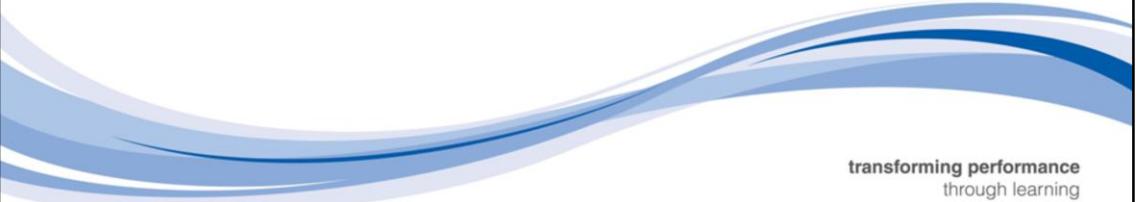




# UX Fundamentals

The Skeleton Plane



A decorative graphic consisting of several overlapping, curved blue lines of varying shades, creating a sense of depth and motion at the bottom of the page.

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## The Skeleton Plane

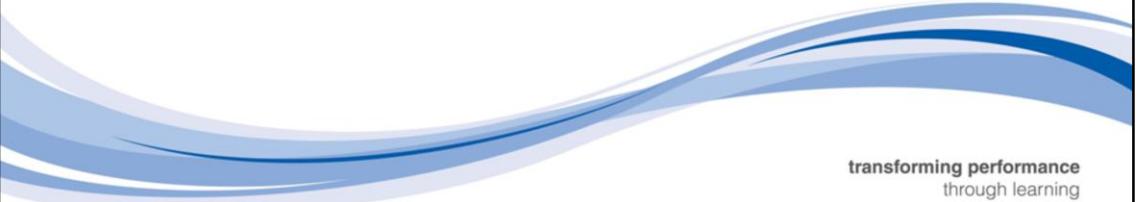
- **The skeleton plane defines the form and functionality**
  - Addressing more concrete issues of presentation at an abstract level
    - The high fidelity nature of colours etc... occur in the surface plane
- **The skeleton is defined through:**
  - Interface design – buttons, fields and the like
  - Navigation design – effective journeys through the application
  - Information design – presentation of information in layout
- **These areas are linked together but best considered separately**
  - Then linked together

## Deliverables

- **Interface Design**
- **Navigation**
- **Information Design**
- **Wireframes**



## Navigation



A decorative graphic at the bottom of the page features a series of overlapping, curved blue lines that resemble waves or flowing water, positioned centrally below the navigation section.

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## Navigating Multiple Screens

- Allows large amounts of data to be displayed without the user navigating to it from another application
- Decisions can be made with multiple sources of information displayed without obscuring each other, or breaking the user's flow

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Multi-screen or multi-monitor setups are a boon to user productivity as they allow for data to be displayed on a separate monitor that is independent of what is being worked on but important for helping the user make important decisions without navigating away from where they are.

## Navigating Multiple Views or Pages

- **Navigating among multiple application views or pages is disorienting for the user**
- **Usually results in obscuring information in order to display the different page or view**

## Navigation Between Tools and Menus

- Tools that are used frequently and in conjunction with each other should be grouped together
- They should also be immediately available rather than hidden within a menu
- Frequently used functions should be provided in toolbars or palettes rather than in a menu where they cannot be seen prior to clicking
- Menus should be used for infrequently accessed commands

## Navigating Information

- Scrolling is often necessary, but attempts should be made to minimise the need for it whenever possible
- Linking is the predominant navigation method of the web, but requires care to be taken to ensure that visual and textual clues are provided for the user to be oriented
- Zooming and panning are particularly useful in 3D navigation, but are less useful when examining arbitrary or abstract data provided in more than two dimensions



Users find panning and zooming to be difficult to navigate unless the idiom supports the concept

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Users find panning and zooming to be difficult to navigate unless the idiom supports the concept

