Design Course

Visual Elements
Basic and fundamental units of visual language
by
Prof. Ravi Poovaiah
IDC, IIT Bombay

Source:
https://www.dsource.in/course/visual-elements

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by
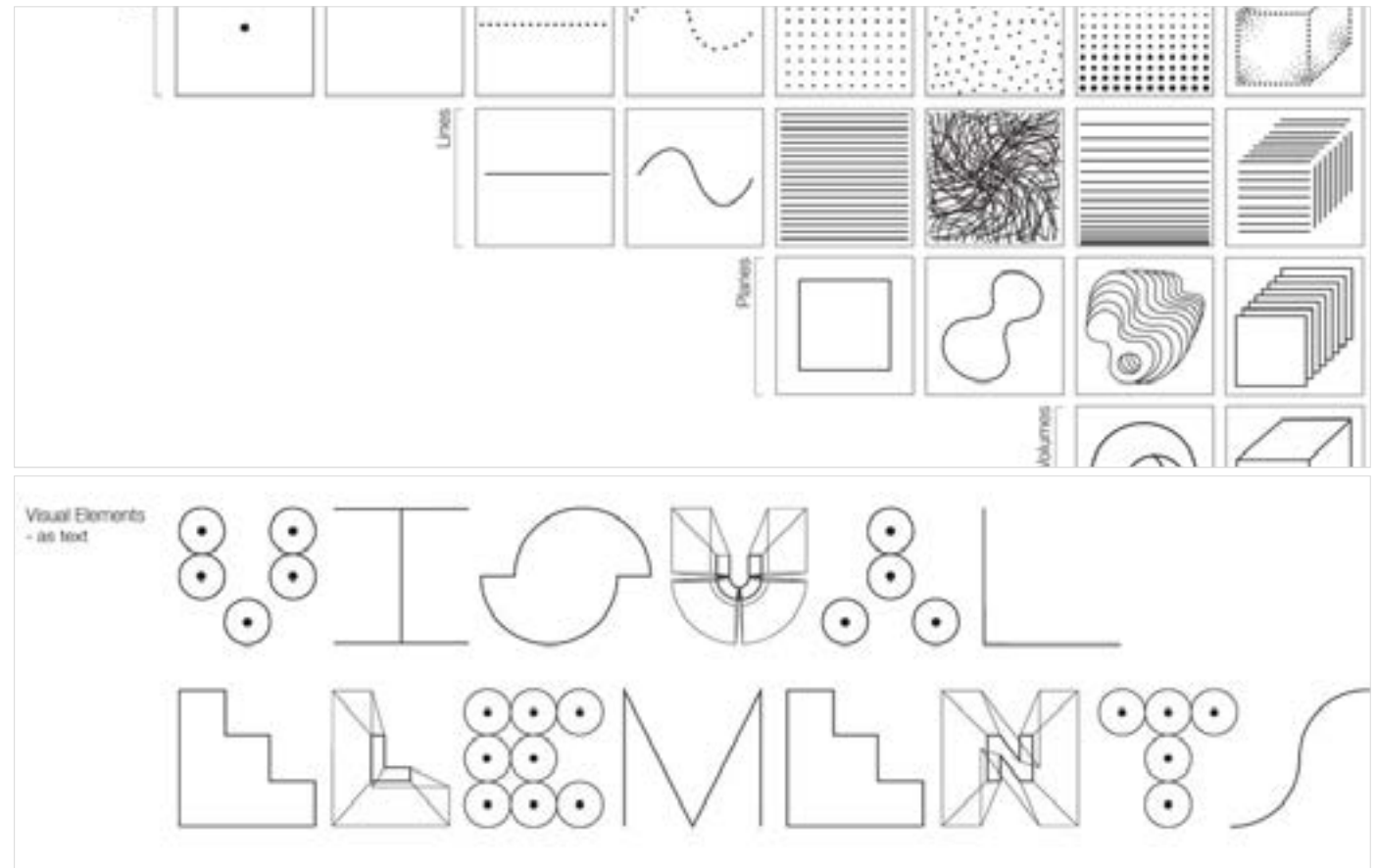Prof. Ravi Poovaiah
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Introduction

The visual elements are points, lines, planes and volumes. These are the most basic elements from which the visual language is built up.

Spatially, a moving point gives rise to a line (the one dimension), a moving line moving in a direction other than its own intrinsic direction becomes a plane (the two dimensions) and a plane moving in a direction other than its own intrinsic directions becomes volume (the three dimensions).

Conceptually, we feel that there is a point at the intersection of lines, a line marking the boundary of a shape and that there are planes enveloping an object.

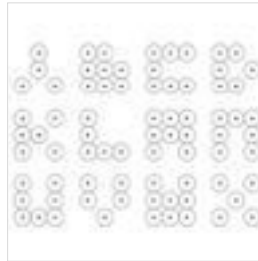

Visual Elements - as text

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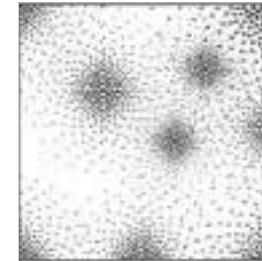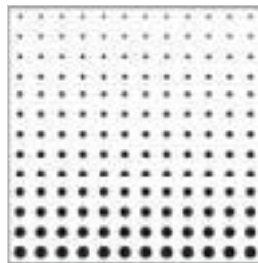**https://www.dsource.in/course/visual-elements/
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Points

Point as Text

Notes - Annotation

Relationship

Example

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Point as Text

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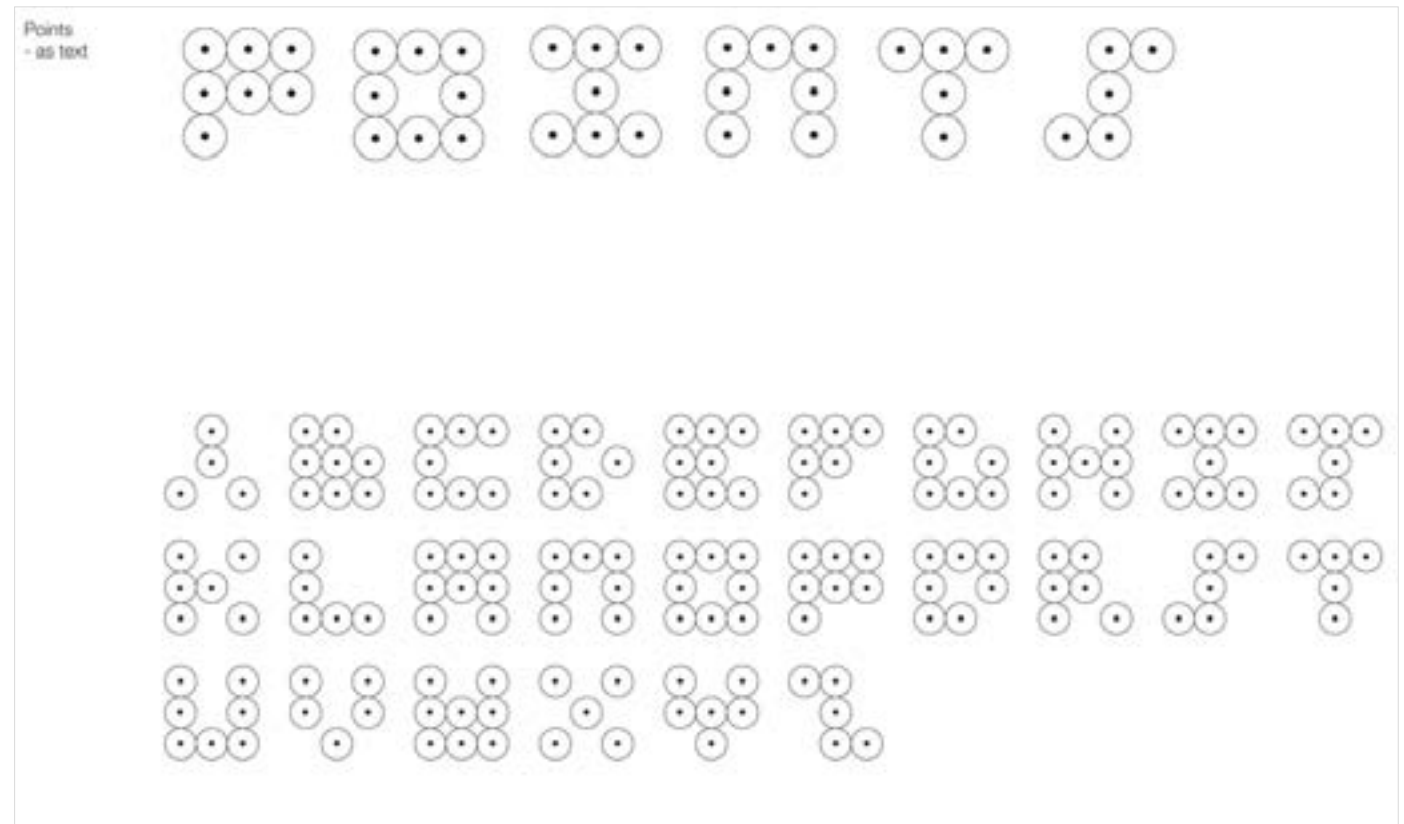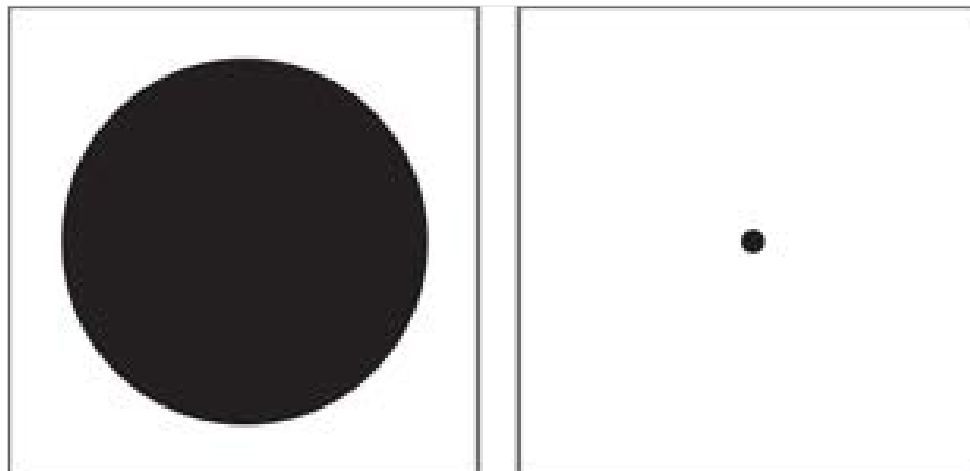
Notes - Annotation

Formal Aspects

We identify a point because of its smallness.

