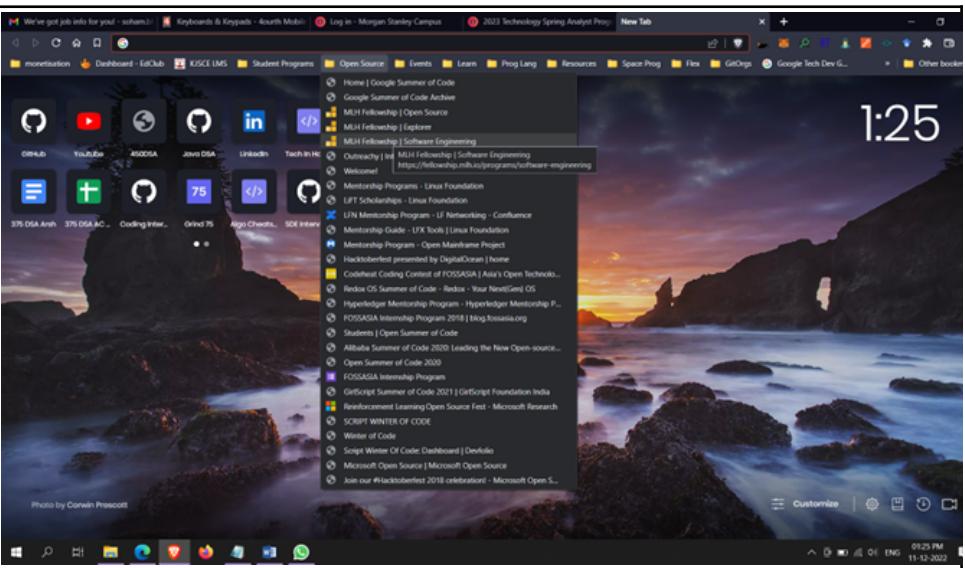
Name of the Navigational Model	Model Panel
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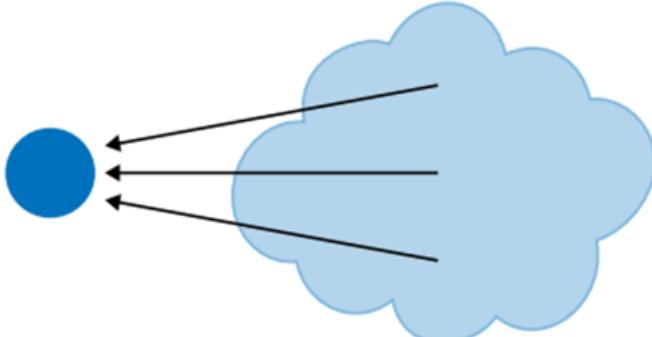
What	This brings a user to a screen with no navigation options other than acknowledging its message, completing its form, or clicking the panel away. Modal panels often show up layered on top of a full screen or page, and are used for small, focused tasks that require the user's full attention.
Diagram	 A diagram illustrating a modal panel. It features a large, light blue cloud-like shape representing the main application screen. A smaller, solid blue circle represents a modal panel. Two horizontal arrows point from the center of the blue circle towards the right edge of the blue cloud, indicating that the modal is positioned over the main screen.
Example	 A screenshot of a mobile application interface. On the left, there are two product cards for "Red Sales". Each card shows a thumbnail image, the product name, a star rating of 4.5 stars, and a price of \$75. To the right of the cards is a green modal overlay. The overlay has a white checkmark icon at the top left and the text "NFT Minted" in large white letters. Below that, it says "You successfully Generated NFT for this product". There is an "X" button in the top right corner of the overlay.
Apply for the given scenario	

Name of the Navigational Model	Clear entry points
What	How does a user know where to start in a complex site or app? The Clear Entry Points pattern shows him where to go first. For first-time and infrequent users, it removes some of the burden of learning the site

Diagram	 A diagram showing a light blue cloud shape containing two dark blue circular nodes. Two arrows point from the labels 'A' and 'B' to the top and bottom nodes respectively.
Example	
Apply for the given scenario	

Name of the Navigational Model	Bookmarks
What	Bookmarks, permalinks, deep links, and Deep-linked State are all ways for a user to conveniently navigate to a point of his choice, anytime he wants, even if it's deep inside a navigational structure. These give him a way to avoid traversing many links to get to a desired page or state.
Diagram	 A diagram showing a light blue cloud shape containing two dark blue circular nodes. An arrow points from the text 'http://' to the top node.