Maps are one area where they understand the concept

## Improving Navigation

- **Reduce the number of places to go**
- **Provide Signposts and overviews**
- **Provide appropriate mapping of controls to functions**
- **Avoid Hierarchies**

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Provide appropriate mapping of controls to functions

Gas cookers are usually terrible at this; at best they give you an idea which half of the stove the gas burner you are turning the knob for will be located

## Sitemaps

- **Sitemaps allow us to pull together the structure of a website/app**
  - It shows the structure of the site and how pages link together
  - It is a to-do list showing what wireframes need to be constructed
  - It can be used to ratify content strategies and user journeys
- **A sitemap lays out the key pages of a website - not the whole site**
  - Full scale maps go out of date very quickly
  - The sitemaps shows the main structure of the website
- **They aid UX analysis in the following ways:**
  - Current content audits
  - When structure needs to be reviewed and improve
  - When creating a new website

## Sitemaps Communicate User Goals

- **A sitemaps shows the pages that support the user goals**
  - Plus the pages necessary to support the business goals
- **A sitemap needs to show the structure of the key pages**
  - Plus navigation patterns to be applied
- **We can use data previous applied in analysis (e.g. card sorts)**
  - To identify labels and nomenclature
- **A sitemap is an important document for the designer/developer**
  - It layouts out documents to be taken to wireframe

## Sitemaps show Conceptual and Mental Models

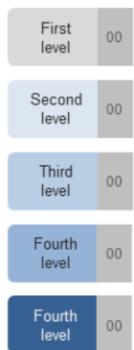
- **Sitemaps are a mental model – they can represent cross links**
  - When navigation categories are not hierarchical but tasks conjoin
    - Do not go over the top with this you will create a spaghetti mess!
- **Page may change when users login or interact – altering the conceptual model**
  - Sitemaps can show if this happens
  - Make notes and visualise different wireframes
- **Sitemaps do not show how a user moves through your website**
  - Sitemaps are political documents

## Who Needs Sitemaps?

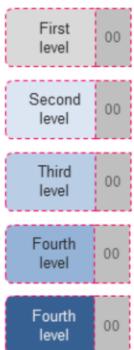
- **Sitemaps benefit a number of technical roles in UX development:**
  - Designers
    - A sitemap shows what wireframes/mockups need to be produced
    - It can guide where templates and widgets should be constructed
  - Content Teams
    - Content teams need to know what is to be produced
    - It can work with a content mapping strategy to create more content
  - SEO Teams
    - SEO teams need to know structure to advise on strategy
  - Project Managers
    - PMs can use a sitemap to understand high level structure
    - While not overwhelming with content