A point may appear fairly large when it is confined to a tiny frame of reference, but the same form may appear rather small as a 'point' when it is perceived in a much larger frame of reference.

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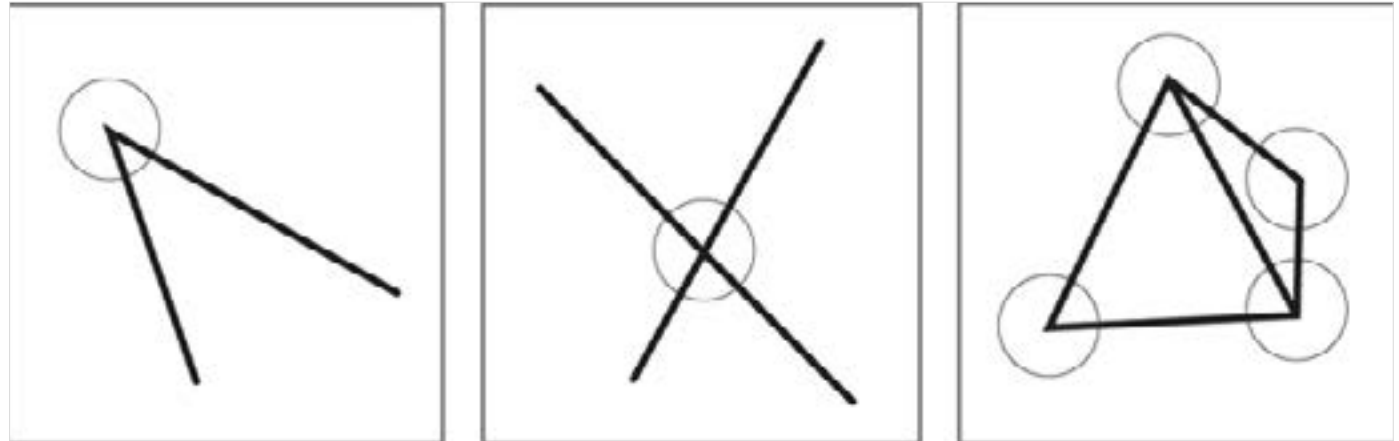
Conceptually, points are also perceived at places where there is a considerable change in direction of lines or when lines intersect or meet.

At a macro level, the shape of point can vary. It gets reduced to just a point when seen from far or in a larger frame of reference.

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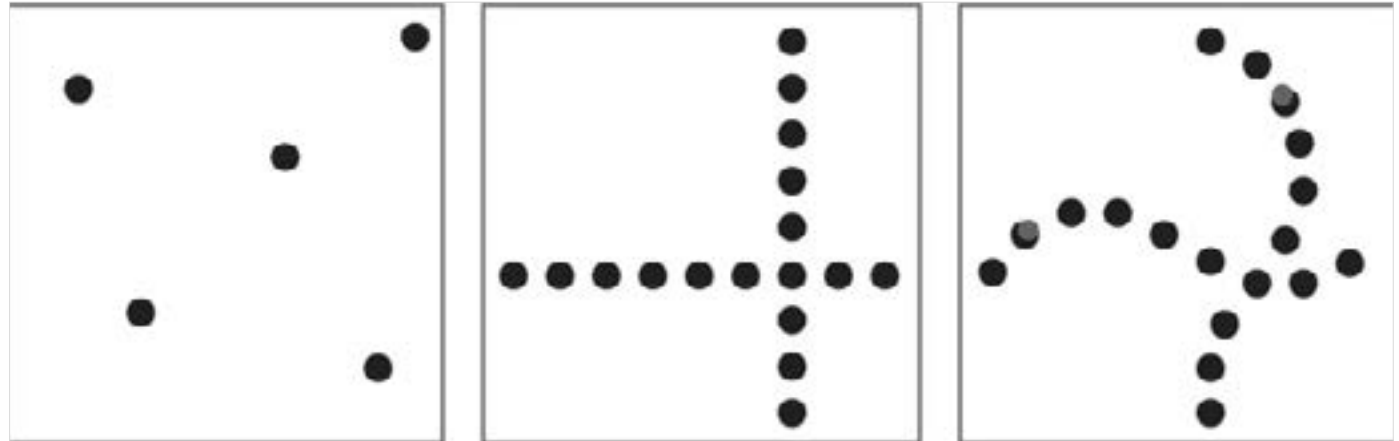by
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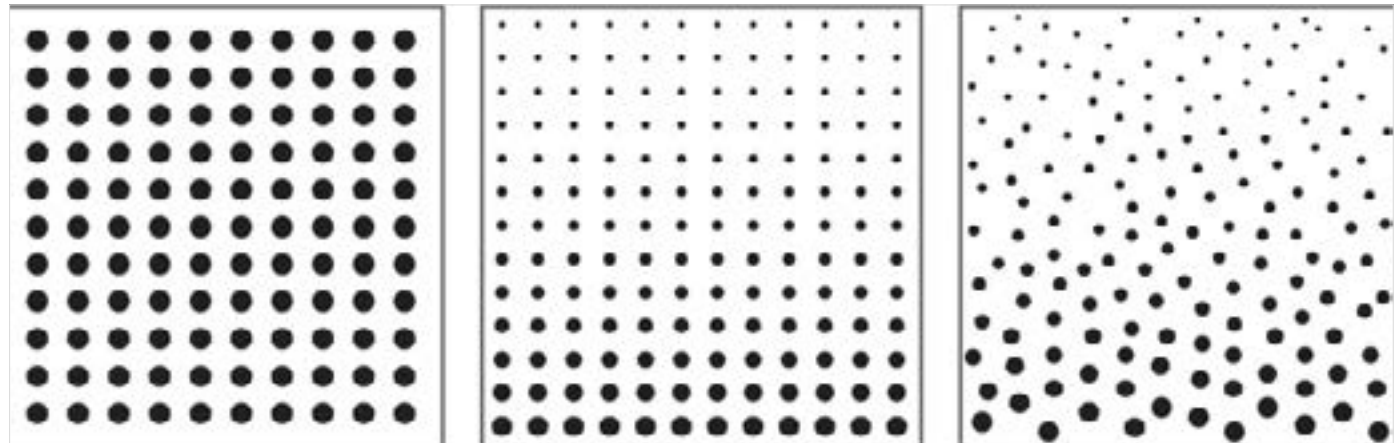IDC, IIT Bombay

Points in a frame which are quite segregated from each other are perceived as different points. Points which are close to each other with a common directional relationship are perceived as a line.

Group of points having a two dimensional relationship are perceived as a plane.

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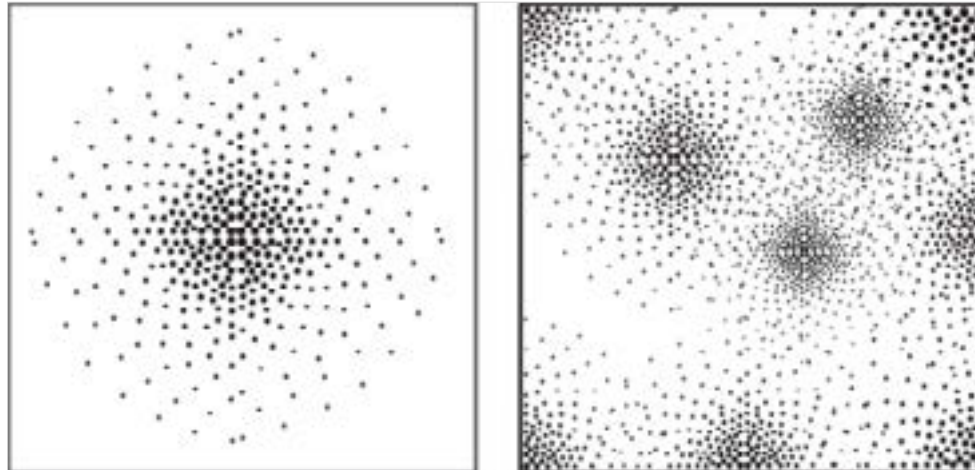## Visual Elements
Basic and fundamental units of visual language
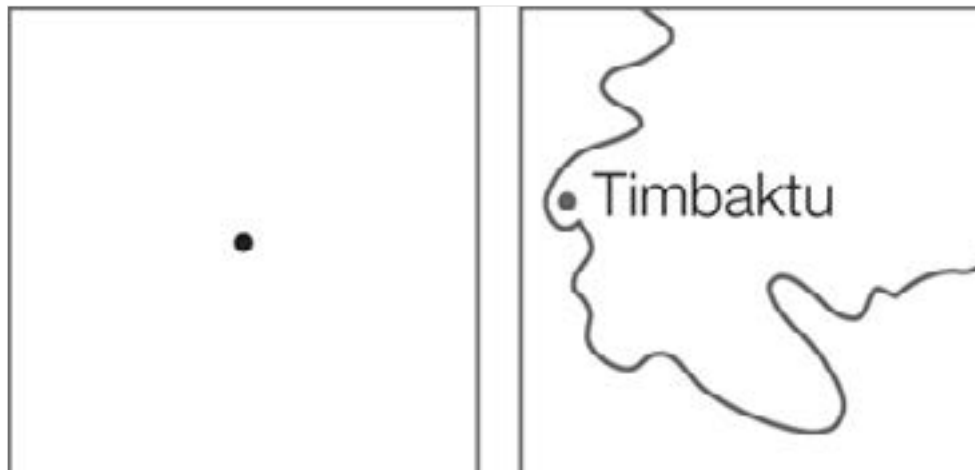by
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Repeated replication of points results in representation of textures and volumetric surfaces.

