Noakhali Science and Technology University
Noakhali-3814

Course Code: **1108**

Course Title: **Engineering Drawing**

Course Teacher: DR. MD. ASHIKUR RAHMAN KHAN

Department of Information and Communication Technology

Engineering Drawing

Lab 1

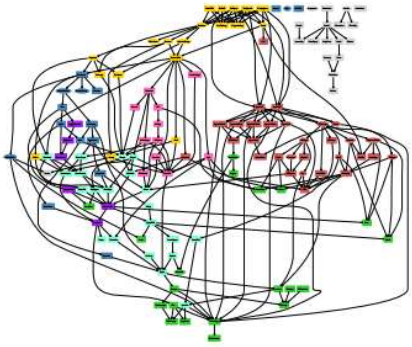
Drawing, Types of Drawing, Orthographic Drawing

Course Teacher: DR. MD. ASHIKUR RAHMAN KHAN

What is drawing?

Drawing is a language and a language has great usefulness.

Like the language of the **written word**, **mathematics**, and **music**.



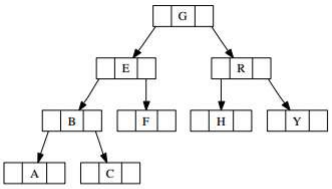
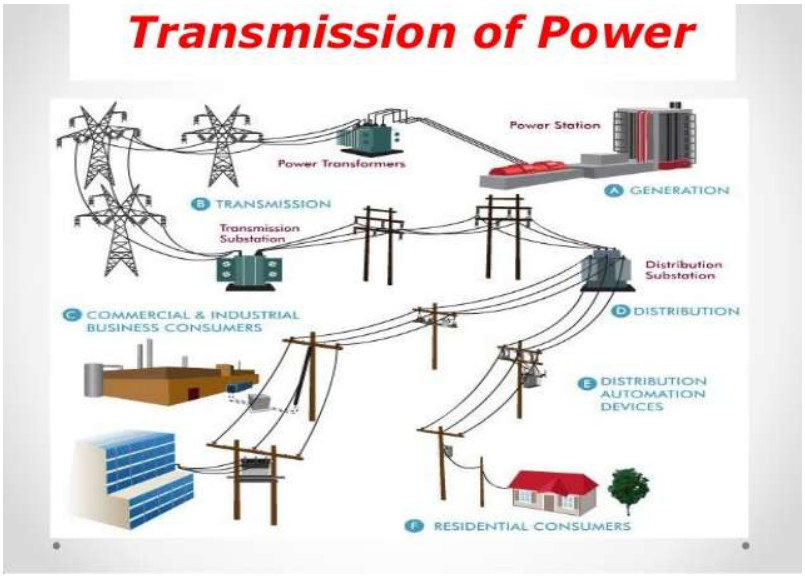
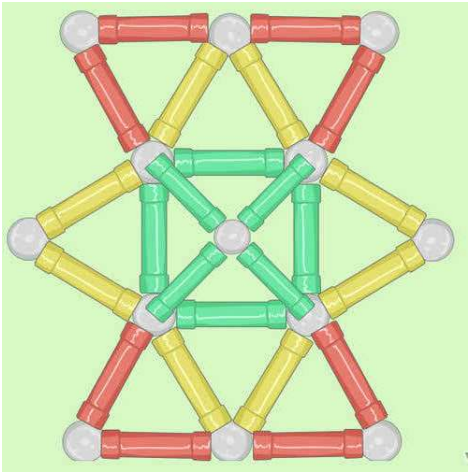


Figure 12: Drawing of binary search tree

What is drawing?



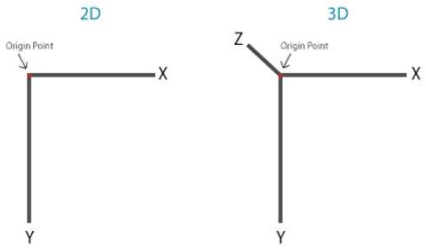
What is drawing?