## Sitemap Elements

Page labels



Cross links



Pages with missing content



Page group outline



Logged in area



Other page types



PDF download



Send text message

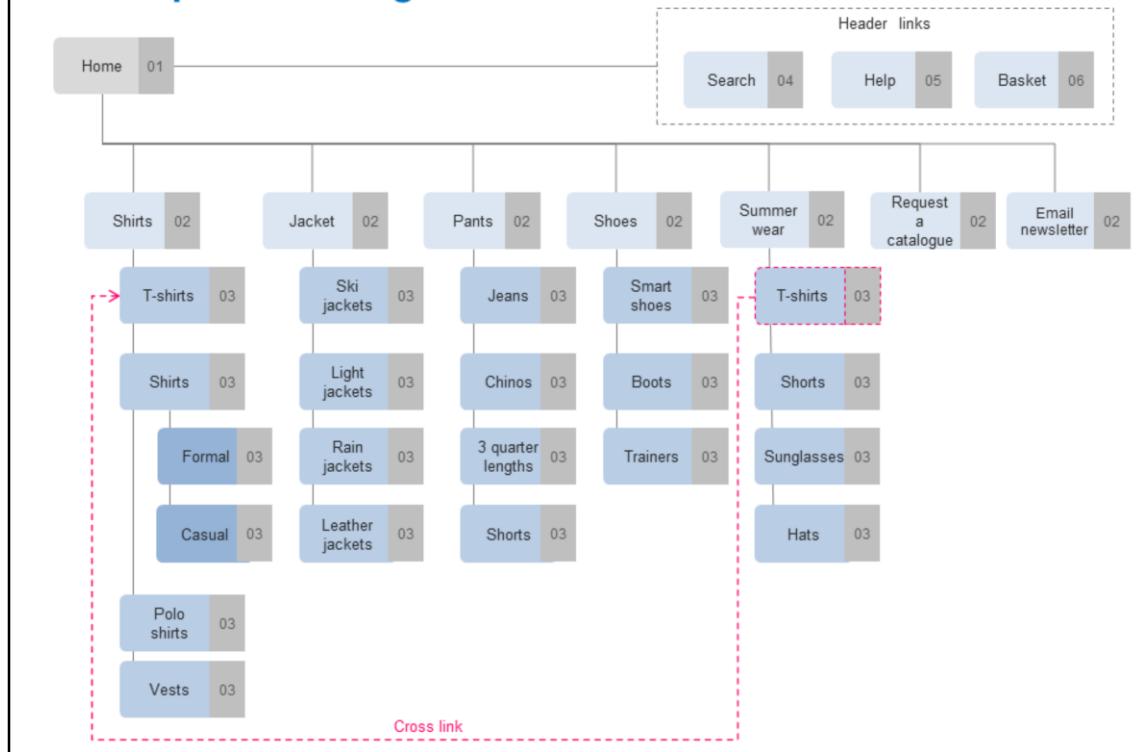


Send Email

Connectors



## Example - Clothing Site



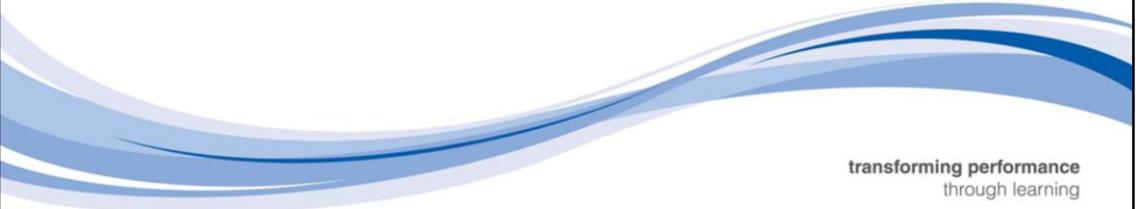
## Exercise – Implementing a Sitemap

Using the evidence from our card sorting investigation earlier in the course create and implement a Sitemap for the cinema website.

Identify template/repeating links, searchable links, and the structure of the navigation. Consider where some links and user journeys may overlap.



## Designing Interactions



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A large, stylized graphic element consisting of several overlapping blue and white curved bands that curve upwards from left to right, resembling a wave or a stylized 'M' shape.

## Understanding the Design Principles



### Interaction design is not guesswork

- User Interfaces should be based on user mental models rather than implementation models
- Goal-directed interactions reflect user mental models



### Significant Change must be significantly Better

## Understanding the Design Principles

- Nobody wants to remain a beginner
- Optimise for intermediate users



Imagine that your users are very intelligent, but extremely busy



Do not make the user feel stupid

## Understanding the Design Principles



**Focus the design for each interface on a single primary persona**

- Define what the product will do before you design the how



**In early stages of design, pretend that the interface is magic**

- There is only one user experience, and as such form and behaviour must be designed in concert with each other

## Behaviour and Form

- Decisions about the technical platform should be made in concert with interaction design efforts
- Optimise sovereign applications for full-screen use
- Sovereign interfaces should feature a conservative visual style
- Maximise document views within sovereign applications