Semantic Aspects

A point indicates a position in space. An example of this is a point on a map representing a village.

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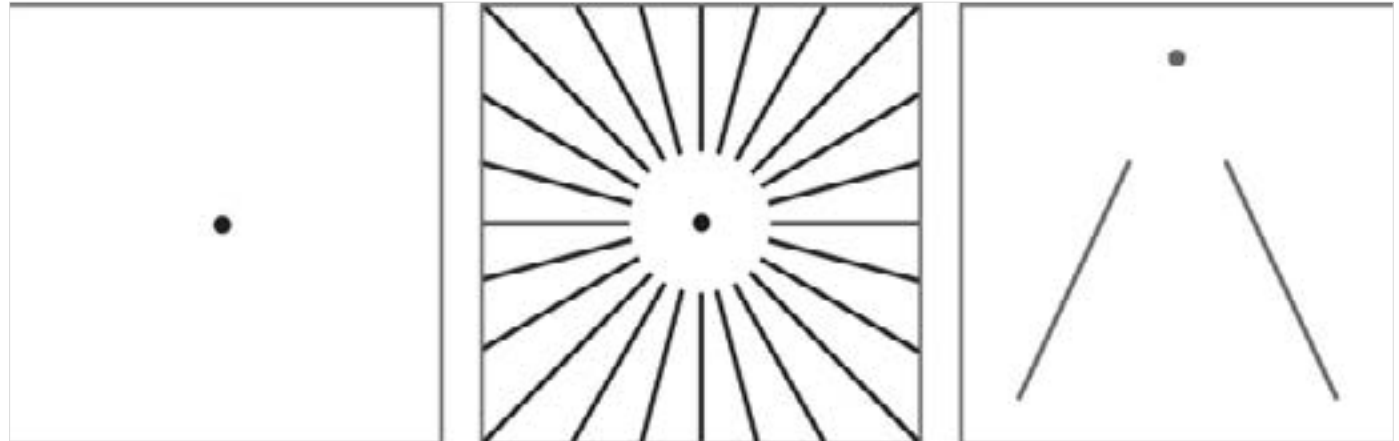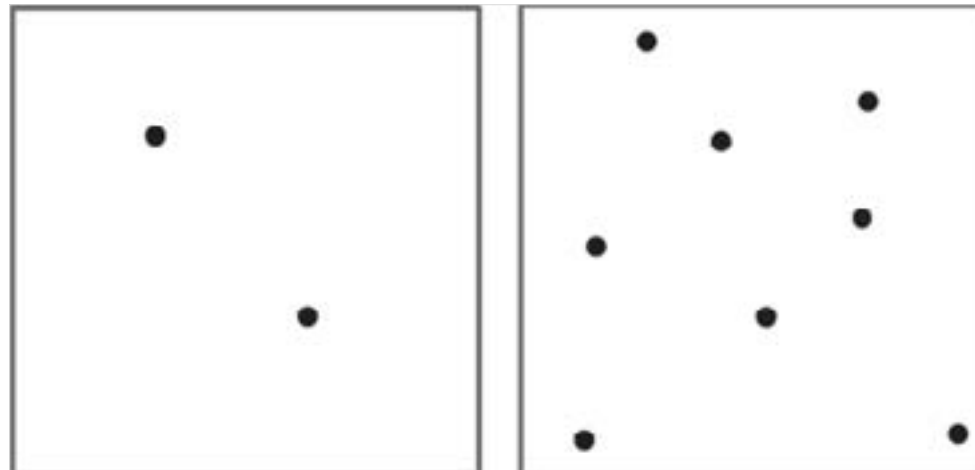
A point indicates focus of attention. It can act as a centre for converging forms or as a vanishing point within a perspective framework.

A point indicates a position in space. An example of this is a point on a map representing a village.

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Practical Aspects
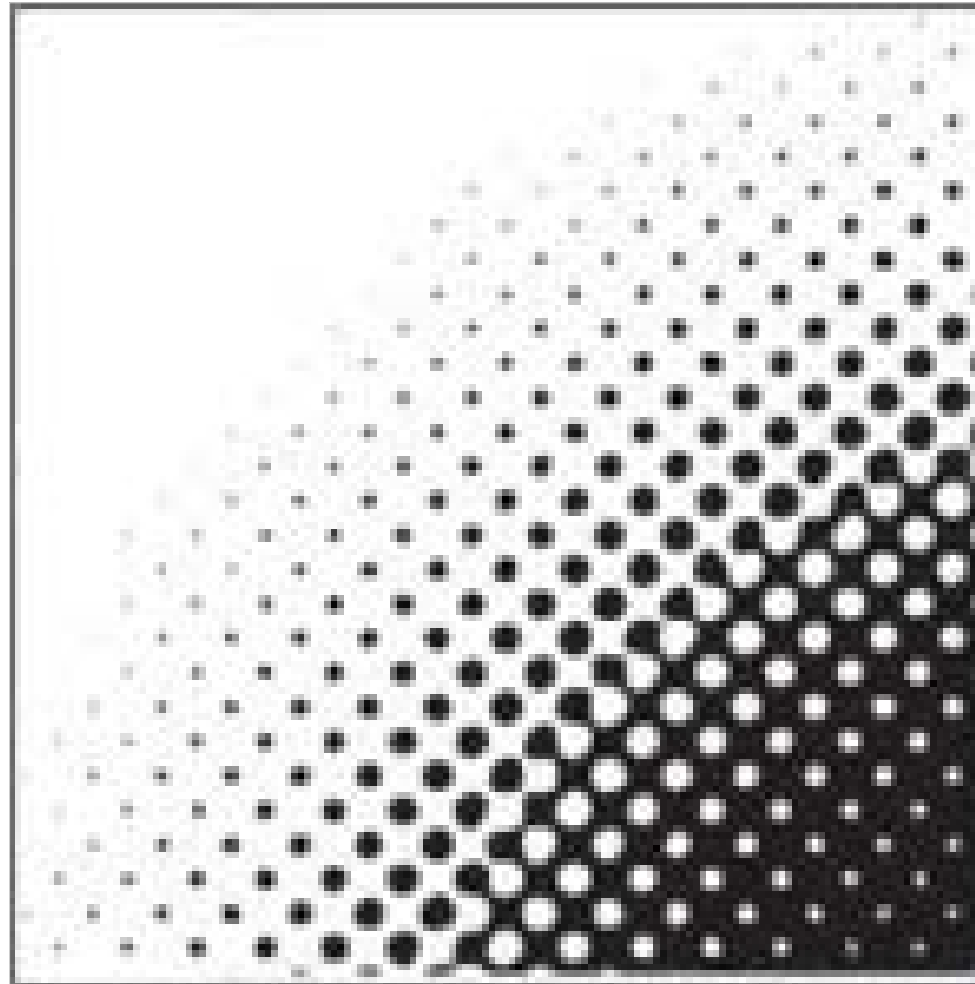
Points as pixels add together to represent images on printed surfaces and on computers, mobiles and television displays.
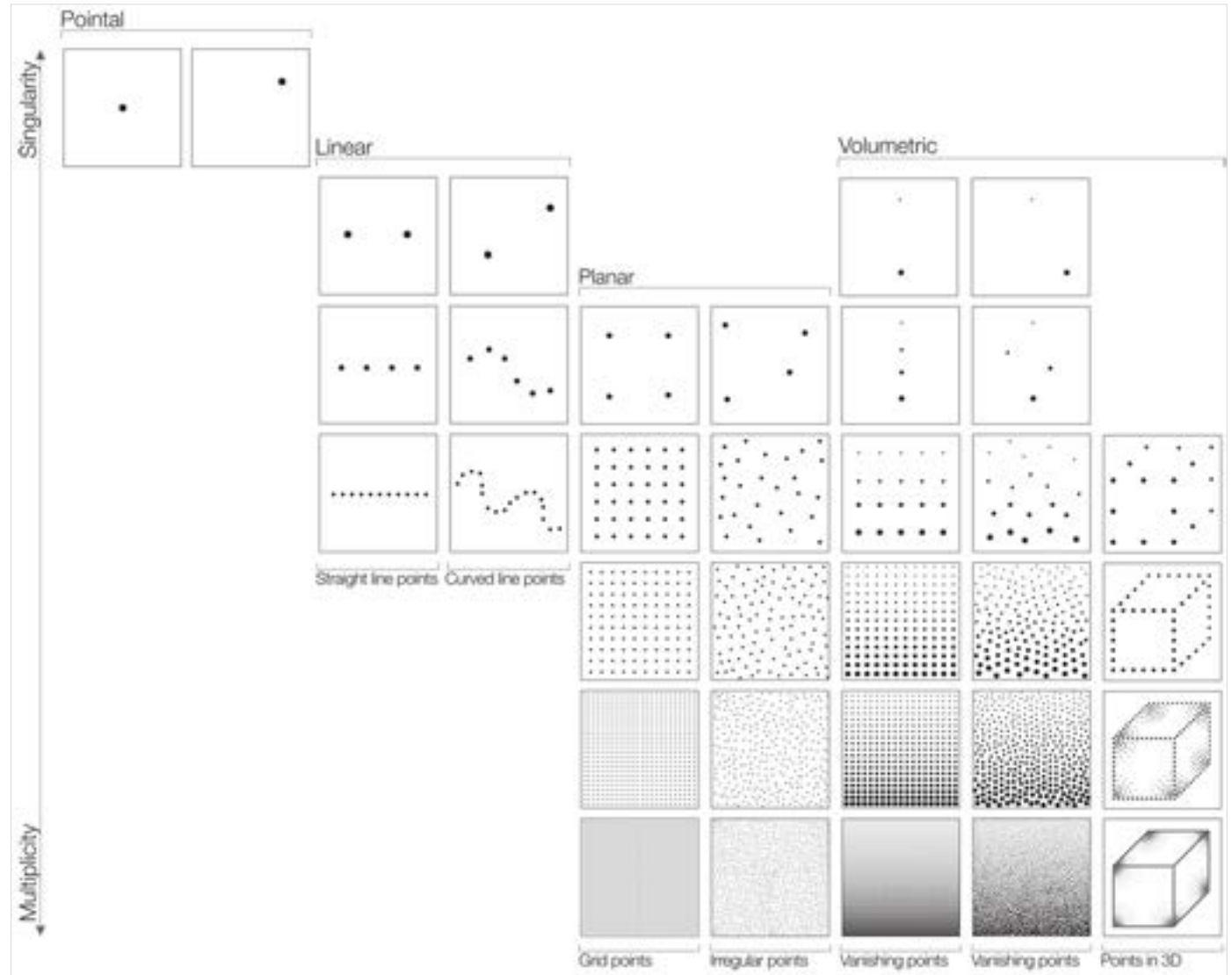
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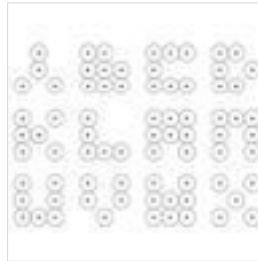Prof. Ravi Poovaiah
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Relationship

