



Module II. Technical

6. Info
graphic
course

Topic 1. Design Process
and Visual Design Basics
in UX

Lesson 2.
Visual Language and
Principles



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This lesson has been prepared to improve the knowledge and skills about the creation of visual contents in UX.

The principles presented are a basic tool for developing beautiful and usable designs.

This applies both to the **user interfaces** and to the **static** or **interactive infographics**.

In this lesson, we will learn:

The language of images and the Visual Design Principles in UX, focusing on the **GESTALT** theory of perception.



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The language of images



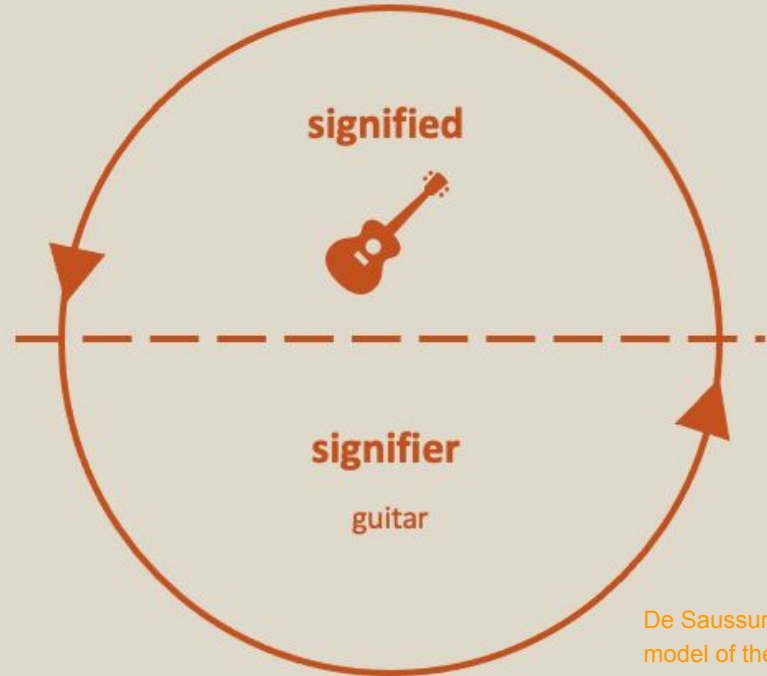
Photo credits by Museums Victoria, Unsplash

As well as in the design of interactive systems, also in the design and creation of a graphic project, it is fundamental to know **what message** you want to send and **what target** you want to communicate with through a **shared code**.

The sign

The sign is everything that conveys meaning and can be used to represent something else.

It is made up of **two components**: the **signified** (the plane of content, i.e. the meaning or concept the sign represents) and the **signifier** (the plane of expression, i.e. the form that the sign takes and by which the meaning is expressed).



De Saussure's
model of the sign.

The index



Photo credits by Dan Calderwood, Unsplash

We have an index when the signs are linked by **cause-and-effect** in space and time.

In this case, the sign does not represent the idea itself, but something, **a piece of evidence**, referring to it.

For example, the smoke indicates that probably there is a fire in the building.

The symbol



A symbol is a sign that is usually meaningful **by convention** and is often abstract.

Generally, it has **no resemblance** between the **signifier** and the **signified**. It is used to represent information commonly understood. In the picture on the right, there are symbols culturally learned: numbers and alphabet letters.



Photo credits by Amador Loureiro, Unsplash

The icon

An icon is a sign that describes the idea without any convention applied to it. In User Interfaces, as well in infographics, the icon can be considered as a **small picture** that represents an **object** or content category...



... allowing to quickly find the needed content zone or function.

Photo credits by Joeartcon, NounProject

The Pictogram

Pictograms are images (icons or sometimes symbols) that have clear **pictorial similarities** with some **objects**. Some pictograms have the same meaning at the **international level** and help in sharing clear information and ideas.



On the left a pictogram generally used on the road signals.

Photo credits by Parkjisun, NounProject



Photo credits by Hal Gatewood, Unsplash

Visual Design Principles in UX

There are several **design principles** that impact the UX of **User Interfaces** and **infographics**.

In the picture you can see some examples!

In this lesson, we will focus on the **Gestalt principles** since they are psychological principles about the perception that **explain** how **humans make sense of images**.

5 Visual-Design Principles in UX

Visual-design principles inform us how design elements go together to create well-rounded and thoughtful visuals. Graphics that take advantage of the principles of good visual design can drive engagement and increase usability.