## Behaviour and Form

- **Transient applications must be simple, clear, and to the point**
- **Transient applications should be limited to a single window and a single view**
- **An application should launch to its previous position and configuration**
- **Kiosks should be optimised for first time users**

## Behaviour and Form



**No matter how impressive your interface is, less of it would be better**

- **Follow users' mental models**



**Less is more**

- **Keep tools close at hand**

## Behaviour and Form

- **Let the user stay in control**
- **Provide modeless feedback**
- **Design for the probable but provide for the possible**
- **Contextualise all information**

## Behaviour and Form

- Reflect object and application status with visual indicators
- Avoid unnecessary reporting
- Do not use dialogs to report normality
- Avoid blank slates

## Behaviour and Form

- **Provide choices rather than asking questions**



**Optimise for responsiveness; nothing kills the user experience faster than poor performance**

- **The computer does the work and the user does the thinking**
- **Software should behave like a considerate human being**

## Behaviour and Form

- If it is worth the user entering, it is worth the application remembering
- Most people would rather be successful than knowledgeable
- Good idioms need only be learned once



**Never bend your interface to fit a metaphor**

## Behaviour and Form

- **Eliminate waste and clutter whenever possible**
- **Do not stop proceedings with idiocy**
- **Visually distinguish between elements that behave differently**
- **Visually communicate function and behaviour**

## Behaviour and Form



**Obey standards unless there is a truly superior alternative**

- **Consistency does not imply rigidity**



**Strip things out of your design until it breaks. They put the last thing back**

## Interaction Details



**An error may not be your fault, but it is your responsibility**

- **Have a good reason for going to a dialog box**
- **Provide functions in the window where they are used**
- **Use links for navigation and buttons for actions**

## Interaction Details

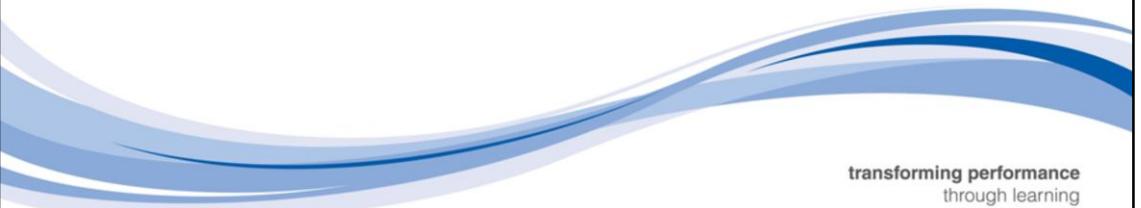
- **Disable menu items when they are not applicable**
- **Use consistent visual symbols**



**Make all actions reversible**



## Interaction Flow



A decorative graphic at the bottom of the slide features several overlapping, flowing blue and white curved lines that resemble water or a wave.

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## What is Flow?



- When users are able to concentrate wholly on an activity they lose awareness of peripheral problems and distractions.
- It is a “condition of deep, nearly meditative involvement”



**When a user is in a state of flow they can be extremely productive**



Flow: The Psychology of Optimal Experience by Mihaly Csikszentmihalyi

Peopleware: Productive Projects and Teams by Tom DeMarco and Timothy Lister

## Flow

 As the user is more productive, it is desirable to ensure that nothing distracts them or breaks their “flow”



No matter how fancy your interface is, less of it is better

Less is more

Follow users' mental models

- **Keep tools close at hand**

## Flow



**Provide feedback that does not rely on modal dialogues**



**Design for the probable, as well as providing for the possible**

- **Contextualise information**
- **Avoid unnecessary reporting**

## Flow

- **Do not use dialogs to report normal results or activity**
- **Avoid providing the user with a blank slate**
- **Provide choices rather than asking questions**



**Optimise for responsiveness: Nothing breaks flow like poor performance**



## Wireframing

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## What is a Wireframe



- A blueprint or schematic that represents the skeletal framework of a website or application
- It is created as part of a design process to help arrange elements in a design
- It depicts a layout or arrangement of content, interface elements, and navigation systems and how they interact with each other
- Most will lack any visual similarity to the look and feel of the end product

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A wireframe is a blueprint or schematic that represents the skeletal framework of a website or application. They are created as part of any design process to help arrange elements to best serve a chosen purpose as defined by the specifications laid out for the project.