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Example

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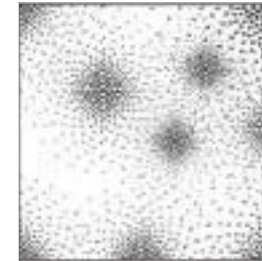**https://www.dsource.in/course/visual-elements/lines**

Lines

Text

Notes - Annotation

Relationship

Example

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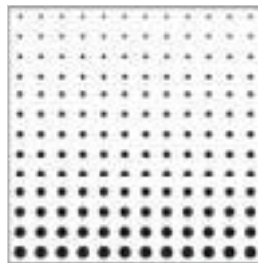by
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Notes - Annotation

Formal Aspects

A moving point gives rise to a line. Lines have one dimension - the length. The length is predominantly longer than its breadth. Points that are close to each other with a common directional relationship are perceived as a line.

A line can be straight, bent, curved, irregular or hand drawn.

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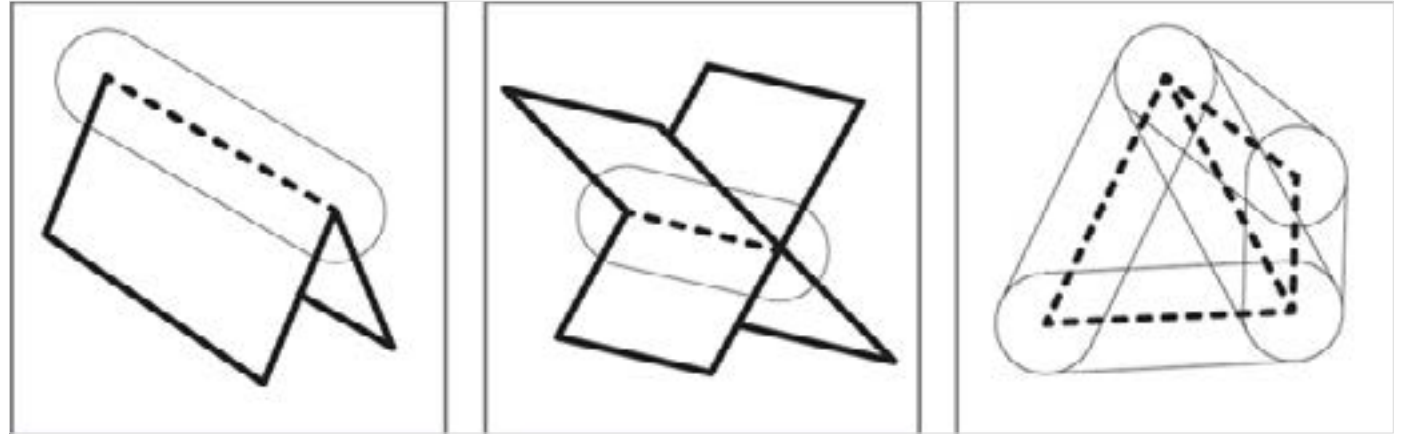
Conceptually, lines are also perceived at places where there is a considerable change in direction of planes or when planes intersect or meet.

At a macro level, the shape of the end of a line can vary.

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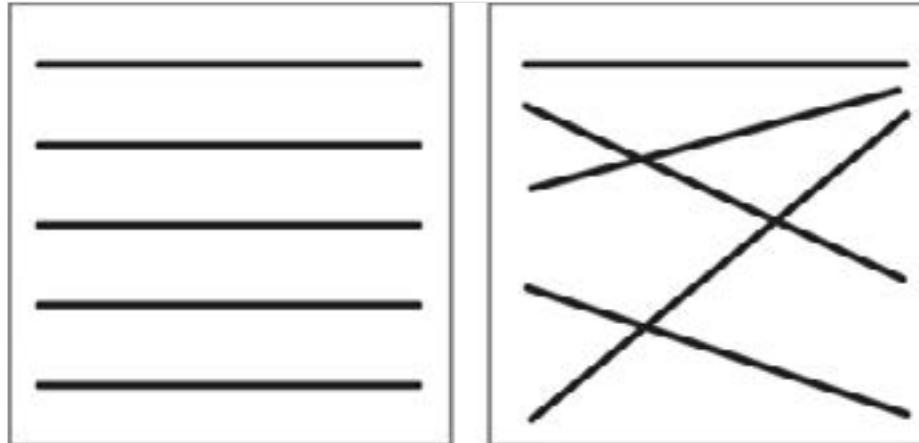## Visual Elements
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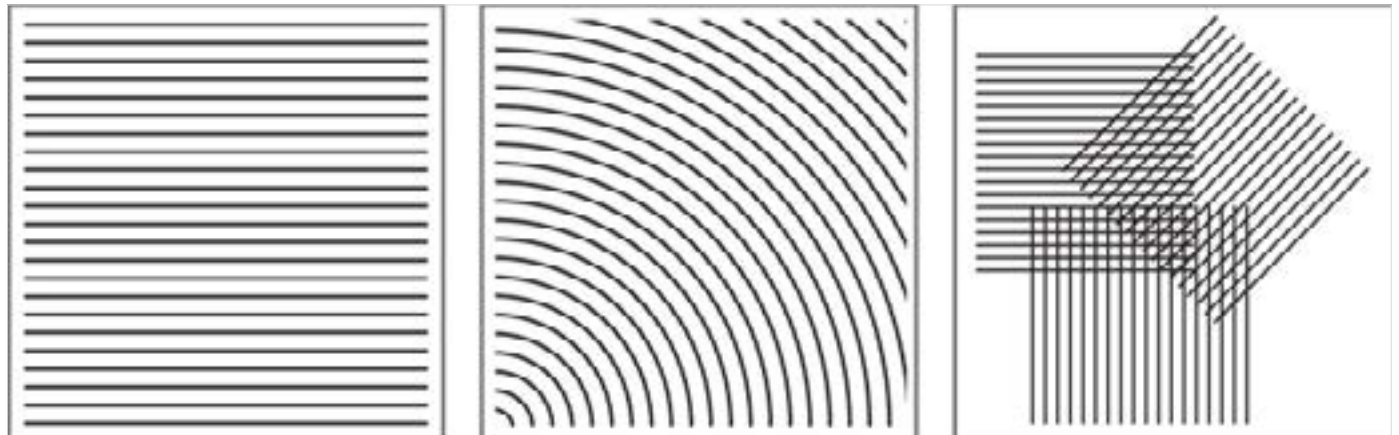IDC, IIT Bombay

Lines in a visual field that are quite segregated or with different directions from each other are perceived as different lines.

Group of lines that are close to each other establish a 2-dimensional relationship and are perceived as a plane. Groups of lines having many common directional relationships are perceived as different planes.

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Repeated replication of lines results in representation of textures and volumetric surfaces. Changing the space between the lines or the thickness of the lines leads to the indication of depth.

Closed or almost closed lines give the perception of a planar surface.

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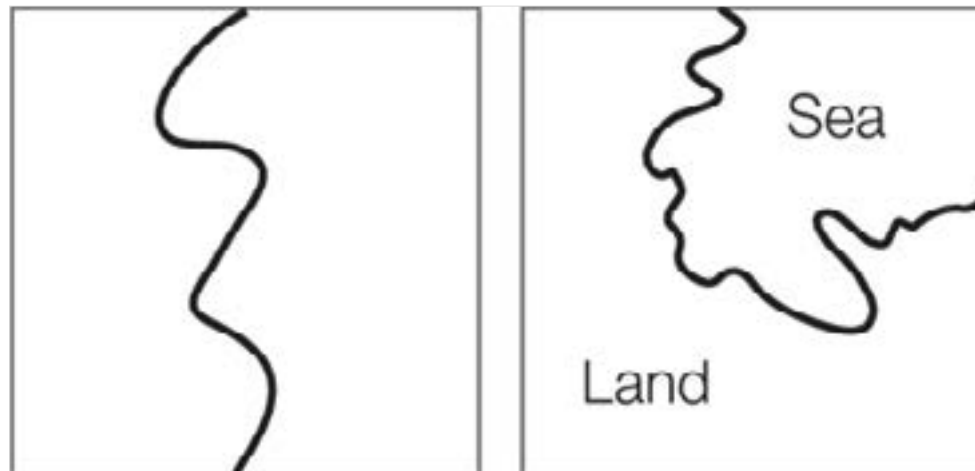by
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Semantic Aspects

Lines are 1-dimensional in nature and denote direction. An example of this is a line on a map representing a path or a route.