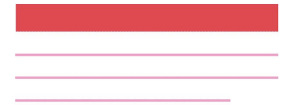
SCALE

The principle of scale refers to using relative size to signal importance and rank in a composition.



VISUAL HIERARCHY

The principle of visual hierarchy refers to guiding the eye on the page so that it attends to design elements in the order of their importance.



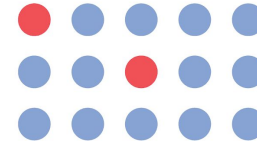
BALANCE

Balance occurs when there is an equally distributed amount of visual signal on both sides of an imaginary axis.



CONTRAST

The principle of contrast refers to the juxtaposition of visually dissimilar elements in order to convey the fact that these elements are different.



GESTALT PRINCIPLES

Gestalt principles capture our tendency to perceive the whole as opposed to the individual elements.



Source: <https://www.nngroup.com/articles/principles-visual-design/>



Gestalt is a German word meaning “form” or “shape” that in this context is interpreted as “pattern” or “configuration”.

Generally, it refers to a set of principles defined by a **school of psychology** in the early 20th Century.

The Gestalt theory focuses on how humans perceive the whole image as opposed to its individual elements, following the adage: **“the whole is more than the sum of their parts”**.

Among the most known, that govern perception phenomena, there are:

Similarity - Proximity - Closure - Common Region - Continuity - Symmetry - Past experience.

Principle of Similarity

The definition of this Gestalt law states that **elements that share a visual characteristic** are perceived as more **related** than elements that are dissimilar.

Our brain **perceives as one group** elements that appear similar, e.g. in colour, shape, or size.



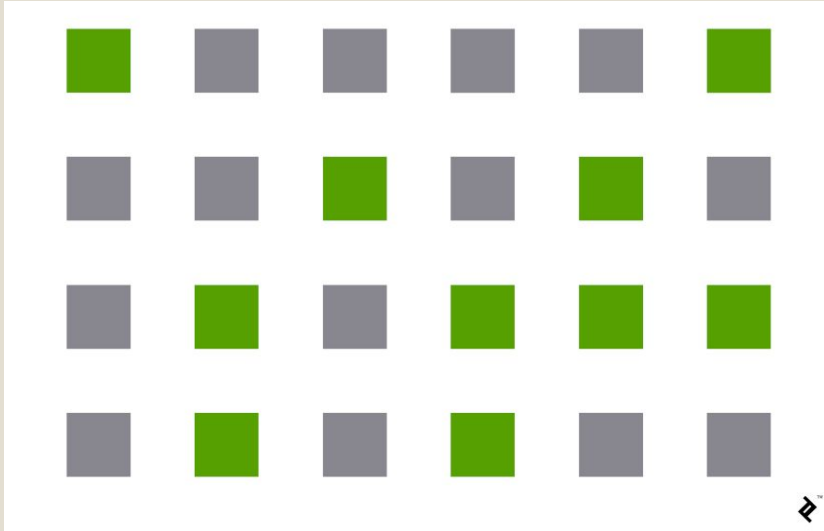


Fig. 1

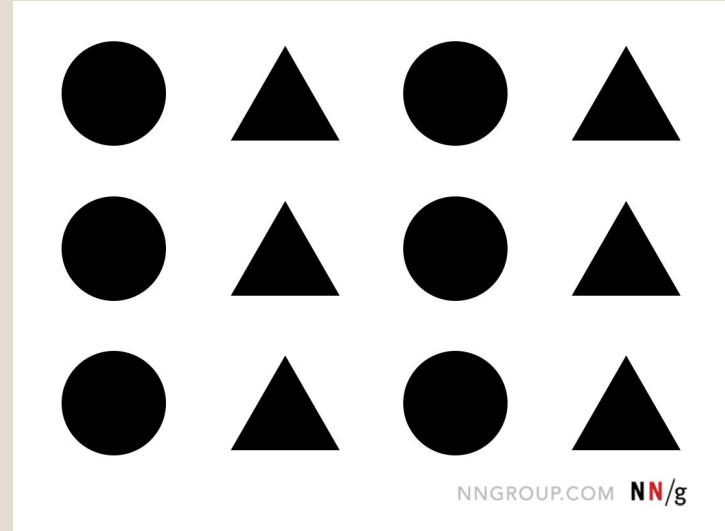


Fig. 2

That's why we **automatically group elements by colour** (Fig.1) or **by shape** (Fig.2).