Example	 <p>A screenshot of a Windows desktop. A context menu is open over a file named 'MUA Fellowship Software Engineering'. The menu contains several items, including 'Home Google Summer of Code', 'Google Summer of Code Archive', 'MUA Fellowship Open Source', 'MUA Fellowship Laptoper', 'MUA Fellowship Software Engineering', 'Outreachy Int', 'MUA Fellowship Software Engineering', 'Mentorship Programs - Linux Foundation', 'LFT Scholarship - Linux Foundation', 'Mentorship Guide - LFT Tools Linux Foundation', 'Mentorship Program - Open Mainframe Project', 'Hacktoberfest presented by DigitalOcean home', 'CodeWeave Coding Content of FOSSASIA Asia's Open Technolo...', 'Redox OS Summer of Coder - Redox - Your NextGen OS', 'Hyperledger Mentorship Program - Hyperledger Mentorship P...', 'FOSSASIA Internship Program 2018 blog.fossasia.org', 'Students Open Summer of Code', 'Alibaba Summer of Code 2020 Leading the New Open source...', 'Open Summer of Code 2020', 'FOSSASIA Interning Programs', 'Grafana Summer of Code 2021 Grafana Foundation India', 'Reinforcement Learning Open Source Fest - Microsoft Research', 'SCRIPT WINTER OF CODE', 'Winter of Code', 'Script Winter Of Code: Dashboard Devfolio', 'Microsoft Open Source Microsoft Open Source', and 'Join our #Hacktoberfest 2018 celebration - Microsoft Open S...'. The desktop background shows a sunset over a rocky coastline.</p>
Apply for the given scenario	

Name of the Navigational Model	Escape Hatch
What	When a user is hopelessly entangled in an app, reaches an error state, or gets deep linked into a page that he has no context for understanding, he needs an escape hatch (Figure 3-10), a well-labelled link to get back to a known place.
Diagram	
Example	
Apply for the given scenario	

6. Patterns addressing the navigational model

1. Clear Entry Points

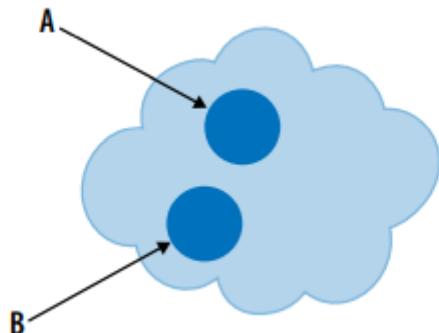


Figure 3-12. iPad page on Apple's site

2. Menu Page

The screenshot shows the Craigslist menu page with several sections:

- Community:** activities, artists, childcare, general groups, pets, events.
- Housing:** lost+found, musicians, local news, politics, rideshare, volunteers, classes.
- Jobs:** accounting+finance, admin / office, arch / engineering, art / media / design, biotech / science, business / mgmt, customer service, education, food / bev / hosp, general labor, government, human resources, internet engineers, legal / paralegal, manufacturing, marketing / pr / ad, medical / health, nonprofit sector, real estate, retail / wholesale, sales / biz dev, salon / spa / fitness, security, skilled trade / craft, software / qa / dba.
- Personals:** strictly platonic, women seek women, women seeking men, men seeking women, men seeking men, misc romance, casual encounters, missed connections, rants and raves.
- For Sale:** appliances arts+crafts, antiques, auto parts, barter, baby+kids, bikes, beauty+itch, boats, cars+trucks, books, cds/dvd/vhs, business, cell phones, computer, clothes+acc, free, collectibles, furniture, electronics, general, farm+garden, jewelry, garage sale, materials, household, rvs, motorcycles, pets, real estate, retail / wholesale, sales / biz dev, salon / spa / fitness, security, skilled trade / craft, software / qa / dba.
- Discussion Forums:** 1099, gifts, pets, apple, haiku, philos, arts, health, politic, atheist, help, psych, autos, history, queer, beauty, housing, recover.
- Event Calendar:** SMTWTFS, dates from 27 to 24.
- Links:** swingset, for sale, haiti earthquake relief, avoid scams & fraud, personal safety tips, craigslist blog, craigslist factsheet.
- Other Cities:** albany, boston, cape cod, catskills, eastern ct, glens falls, hartford, hudson valley, long island, maine, new hampshire, new haven, new york, north jersey, northwest ct, rhode island, south coast, vermont, western mass, kentucky, louisiana, maine, maryland, mass, michigan, atlanta, austin, chicago, dallas, denver, detroit, houston, las vegas.
- US States:** alabama, aleksa, arizona, arkansas, califonia, colorado, connecticut, de, delaware, florida, georgia, guam, hawaii, idaho, illinois, indiana, iowa, kansas, kentucky, louisiana, maine, maryland, mass, michigan, minnesota, mississippi, missouri, montana, n carolina, n hampshire, nebraska, new hampshire, new jersey, new mexico, new york, ohio, oklahoma, oregon, pennsylvania, rhode island, tennessee, utah, vermont, virginia, washington, west virginia, wisconsin.
- Countries:** argentina, australia, austria, bangladesh, belgium, brazil, canada, caribbean, chile, china, colombia, costa rica, croatia, czech repub, denmark, ecuador, egypt, finland, france, germany, great britain, greece, hong kong, hungary, india, indonesia, ireland, israel, italy, japan, korea.