2D and 3D Drawing

The **two techniques** are used to indicate shape

- **Two dimensional**
- **Three dimensional**



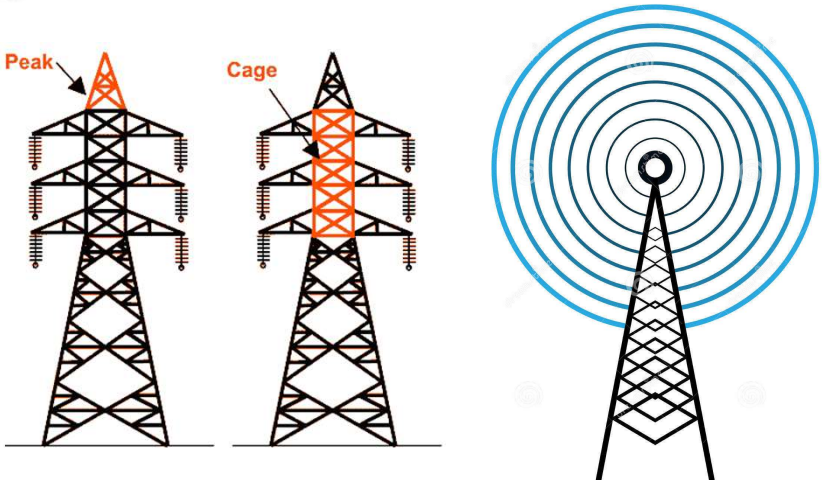
2D Drawing:

With some two dimensional drawings one view is sufficient to describe a shape.

Some objects need two views to show shape.

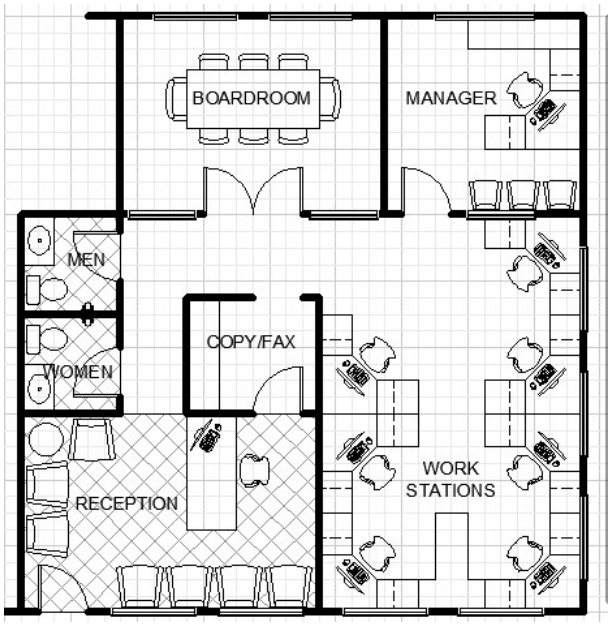
Still other objects may need three views to fully describe shape.