The linear structure of the line can be used to denote a boundary or a division.

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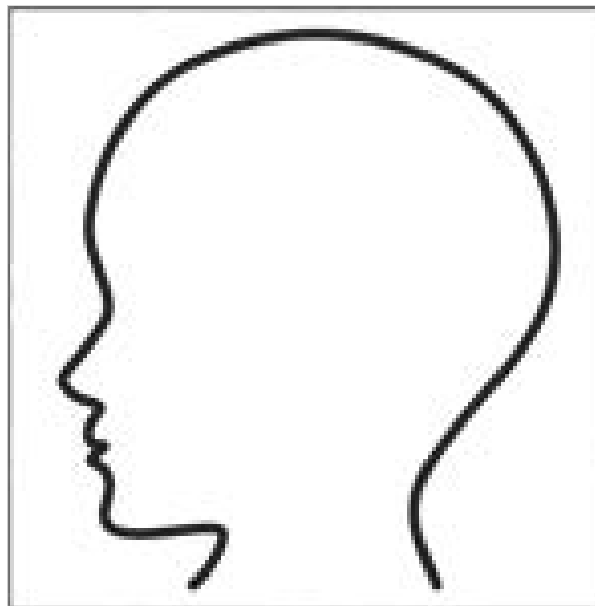Basic and fundamental units of visual language
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When there are two lines, there is an indication of direction and specific interaction between them. Freely used lines create a variety of energies and tensions.

Practical Aspects

The property of the line to be able to denote a boundary makes it useful for representing images in contours.

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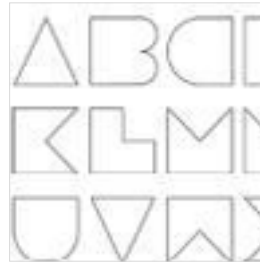IDC, IIT Bombay

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Example

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Planes

Text

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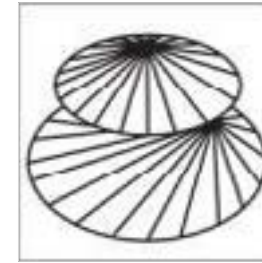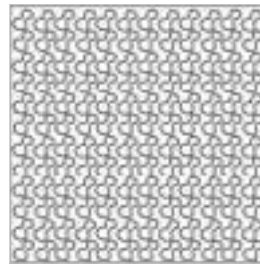**https://www.dsource.in/course/visual-elements/planes/text**

Text

Planes
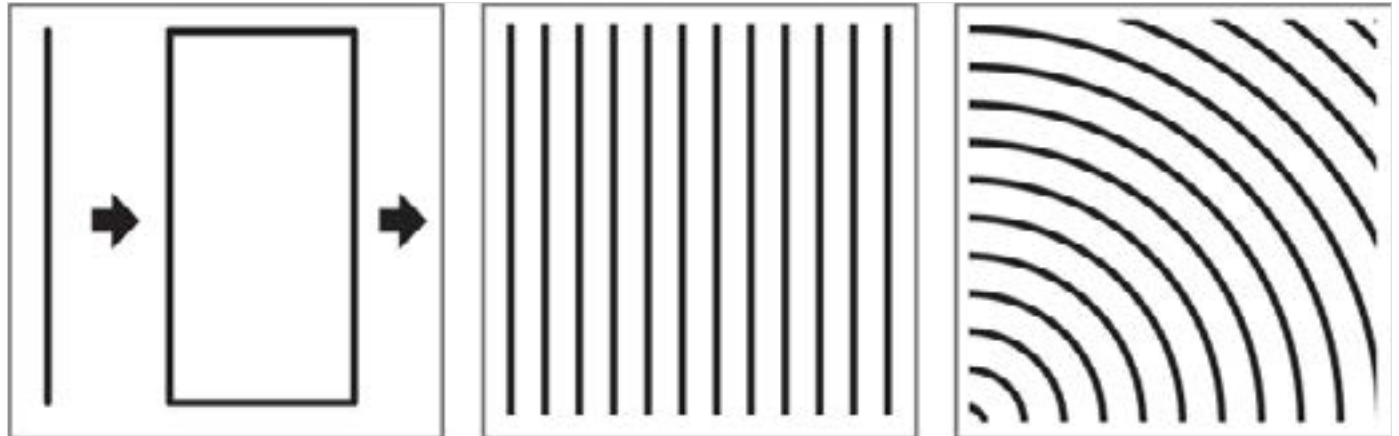- as text

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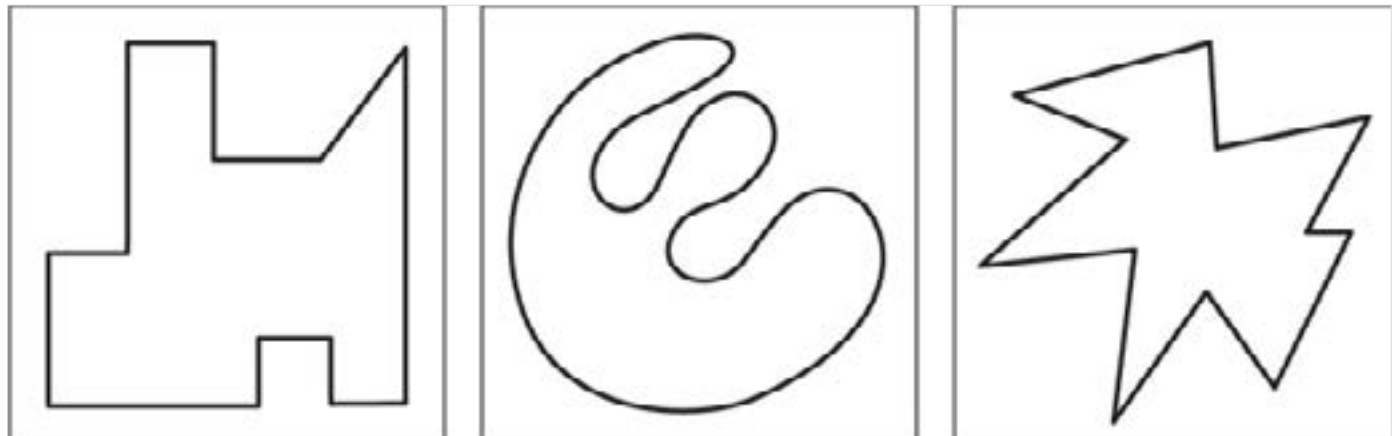by
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Formal Aspects

A moving line, moving in a direction other than its own intrinsic direction gives rise to a plane. Planes have 2 dimensions - length and breadth. These are predominant compared to their thickness. Lines that are close to each other with a common directional relationship are perceived as a plane.

A planar form is bound by lines which constitute the edges of the plane. The characteristics of these lines and their interrelationships determine the shape of the planar form.
Planar forms can have a variety of shapes - geometric, organic, rectilinear, irregular or accidental.

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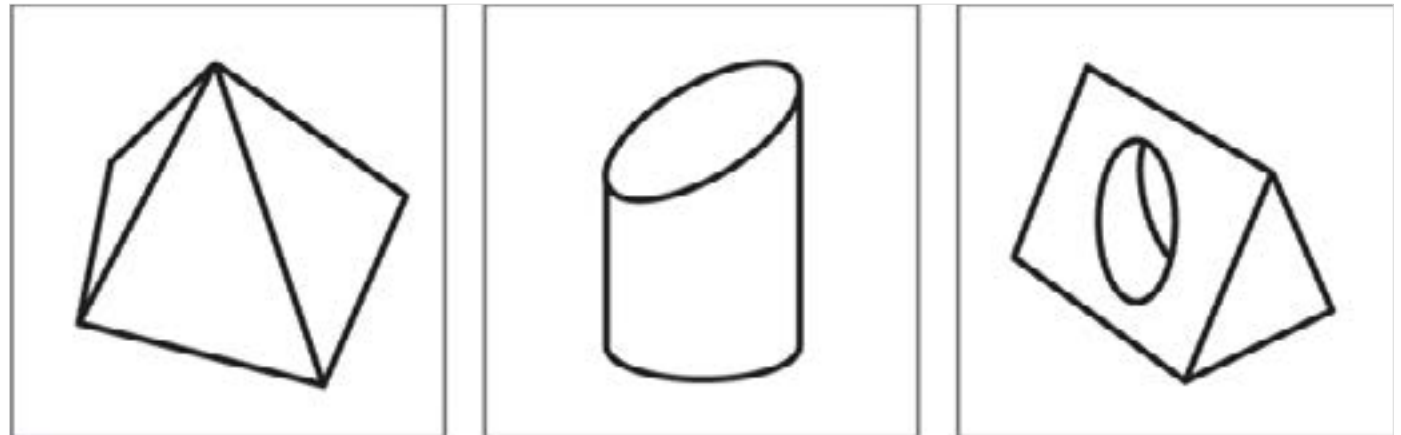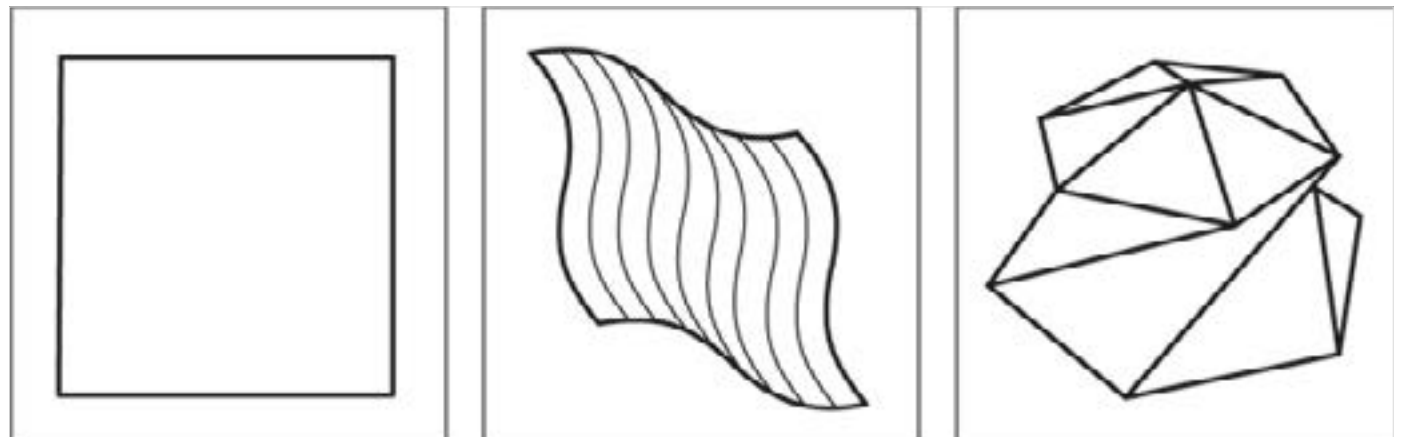
Conceptually, planes are also perceived at places where there is a considerable change in direction of the surface of volumes, when volumes are cut and when volumes intersect or meet.