It depicts a page layout or arrangement of the content, interface elements (widgets etc.) and navigation systems, and how they interact with each other.

Most will lack any visual resemblance to the end product in their look and feel, as the purpose is to focus on the functionality, behavior and hierarchy rather than what it looks like.



## What is a Wireframe

- **Wireframes can be pen and pencil drawings**
- **They can be produced by a wide range of software applications**
- **They are not beholden to any particular platform or medium**

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Wireframes can be pen and pencil drawings on paper or a whiteboard, or they can be produced by a wide range of software that range from specialist applications such as Axure or Omnigraffle, to illustration applications such as Photoshop or Illustrator.

## The Focus of a Wireframe



- **Type of information displayed**
- **Range of functions available**
- **Relative priorities**
- **Rules of information display**
- **Scenario display**

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They focus on

- The type of information displayed
- The range of functions available
- The relative priorities of the information and functions
- The rules for displaying different types of information
- the effect of different scenarios on the display

## Types of Wireframe

- **Low fidelity**
  - Rough sketches or mockups that are quick to produce with low levels of detail
- **High fidelity**
  - Higher level of detail, suitable for use in project documentation

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### Different types of wireframes

#### ***Low fidelity***

Sometimes referred to as “Scamps”

These are rough sketches or quick mockups that have little detail and are quick to produce. These wireframes are more abstract, allowing the project team to collaborate more quickly. They use simple shapes such as circles and rectangles with labelling to represent content, or may include dummy or symbolic content to represent data which is unavailable.

#### ***High fidelity***

These incorporate a higher level of detail, this take longer to create. These are usually what you will see in project documentation, as the level of detail more closely resembles the design of the final product.

For simple or low-fidelity drawings, paper prototyping is a common technique. Since these sketches are just representations, annotations—adjacent notes to explain behaviour—are useful. For more complex projects, rendering wireframes using computer software is popular. Some tools allow the incorporation of interactivity including Flash animation, and front-end web technologies such as, HTML, CSS, and JavaScript.

## Elements of a Wireframe

- **The structure of an application can be broken down into three components**
  - Information design
  - Navigation design
  - Interface design
- **Wireframing is what depicts the relationship between these components**

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## Elements of a Wireframe

The skeleton plan of an application can be broken down into three components: information design, navigation design, and interface design. Page layout is where these components come together visually, while wireframing is what depicts the relationship between these components

### Information Design

Information design is the presentation—placement and prioritization of information in a way that facilitates understanding. Information design is an area of graphic design, meant to display information effectively for clear communication. Information elements should be arranged in a way that reflects the goals and tasks of the user

### Navigation Design

The navigation system provides a set of screen elements that allow the user to move page to page through a website or application. The navigation design should communicate the relationship between the links it contains so that users understand the options they have for navigating the site. Often, websites contain multiple navigation systems such as a global navigation, local navigation, supplementary navigation, contextual navigation, and courtesy navigation.

## Elements of a Wireframe

- **The structure of an application can be broken down into three components**
  - Information design
  - Navigation design
  - Interface design
- **Wireframing is what depicts the relationship between these components**

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## Interface Design

User interface design includes selecting and arranging interface elements to enable users to interact with the functionality of the system. The goal is to facilitate usability and efficiency as much as possible. Common elements found in interface design are action buttons, text fields, check boxes, radio buttons and drop-down menus

## Wireframe Symbols

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When it comes to wireframes, whilst there are common solutions, it usually comes down to boxes and labels.

Any labelling or marking is to aid in instant recognition of what you are representing. As long as you visually convey your message, it does not matter what symbols you are using.