Source of Fig. 1: <https://www.toptal.com/designers/ui/gestalt-principles-of-design>

Source of Fig. 2: <https://www.nngroup.com/articles/gestalt-similarity/>



Photo credits by Drahomír Postebý-Mach, Unsplash

Principle of Proximity

The proximity law suggests that the human eye tends to perceive **objects** that are **placed together** to be more **related** than the ones far apart.

When individual elements in a project are grouped into an area or group, users will recognize it as a **single entity** distinct from anything else.

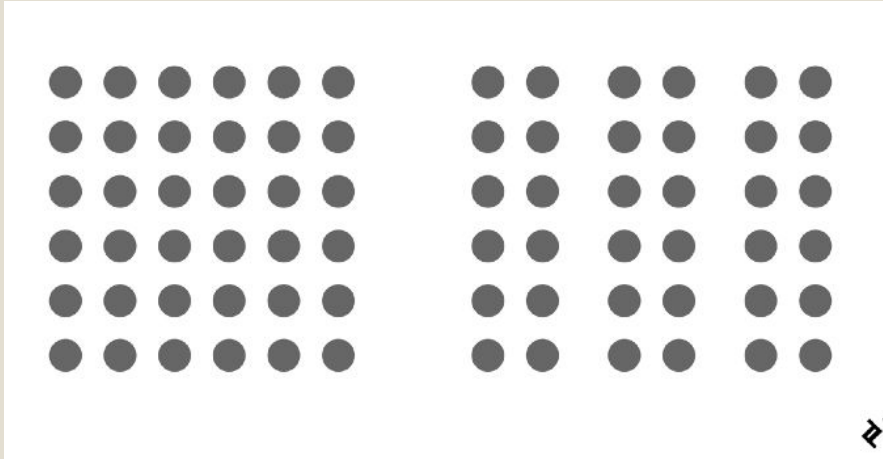


Fig. 3



Fig. 4

In both pictures, **contents are organized and grouped** according to the proximity principle. In Fig. 4, this allows to quickly define which text is referred to a specific image.

Source of Fig. 3: <https://www.toptal.com/designers/ui/gestalt-principles-of-design>

Source of Fig. 4: <http://www.casagrotta.it>

Principle of Closure

This law suggests that our mind prefers **complete shapes** and tends to automatically create familiar images.

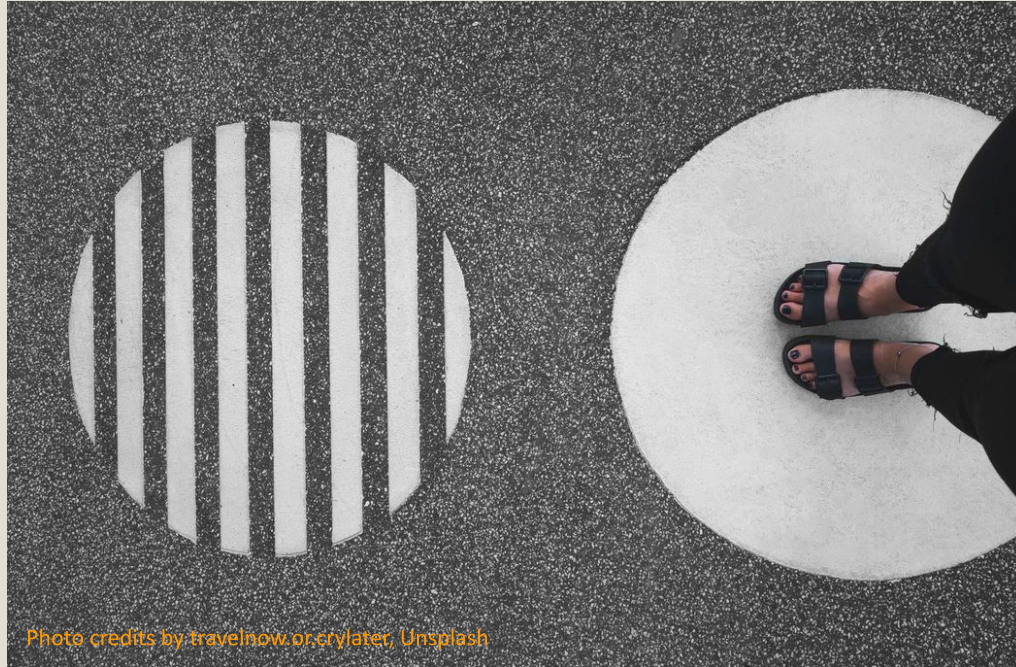


Photo credits by [travelnow.or.cr/ylater](https://www.travelnow.or.cr/ylater), Unsplash

We naturally fill in the gaps between elements to **perceive** them as a **whole**.