A surface of a plane may be flat, curved or twisted.

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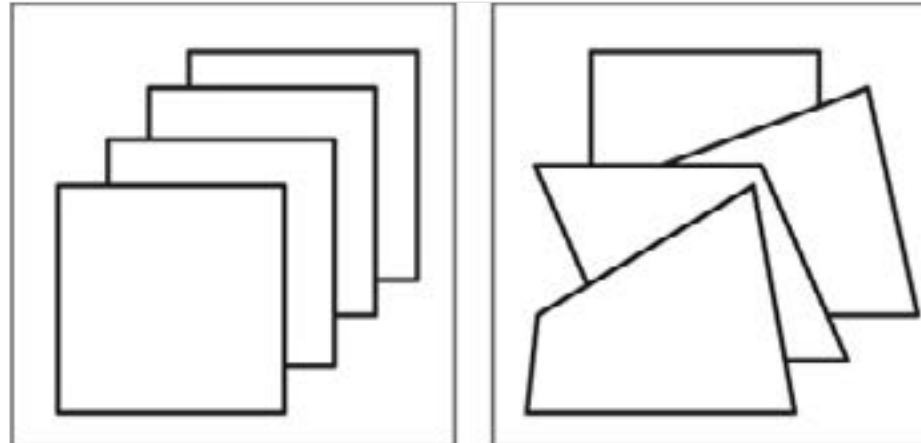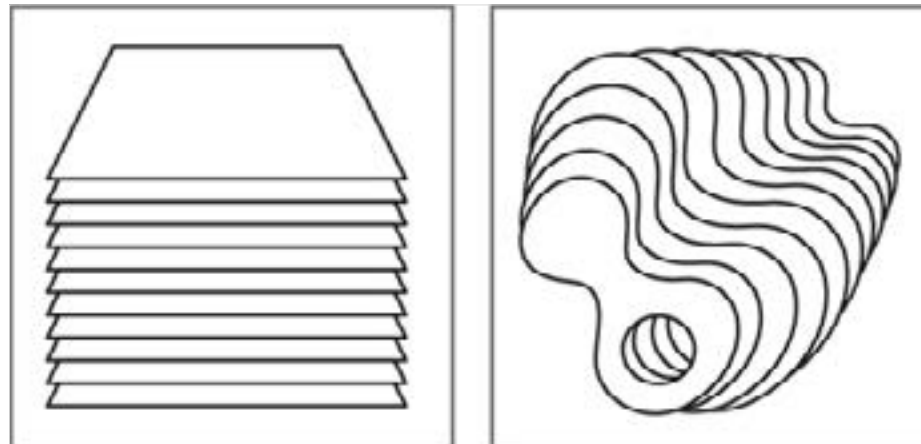by
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Planes in a visual field that are segregated or with different orientations from each other are perceived as different planes.

Group of planes that are close to each other with a 2-dimensional relationship are perceived as a volume.

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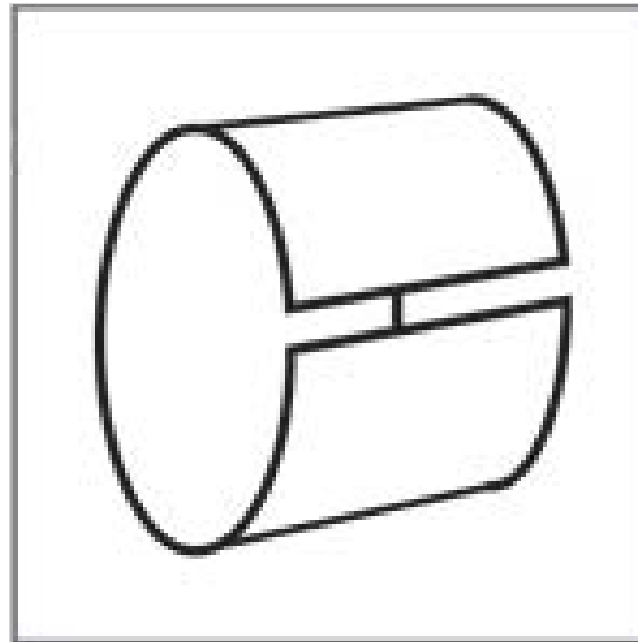
Planar forms can be represented by means of points, lines or by means of outlines.

Closed or almost closed plane is perceived as a volume.

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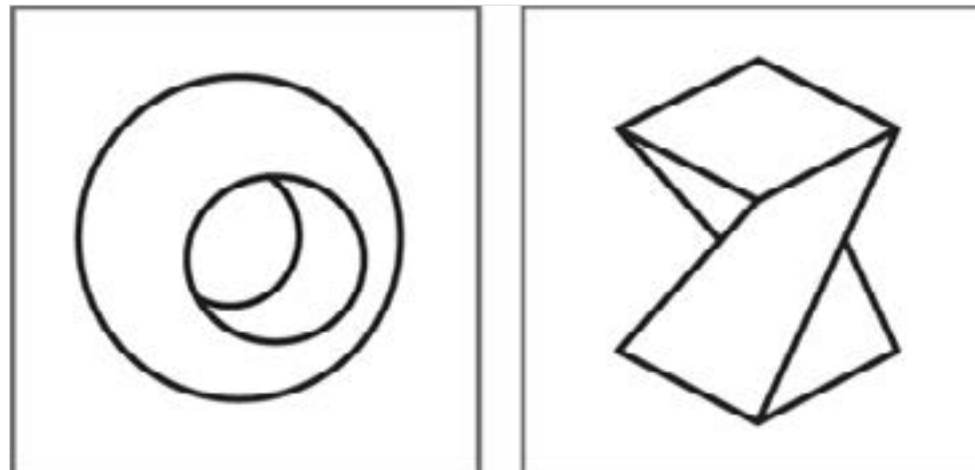**Semantic Aspects**

Planes are 2-dimensional in nature and denote surfaces. An example of this is an area on a map representing a territory.

The planar structure of the plane can be used to wrap or envelop a surface.

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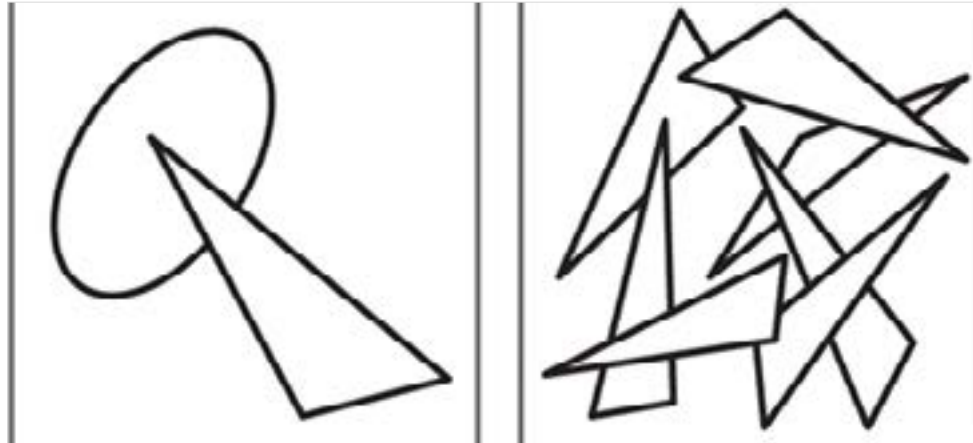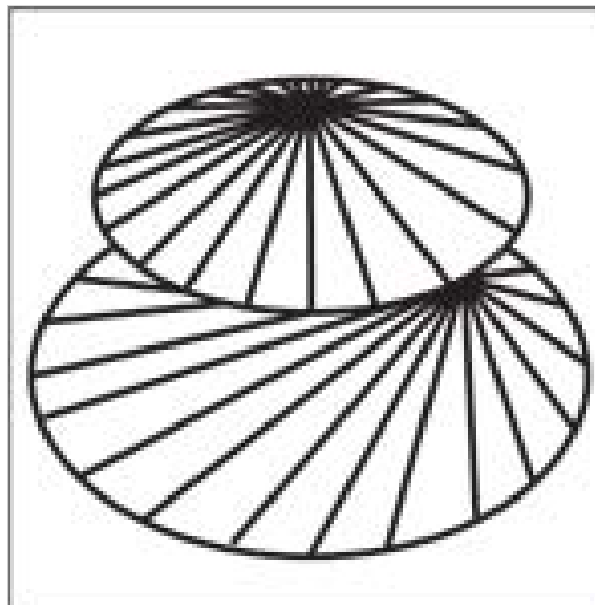
When there are two planes, there is a suggestion of direction and specific interaction between them. Freely used planes create a variety of energies and tensions.