2D Drawing



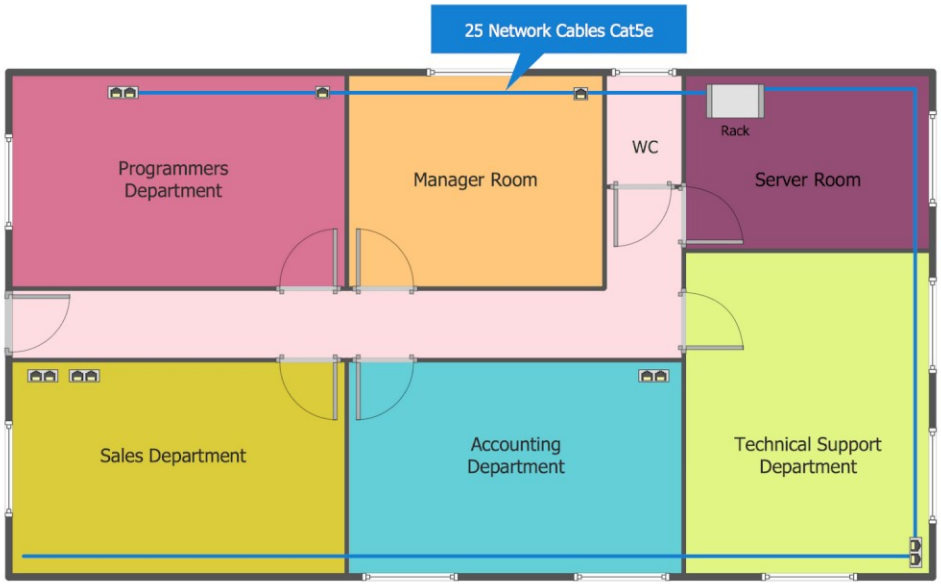
2D Drawing

2D Drawing

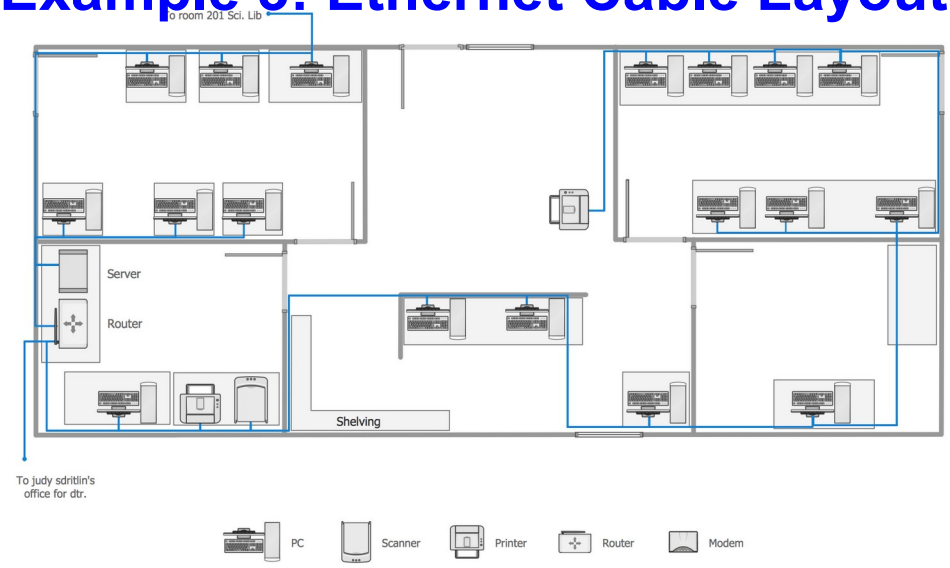


ICE Dept. Engineering drawing