Wireframe example taken from <http://www.netmagazine.com/features/10-simple-ways-make-wireframes-more-useful>

## The Language of Wireframing



- **Widgets**
  - Any control or GUI element that displays information that is changeable by the user
- **Text**
- **Graphic Elements**
  - Any artwork that is displayed.

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### Explain the following

#### Widgets

A GUI widget or control is an element of a graphical user interface (GUI) that displays information that is changeable by the user, such as a window or a text box. The defining characteristic of a widget is to provide a single interaction point for the direct manipulation of a given kind of data. i.e. widgets are basic visual building blocks which, combined in an application, hold all the data processed by the application and the available interactions on this data.

#### Text

Self explanatory

#### Graphic Elements

Any artwork that is displayed. This includes icons, pictures, and textures

#### Alignment grids

A set of invisible lines that content is “snapped to”

It is a way of reducing visual clutter, creating clean and evenly spaced layouts, and maintaining coherency across a product or product line.

#### Icons

A pictogram Graphic Element that is displayed to help the user navigate the system, or understand the data presented.

They are designed to be easily comprehensible and as such are stripped of extraneous detail.



## The Language of Wireframing

### ■ Alignment grids

- A set of invisible lines that content is “snapped to”
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They are designed to be easily comprehensible and as such are stripped of extraneous detail.

## Whiteboard Wireframing Exercise



Take 15 minutes and prepare a single low fidelity wireframe on the whiteboard as a group.

The wireframe is for User Stories and Task Analysis you performed earlier in this course.

Draw on the white board, iterating and interacting with each others design concepts. Nothing in this design is to be considered final until time runs out.

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There should be a single wireframe, that includes concepts on navigation and interaction.

If the candidates look like they are splitting off into separate groups, nudge them back together; they are working on the wireframe as a whole, and doing it as a group.

If they are presenting different wireframes, tell them to pick the elements that they like, and work it into the main wireframe.

Encourage them to erase, revise, and iterate on the whiteboard; you want them to get used to a dynamic design session where it is about throwing ideas out and seeing what does and does not work. Remind them that there are no bad ideas; only ideas that aren't right for *\*this\** scenario, and that they will get better results by throwing those ideas up, and discarding them later than if they thought about them before they threw them up there.

## Exercise – Wireframe Sketch sheets



Split into smaller groups of 2-3, and take 15 minutes to design a higher fidelity wireframe that you can use as a paper prototype for the cinema website on the sketch sheets.

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Split into smaller groups where they take the concepts that were developed as a whole, and start to draw a higher fidelity paper prototype.

## Further Reading



**For more information on Wireframing, see**  
<http://www.netmagazine.com/features/10-simple-ways-make-wireframes-more-useful>



**See the “User Interface Elements” hand-out**

## Interactive Prototypes

- **Interactive prototypes are usually built as a series of HTML pages**
- **They can also be built in Flash and similar technologies**
- **They are usually reserved for higher level Wireframes to be used for user or usability testing, or to impress stakeholders**



### See Also: Rapid Prototyping

<http://www.uxforthemasses.com/rapid-prototyping/>

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You're probably thinking "Why can't I do this as a series of web pages?" since it's a fairly straight forward set of static designs that are navigated through containing mainly boxes and text.

The answer is that you can.

In fact, this is what most interactive prototypes are; a set of static html pages that can be navigated through to simulate the application.

If your end product is in HTML/CSS you may even find yourself building on your wireframes, adding more detail and refinement until they have been transformed into a releasable product.

Also known as Rapid Prototyping, this is the current trend for replacing the High-Fidelity wireframes, as it is easier to maintain, more user friendly, and much quicker to create.

## Review

- **The skeleton frame is where a digital product takes shape**
  - Its aim is to map user goals and stories into pages/screen
  - Your project will consider and implement a navigation strategy
- **Remember to reinforce the structure through the user focused evidence**