Practical Aspects

The property of the plane to be able to denote a surface makes it useful in representing the body of 3-dimensional objects.

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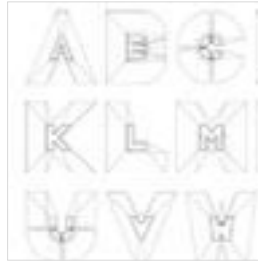
Example

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Volume

Text

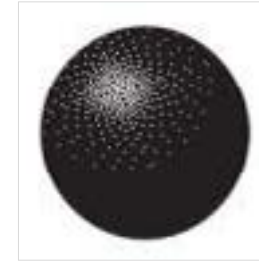Notes - Annotation

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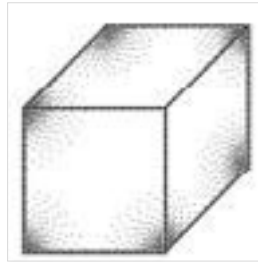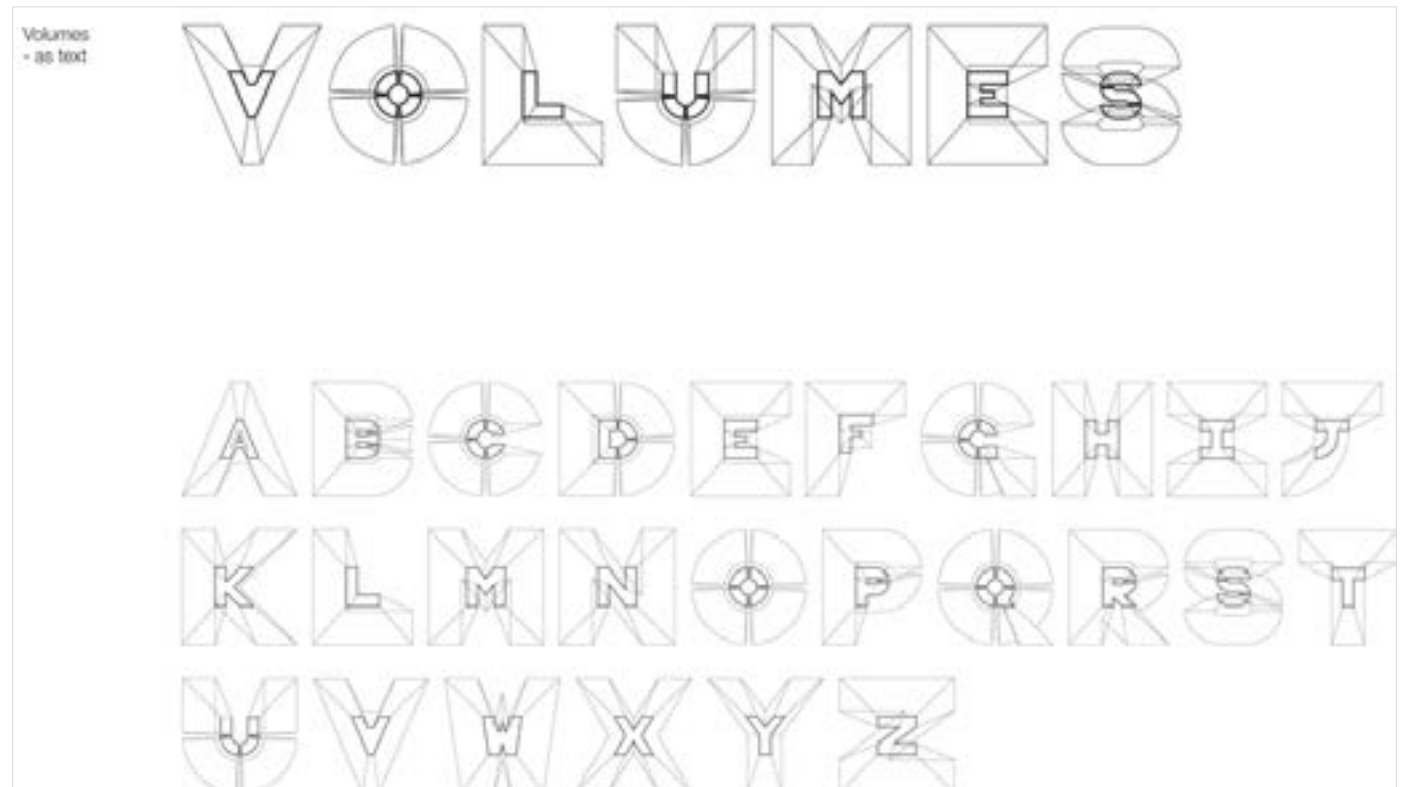**https://www.dsource.in/course/visual-elements/**
volume/text

Text

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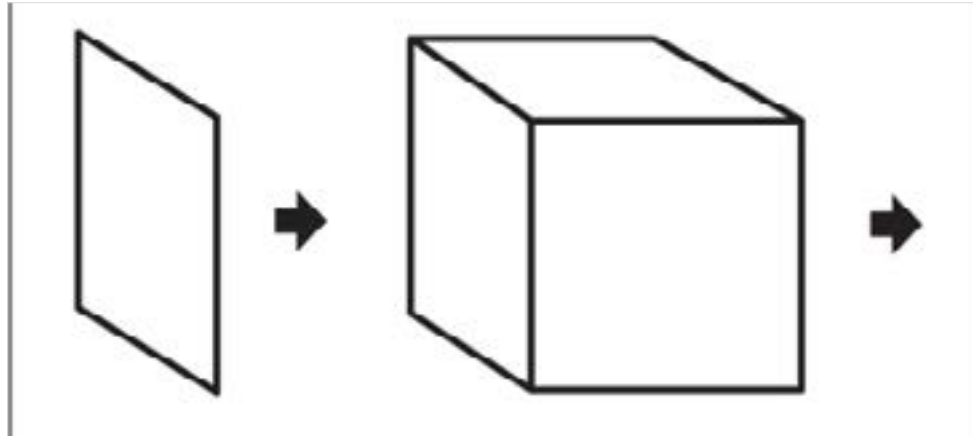Basic and fundamental units of visual language
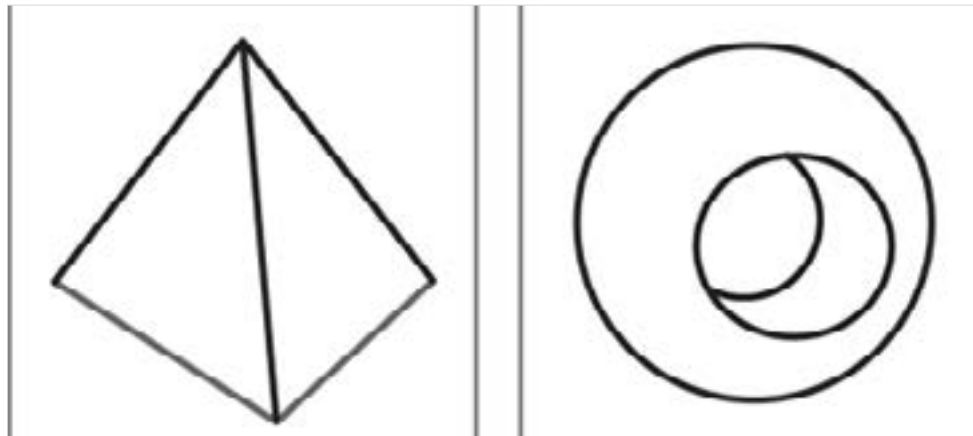by
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Formal Aspects

A moving plane, moving in a direction other than its own intrinsic direction gives rise to a volume.

We identify a volume because of its 3rd dimension of depth and the fact that it occupies space.

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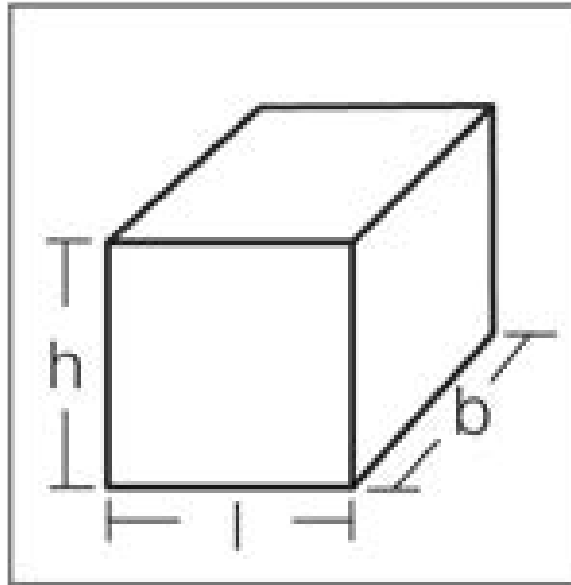## Visual Elements
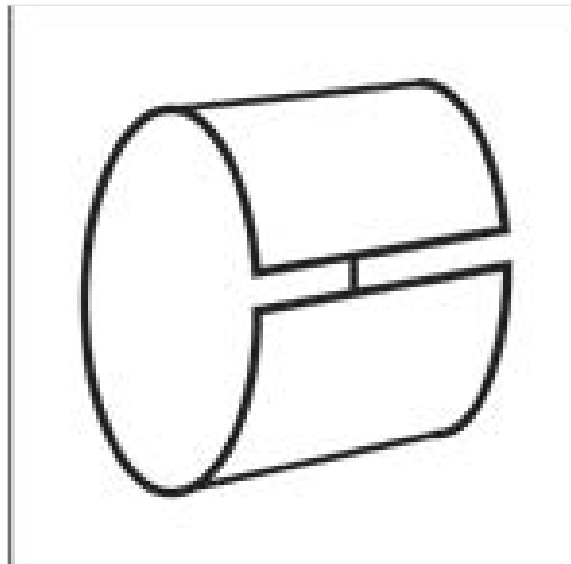Basic and fundamental units of visual language
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Volumes have 3 dimensions.
For example, a rectangular prism has length, breadth and height.