Fig. 5



Fig. 6



Fig. 7

That's why we see a panda (in the WWF logo), a peacock (in the NBC logo) and two figures kissing (in the Picasso's artwork).

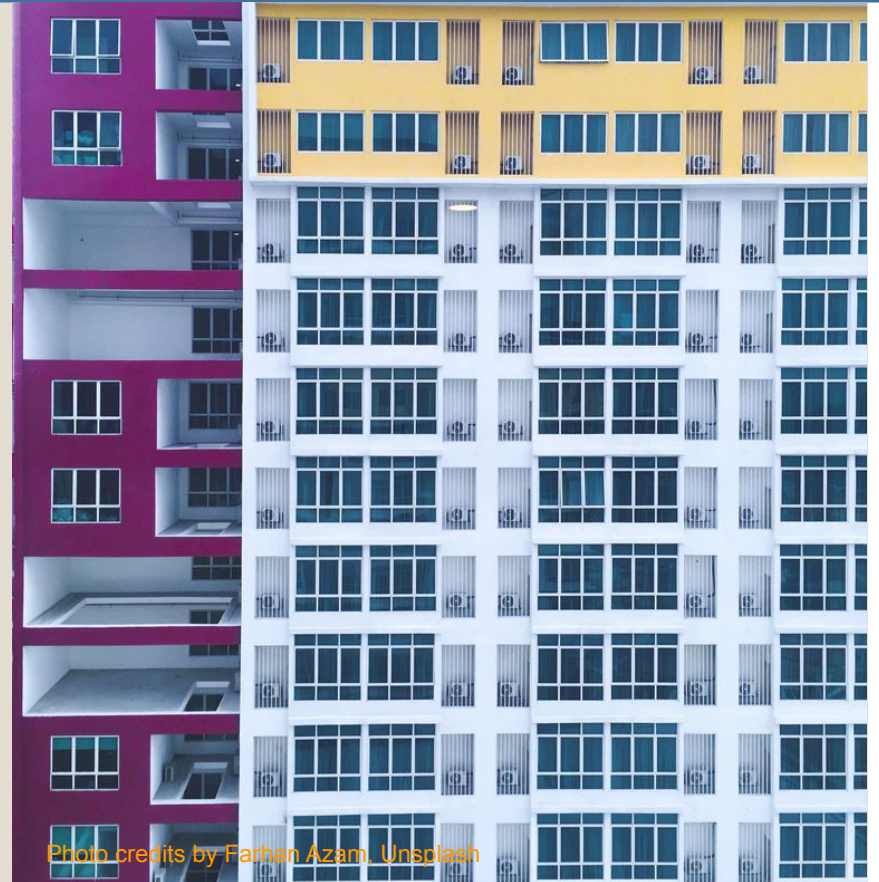
Source of Fig. 5: <https://www.toptal.com/designers/ui/gestalt-principles-of-design>

Source of Fig. 6: <https://www.nngroup.com/articles/principles-visual-design/>

Source of Fig. 7: <https://www.nngroup.com/articles/principles-visual-design/>

Principle of Common Region

According to the general definition, “The common region principle says that objects **within a boundary** are **perceived as a group** and are assumed to share some common features or functionality”.



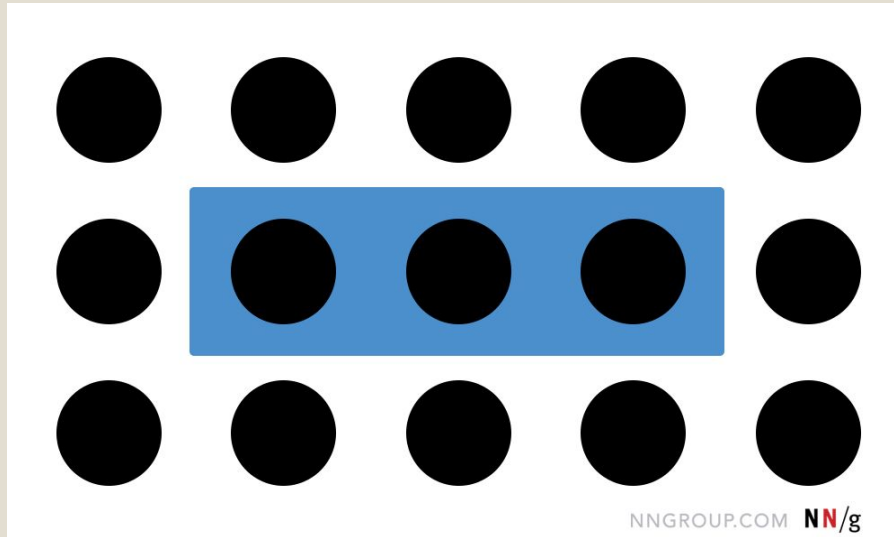


Fig. 8

In Fig. 8 you can see how the **border** around the three central circles makes them appear as a **distinct group**.