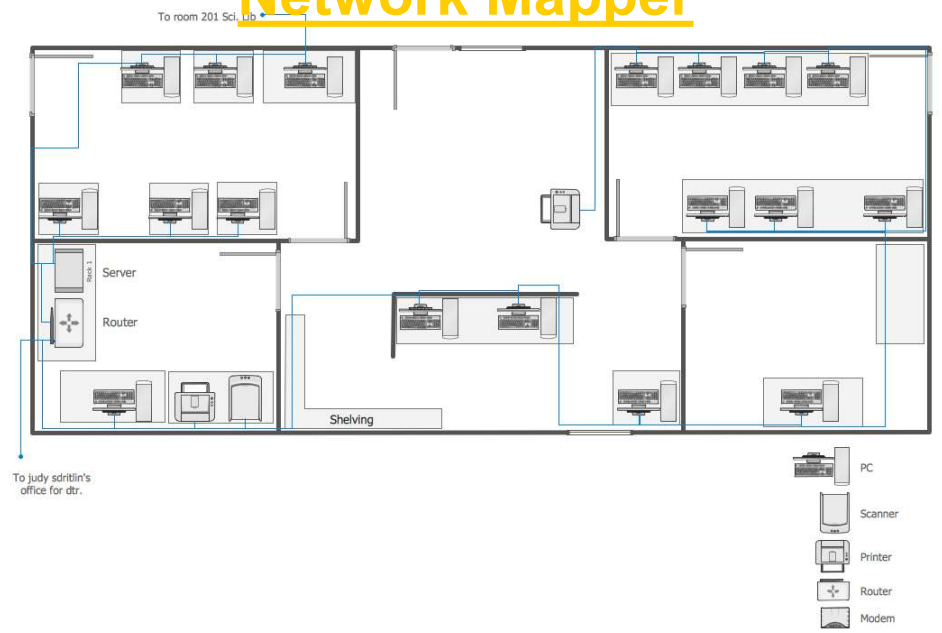
Example 2: Network Communication Plan



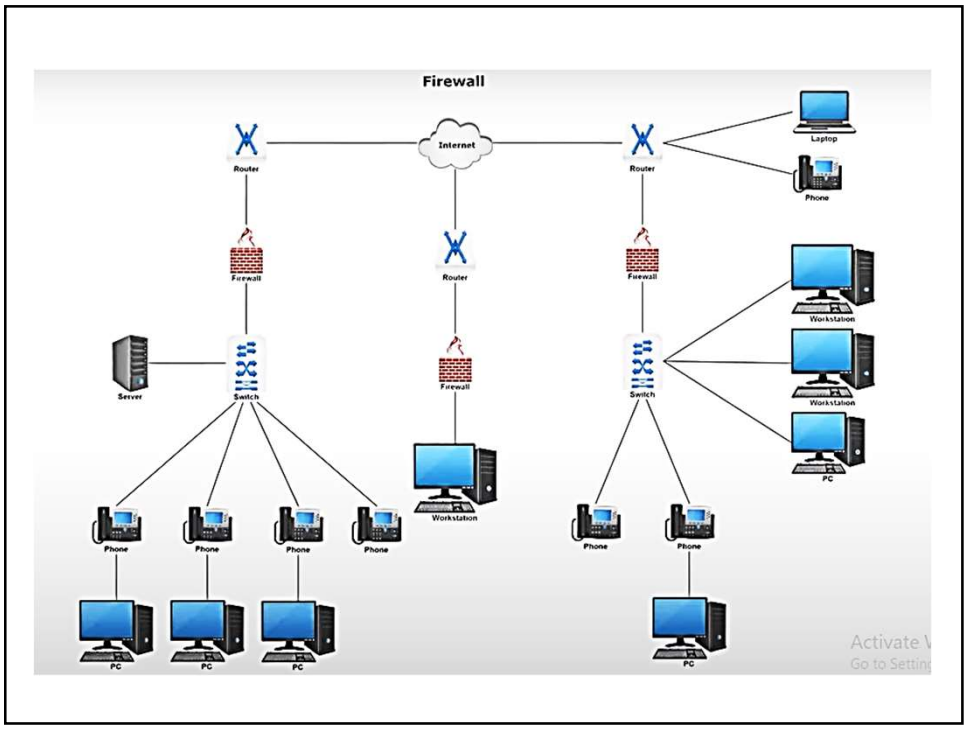
Example 3: Ethernet Cable Layout