A 3 dimensional volume is perceived in a closed or almost closed plane.

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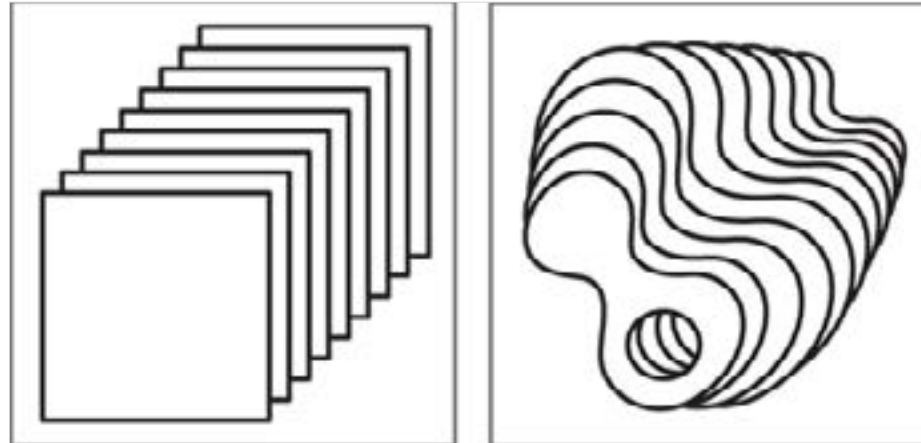## Visual Elements
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Planes that are close to each other with a common directional relationship are perceived as a volume.

Volumetric forms can be represented by means of points, lines or by means of outlines.

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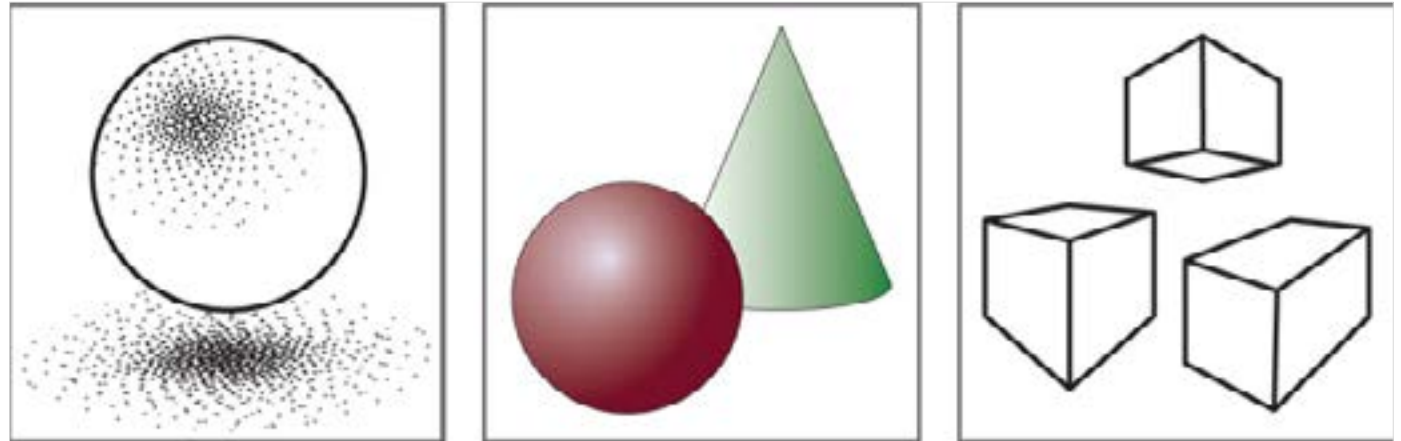# Visual Elements
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The perception of depth or volumetric space is created by using textures, shadows, changing colour values and the use of perspective.

Semantic Aspects

Volumes are 3 dimensional in nature and denote volumetric spaces.
In 2 dimensional representation of volumes, the perception of space and depth is illusory. Volumetric depictions in 2 dimensions (2D) are closest to how those objects would be perceived as in 3 dimensions (3D).

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Practical Aspects
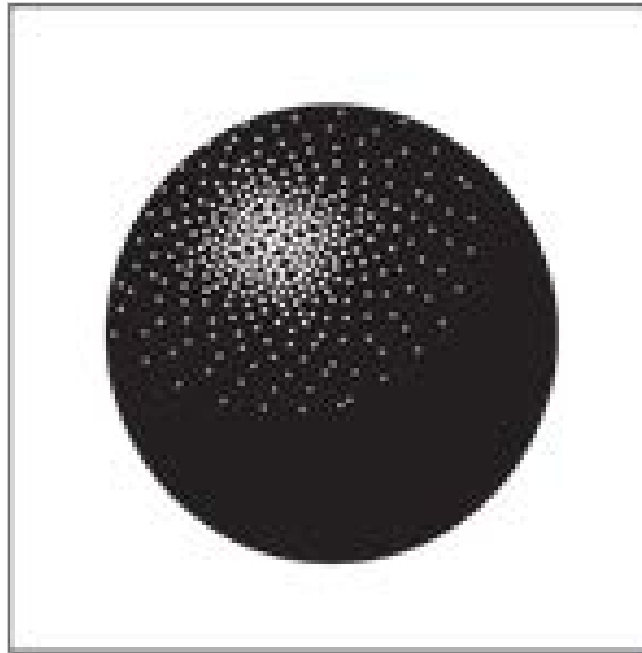
We are able to represent 3 dimensional volumetric objects as representations on a 2 dimensional surface. Examples of these are illustrations on paper, displays on monitors, images on movie screens, etc.

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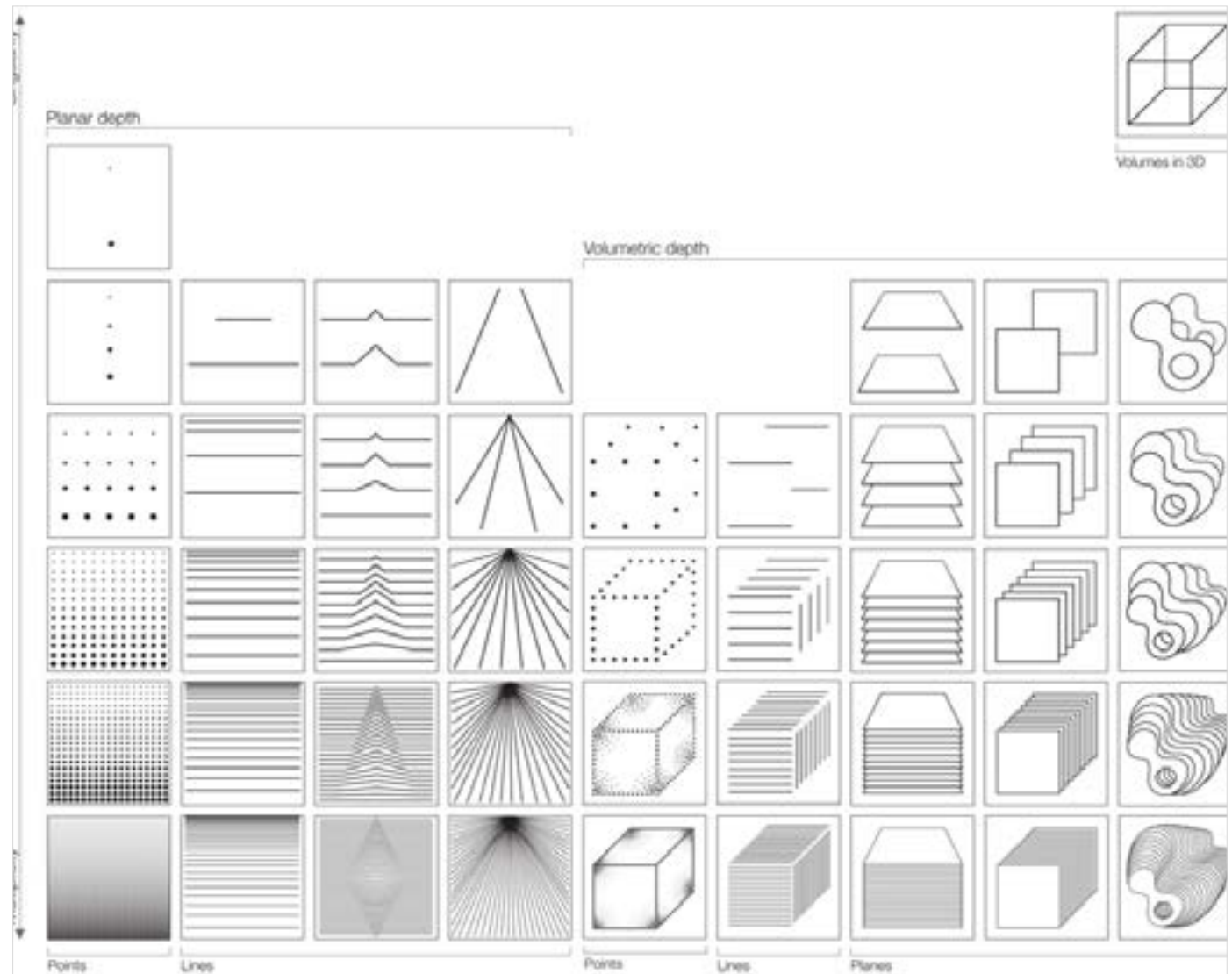
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Contact Details

This documentation for the course was done by Professor Ravi Poovaiah, faculty at IDC, IIT Bombay.

You can get in touch with him at ravi[at]iitb.ac.in

You can write to the following address regarding suggestions and clarifications:

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