Source of Fig. 8: <https://www.nngroup.com/articles/common-region/>

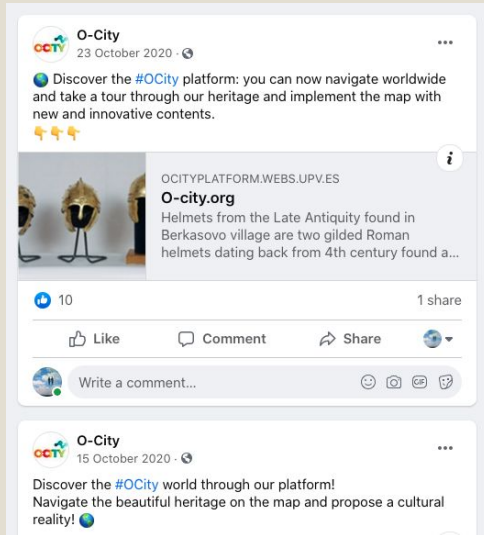


Fig. 9

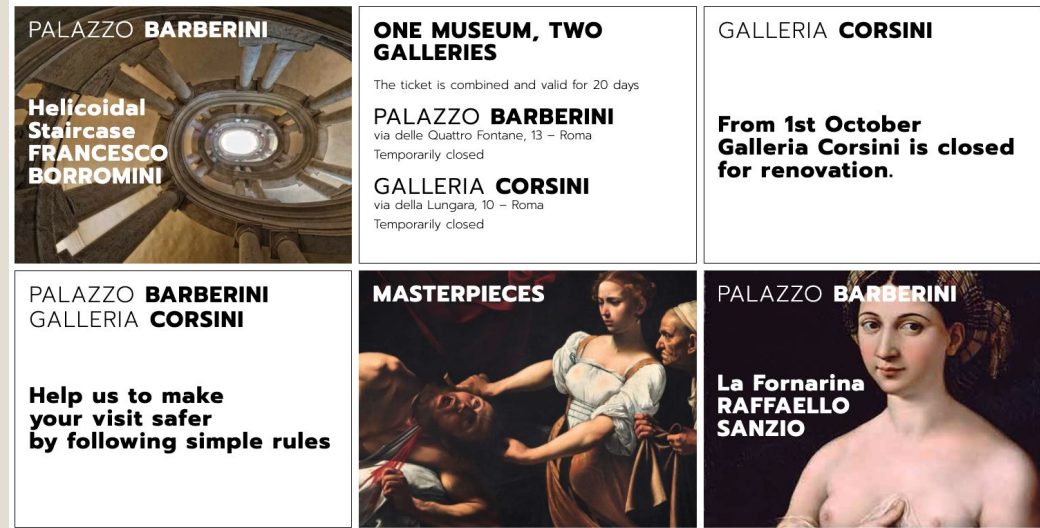


Fig. 10

UIs with **well-organized sections** make it **easier** to recognize and **to interact** with the system, as it is shown by the Facebook posts and the museum website.

Source of Fig. 10: <https://www.barberinicornorsini.org/en/>

Principle of Continuity

This law states that the human eye tends to follow a **continuous path** considering objects arranged in lines or curves as more related or being part of the same group.

In visual design, we can apply this principle **to guide the visitor's gaze** on the simplest path on the page.



Fig. 11

In Fig. 11, the eye tends to follow the line perceived across the letters. In this way, the line connects the main shape with another one, the eagle, **bringing the attention on it.**

The logo is perceived as a whole, since all the elements are **well-connected** and **readable** in a **specific order**.

Source of Fig. 11: <https://www.nekobrandstudio.com/blog-logo-design-brand/gestalt-principles-theory-logo-design>

Principle of Symmetry

The law of Symmetry and Order says that since **human nature prefers order** over chaos, people tend to perceive objects as **symmetrical shapes** whenever possible.

A good shape is simple, regular, and as a consequence “stable” and objects that are balanced and symmetrical are seen as a **whole**.