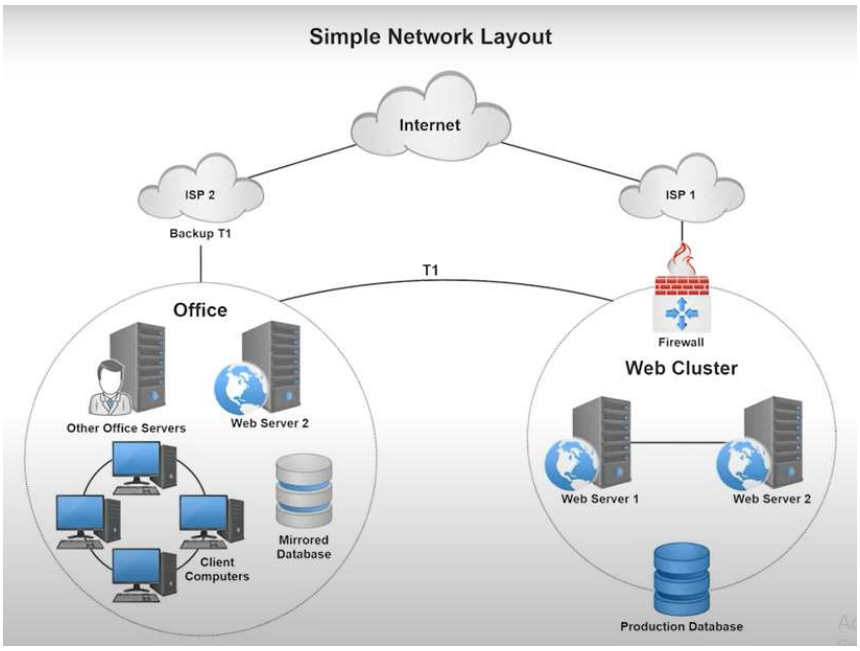


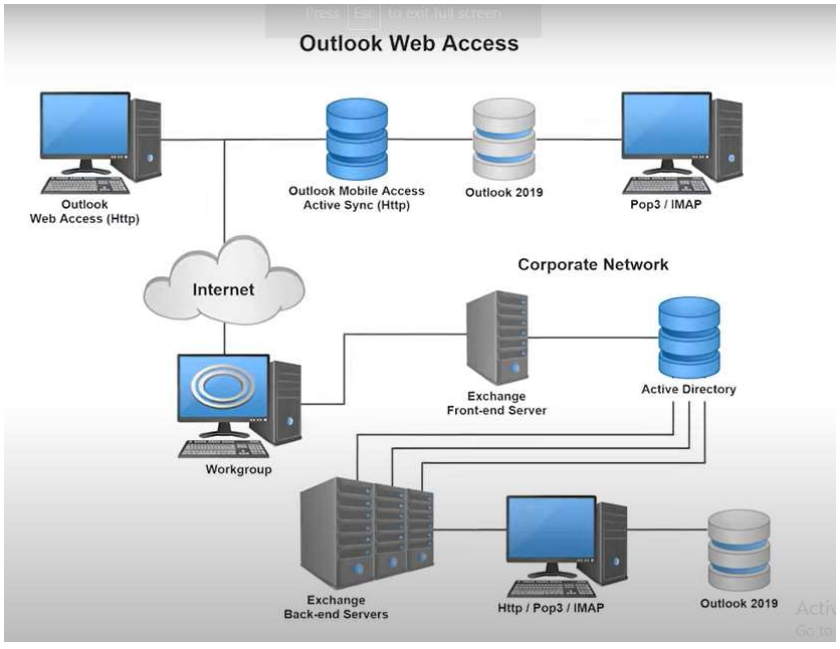
Network Mapper

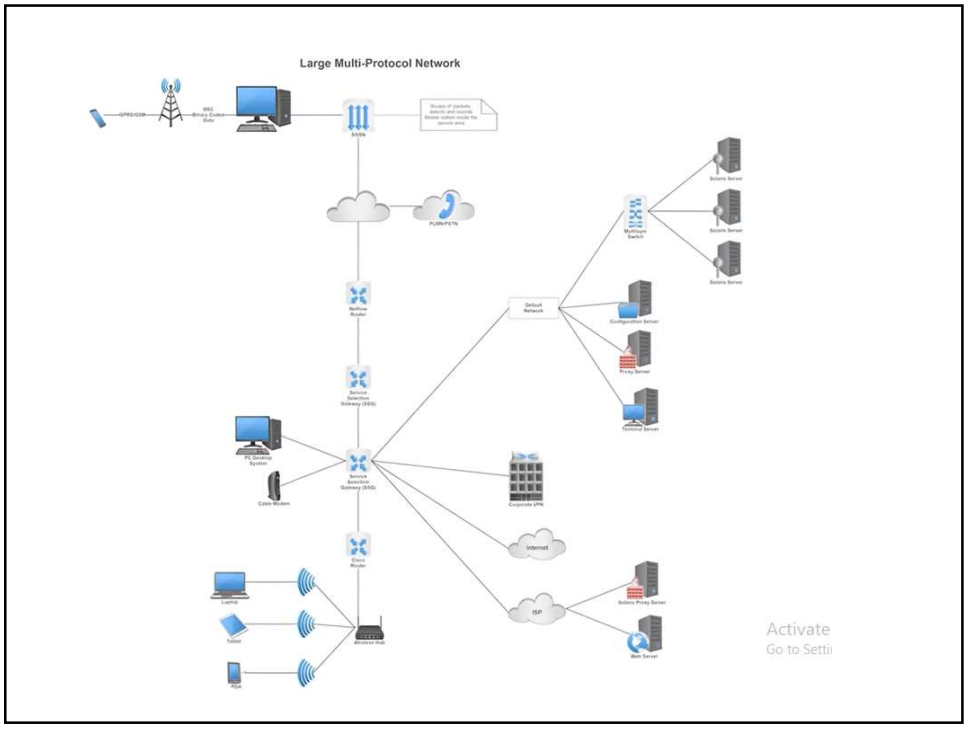


