Orthographic Projections

Definitions:

- **Plane of Projection**
  - Imaginary plane upon which projection is obtained

- **Point of Sight**
  - Real or imaginary position of the eye of the observer

- **Line of Sight**
  - All lines joining the point of sight and various points on the object
Orthographic Projections

Principal Elements:

- Object
- Plane of Projection
- Point of Sight
- Projectors
- Lines of Sight
Orthographic Projections

- Lines of sight are perpendicular to the plane of Projection
- Line of sight are parallel to each other (projectors)
- Point of intersection of lines of sight with the plane of projection defines the projection of object
Planes of Projection

Three principal planes

- Horizontal Plane (H- Plane)
- Vertical Plane (V- Plane)
- Profile Plane (P – Plane)

All three planes are mutually perpendicular to each other
Angles of Projection (Quadrants)

- Horizontal and Vertical Planes divide the space into four quadrants
- Clockwise I, II, III and IV
- In USA all drawings are done in 3\textsuperscript{rd} angle of projection
Projecting Views – Glass Box

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Projections using Parallel Projectors
Horizontal and Profile Planes are opened into Frontal Plane
Standard Arrangement of Views

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Line Weights
Six Principal Views
Arrangement of Six Principal Views
Three View Drawings
Three View Drawings
Selection of Views
Transferring Depth

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Two View Orthographic Projections
Third and First Angle of Projection