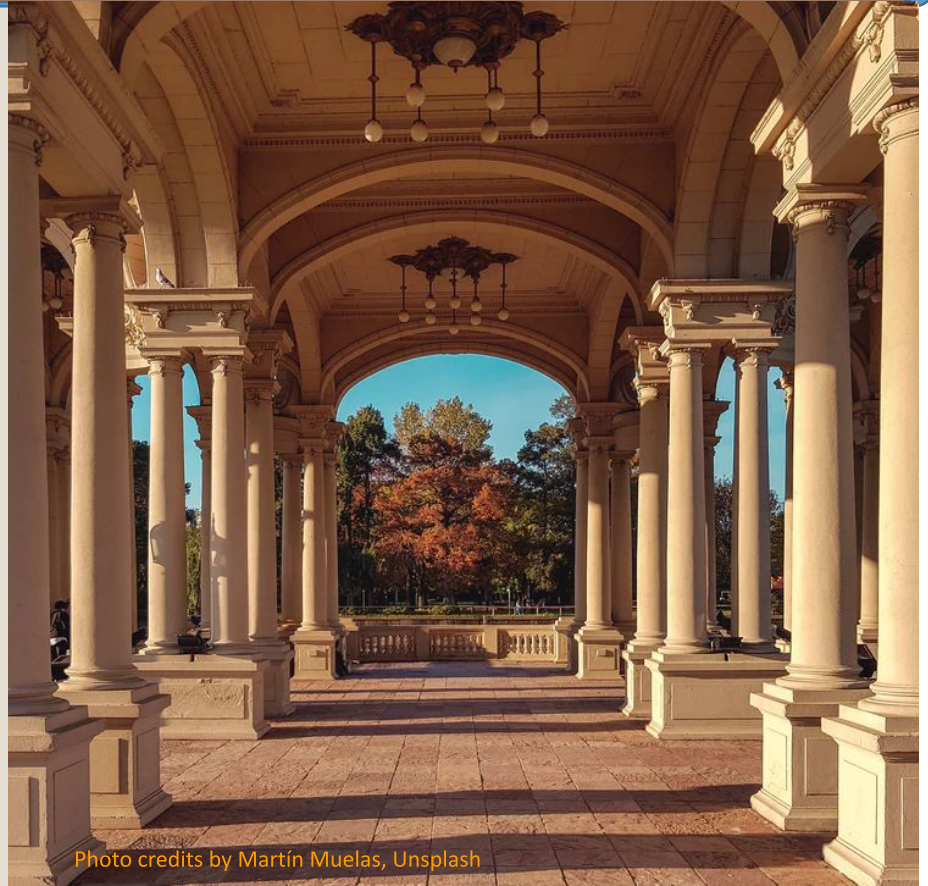


Photo credits by Martín Muelas, Unsplash

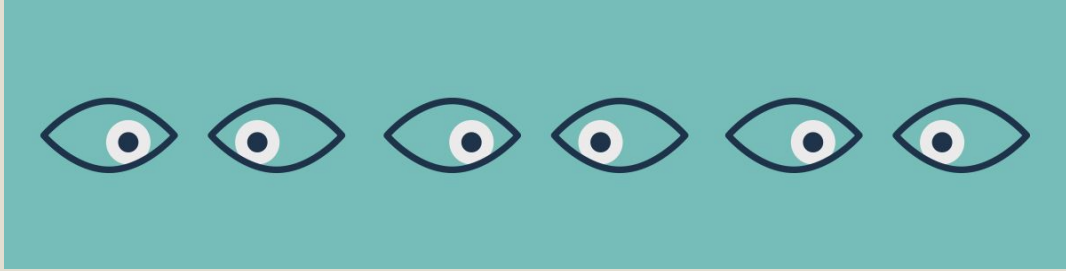


Fig. 12

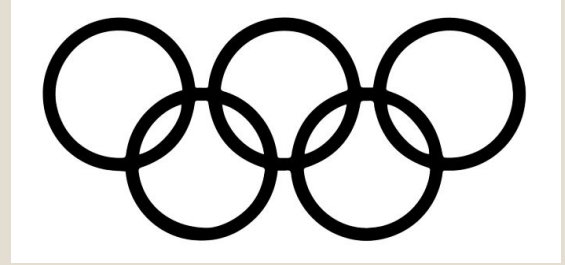


Fig. 13

That's why we see three sets of eyes in Fig. 12.

A good shape is also the one that **needs less information to be understood**, as you can see in the monochromatic version of the Olympic logo (Fig. 13) that doesn't suggest to us a collection of curved lines but a series of overlapping circles.