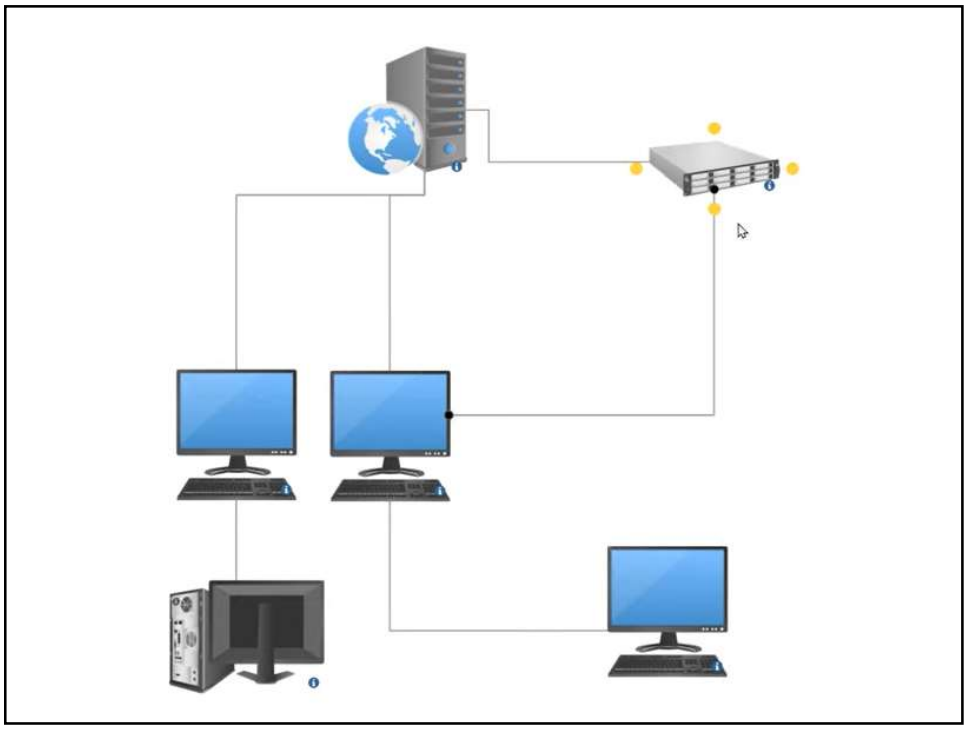

Programmers Department
Manager Room
W/C
Sever Room
Sales Department
Accounting Department
Technical Support Department