Figure 3-14. Craigslist

3. Pyramid

Pyramid

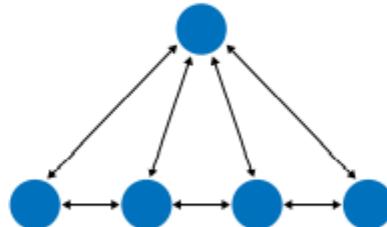


Figure 3-18. Pyramid schematic

4. Modal Panel

Modal Panel

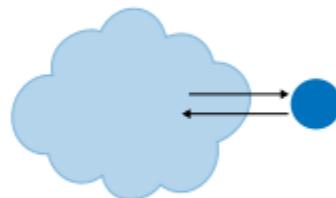


Figure 3-22. Modal Panel schematic

5. Deep-linked State

Deep-linked State

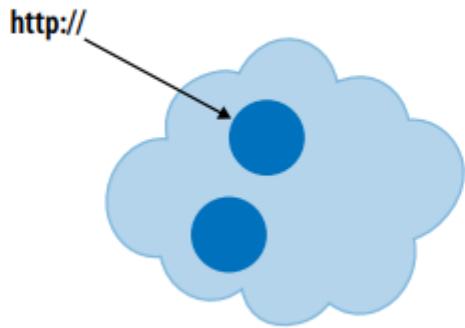


Figure 3-26. Deep-linked State schematic

6. Escape Hatch

Escape Hatch

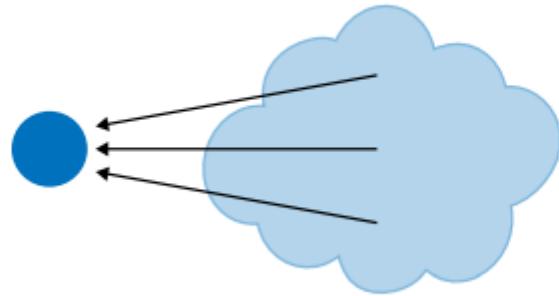


Figure 3-30. Escape Hatch schematic

7. Fat Menu

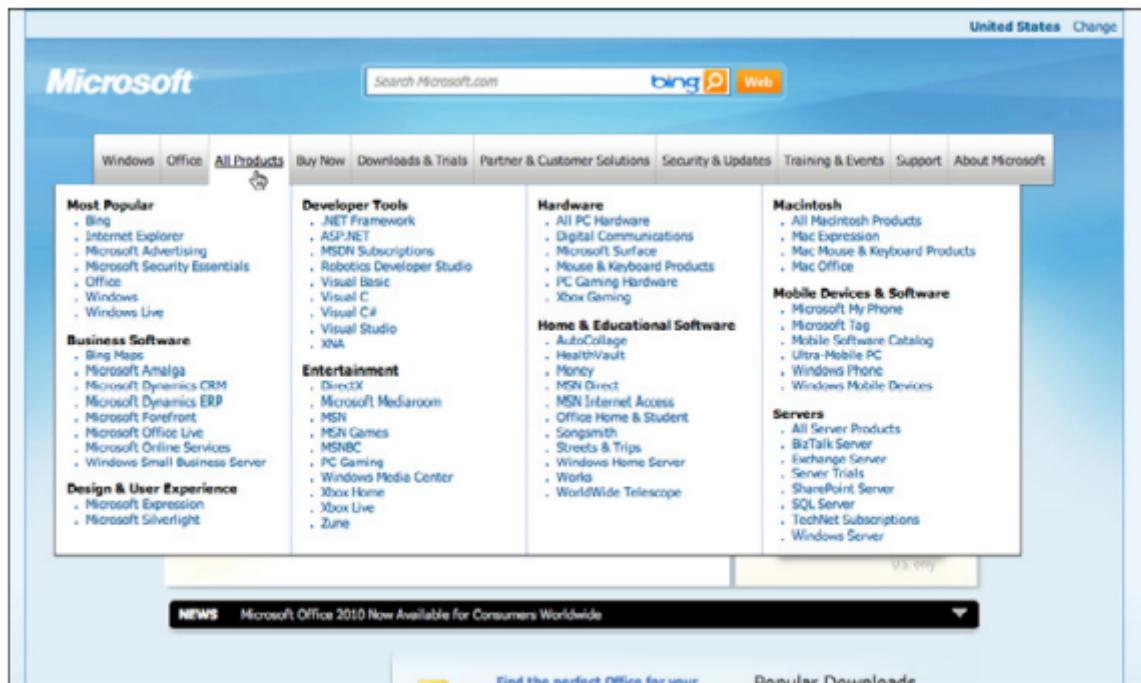


Figure 3-33. Microsoft's All Products menu

8. Sitemap Footer

Sitemap Footer