Source of Fig. 12: <https://visme.co/blog/gestalt-design-principles/>

Source of Fig. 13: <https://www.toptal.com/designers/ui/gestalt-principles-of-design>



Photo credits by Anita Jankovic, Unsplash

Principle of Past Experience

Despite mainly **cultural based**, our brain attempts to understand forms by associating them to what is **considered familiar**.

By looking at the sequence “18HM”, your mind likely separates numbers from letters to create two distinct groups, but it only happens because you know the Latin alphabet and the Arabic numerals.

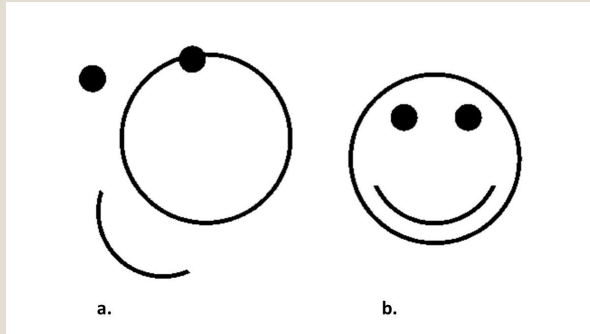


Fig. 14

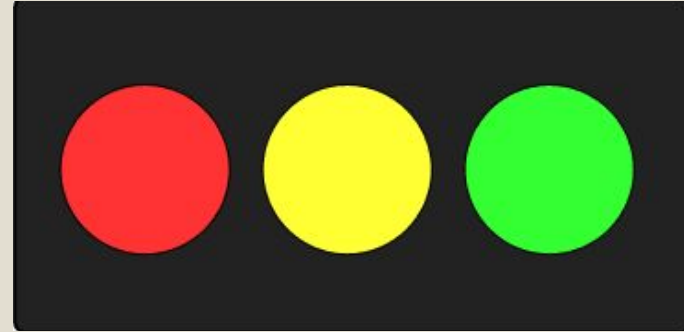


Fig. 15

In Fig. 14, despite the same graphical elements, our mind sees a smiley face only in Fig. 14b, as in that one the disposition of those elements is associated with a **well-known pattern** (eyes and mouth in a face). Fig. 15 follows the same principle: we can recognise a traffic light and not three coloured balls on a black background.

Source of Fig. 12: <https://www.designdune.com/inspiration/the-best-photos-to-illustrate-gestalt-theory/>

Source of Fig. 13: <https://www.smashingmagazine.com/2014/03/design-principles-visual-perception>

Understanding how the human brain works and then following **people's natural tendencies**, helps in creating a **smoother interaction** that makes the users feel comfortable on a website, even if it is their first visit.

Gestalt principles and the mental processes they describe allow designers to make **more conscious decisions** by predicting how people will use and interpret the UIs.

In the following examples, some of the Gestalt principles are applied to the UI design of **websites** and **applications** for **inviting a more natural interaction**. The same rules and tips can be applied to **infographics** and other **information visualizations**.



Similarity

Product Name
Description and features

Edit

Remove

Product Name
Description and features

Edit

Remove

Product Name
Description and features

Edit

Remove

Product Name
Description and features

Edit

Remove

Product Name
Description and features

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Product Name
Description and features

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Remove

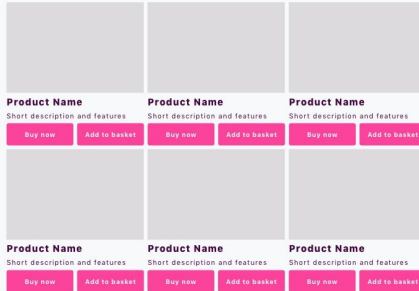


Gestalt Principles

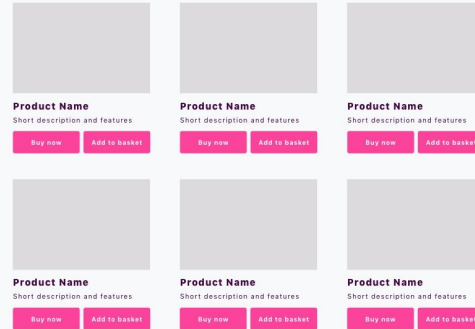
<https://uxmisfit.com>

All examples retrieved from <https://uxmisfit.com/2019/04/23/ui-design-in-practice-gestalt-principles/>

Proximity



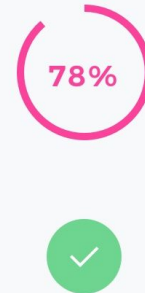
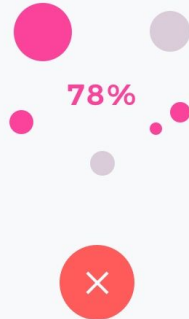
Gestalt Principles