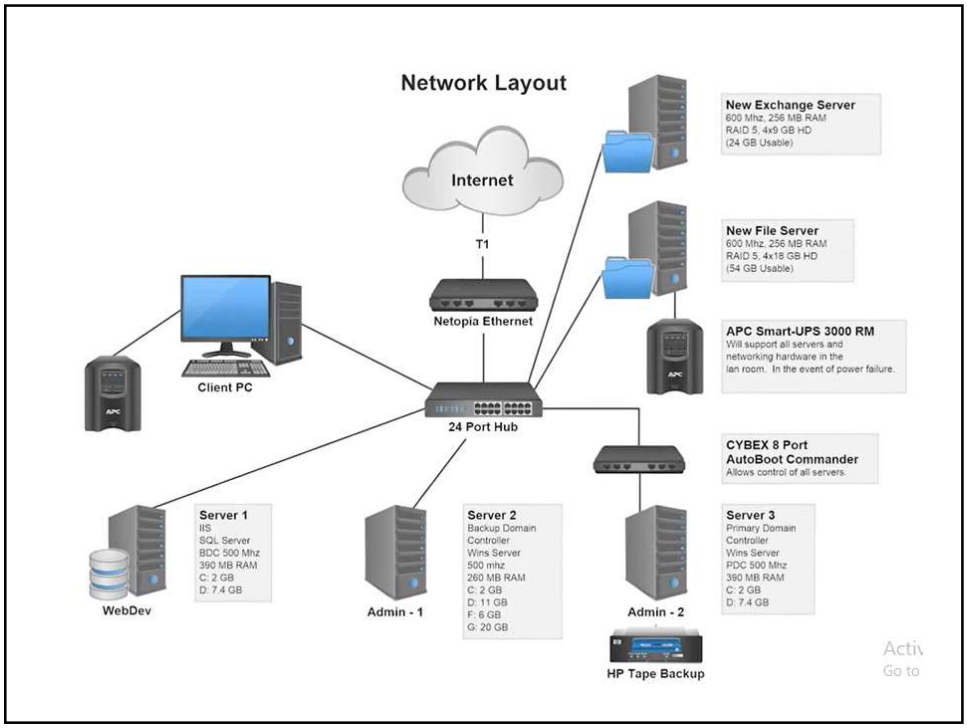

Firewall
Internet
Router
Router
Laptop
Phone
Firewall
Router
Firewall
Workstation
Server
Switch
Firewall
Switch
Workstation
PC
Phone
Phone
Phone
Phone
Workstation
Phone
Phone
PC
PC
PC
PC


Simple Network Layout
Internet
ISP 2
Backup T1
ISP 1
T1
Office
Other Office Servers
Web Server 2
Client Computers
Mirrored Database
Firewall
Web Cluster
Web Server 1
Web Server 2
Production Database

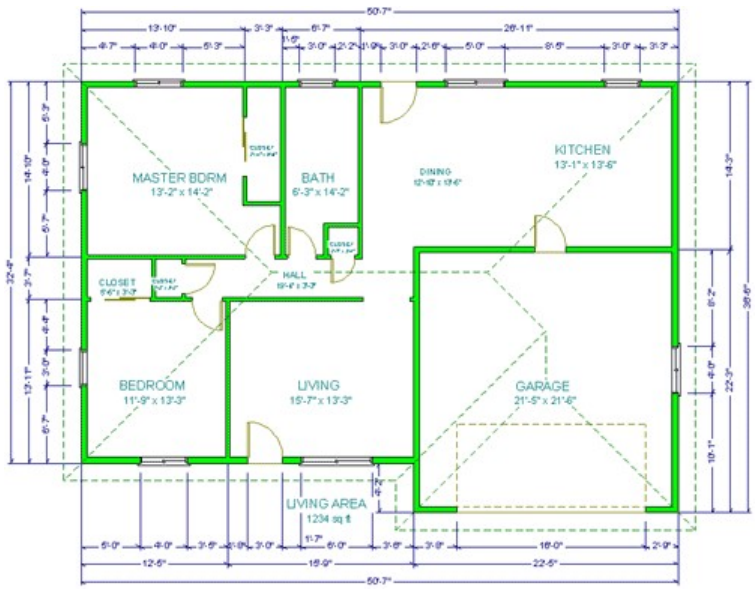

Outlook Web Access
Outlook Web Access (Http)
Outlook Mobile Access Active Sync (Http)
Outlook 2019
Pop3 / IMAP
Internet
Corporate Network
Exchange Front-end Server
Active Directory
Workgroup
Exchange Back-end Servers
Http / Pop3 / IMAP
Outlook 2019