Figure 3-38. Whole Foods footer

9. Sign in Tools

Sign-in Tools



Figure 3-44. Flickr sign-in tools

10. Sequence Map

Sequence Map

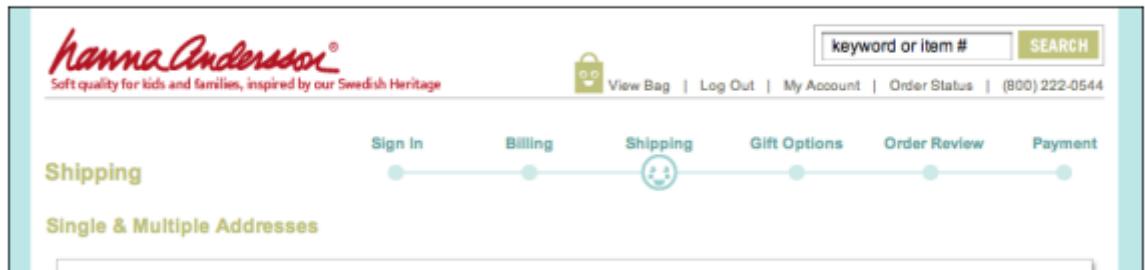


Figure 3-48. Hanna Andersson order sequence map

11. Breadcrumb

Breadcrumbs



Figure 3-52. Target breadcrumbs

12. Annotated Scrollbar

Annotated Scrollbar

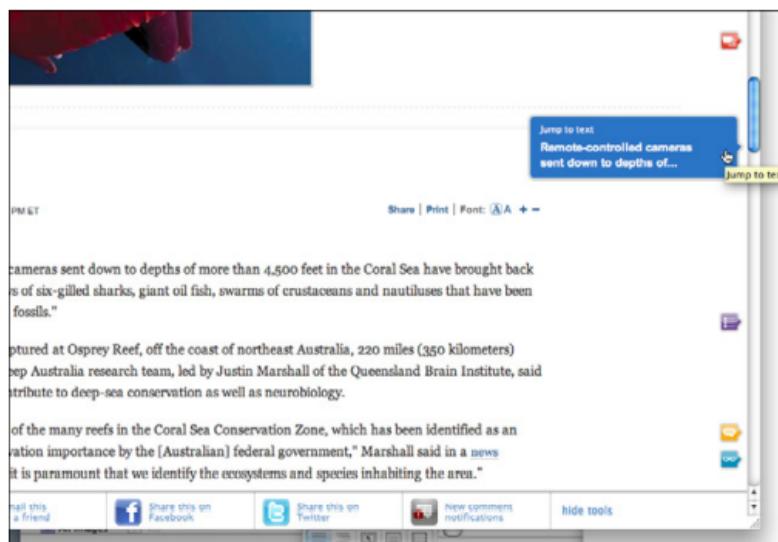


Figure 3-56. MSNBC scrollbar showing page sections

Name of the pattern addressing the navigational model	
What	
When	
Why	
Example	
Apply for the given scenario	

* **If more than one pattern is asked, one screen per pattern will be enough**