<https://uxmisfit.com>

All examples retrieved from <https://uxmisfit.com/2019/04/23/ui-design-in-practice-gestalt-principles/>

Closure

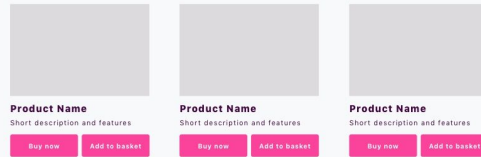
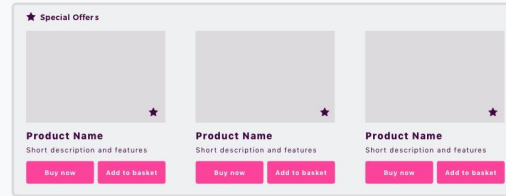
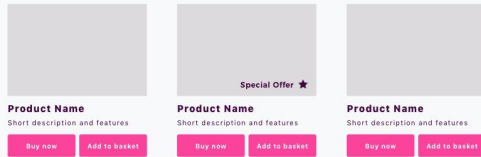
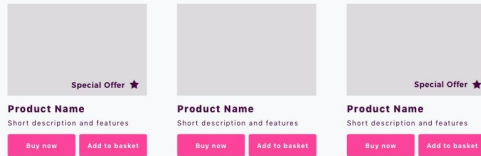


Gestalt Principles

<https://uxmisfit.com>

All examples retrieved from <https://uxmisfit.com/2019/04/23/ui-design-in-practice-gestalt-principles/>

Common Region



Gestalt Principles

<https://uxmisfit.com>

All examples retrieved from <https://uxmisfit.com/2019/04/23/ui-design-in-practice-gestalt-principles/>

Continuation

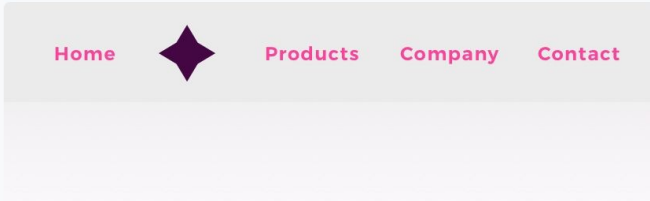


Gestalt Principles

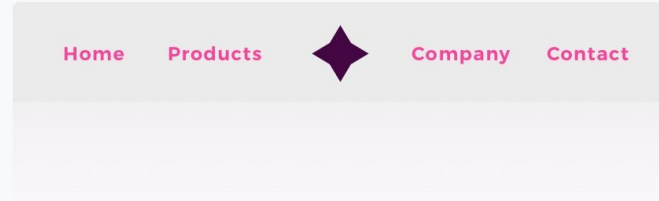


<https://uxmisfit.com>

Symmetry



Gestalt Principles



<https://uxmisfit.com>

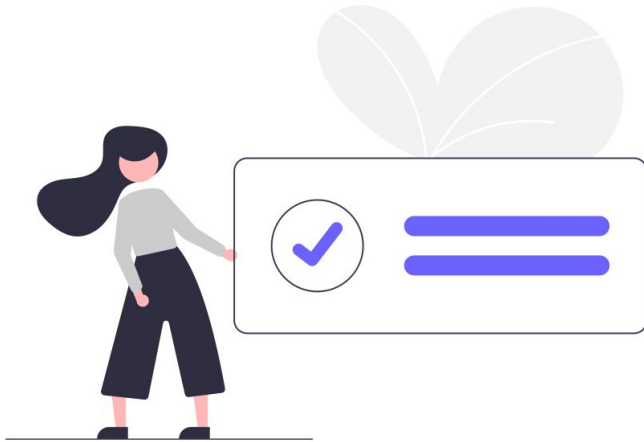
Gestalt principles are relatively easy to incorporate into any graphical project and can quickly elevate a design that looks cluttered to one that invites a natural interaction.

Specifically, the benefits derived from applying Gestalt principles are:

- **Increase usability** (results in easy-to-use layouts)
- **Provoking pleasure** (beautiful things arouse positive emotions)
- **Strengthen brand perception** (for user confidence and interest, also in natural or cultural context).

On the contrary, **misuse** of these principles can create **confusion**, especially when elements that have nothing in common appear as grouped together.





Conclusions

The principles and basics for creating visual contents in UX allows us to properly select and arrange the visual elements to be included in an infographic. Indeed, creating good visual designs effectively **drives engagement** and increases usability.

Thank you for your attention!

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