Large Multi-Protocol Network
Activate
Go to Setti




Network Layout
Internet
T1
Netopia Ethernet
Client PC
24 Port Hub
New Exchange Server
600 Mhz, 256 MB RAM
RAID 5, 4x9 GB HD
(24 GB Usable)
New File Server
600 Mhz, 256 MB RAM
RAID 5, 4x18 GB HD
(54 GB Usable)
APC Smart-UPS 3000 RM
Will support all servers and networking hardware in the lan room. In the event of power failure.
CYBEX 8 Port AutoBoot Commander
Allows control of all servers.
Server 1
IIS
SQL Server
BDC 500 Mhz
390 MB RAM
C: 2 GB
D: 7.4 GB
WebDev
Server 2
Backup Domain Controller
Wins Server
500 mhz
260 MB RAM
C: 2 GB
D: 11 GB
F: 6 GB
G: 20 GB
Admin - 1
Server 3
Primary Domain Controller
Wins Server
PDC 500 Mhz
390 MB RAM
C: 2 GB
D: 7.4 GB
Admin - 2
HP Tape Backup

2D Drawing


MASTER BDRM
13'-2" x 14'-2"
BATH
6'-3" x 14'-2"
KITCHEN
13'-1" x 13'-6"
DINING
CLOSET
HALL
BEDROOM
11'-9" x 13'-3"
LIVING
15'-7" x 13'-3"
GARAGE
21'-5" x 21'-6"
LIVING AREA
1234 sq ft

3D Drawing

Three dimensional

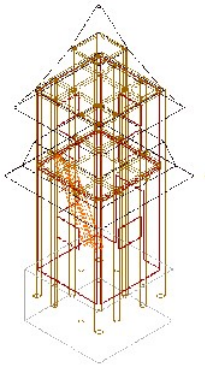
A three dimensional drawing shows the entire object in one view.

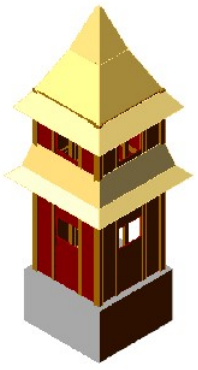
The object **is not scattered among top, front and side views**.

The **3D format is probably the best way to present the object**.

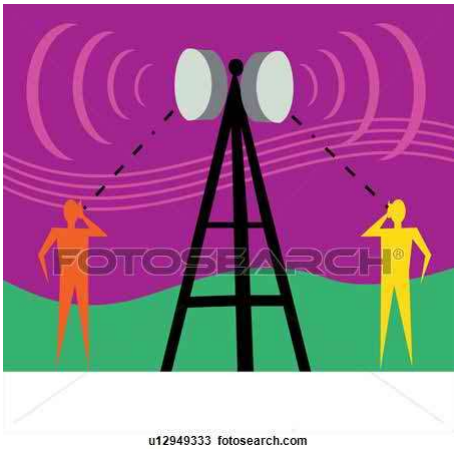
There **is often a need to illustrate** for a non technical person some object under discussion; the 3D format is the best way to present the object.

3D Drawing





3D Drawing

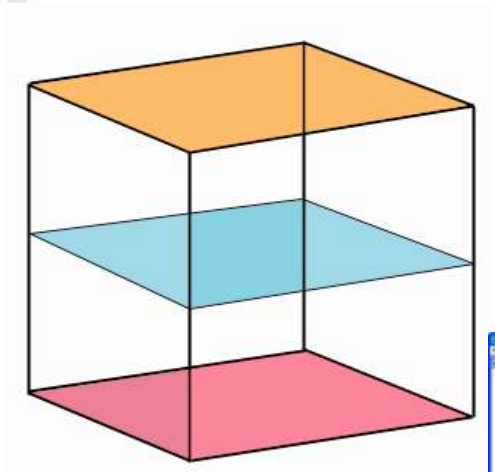


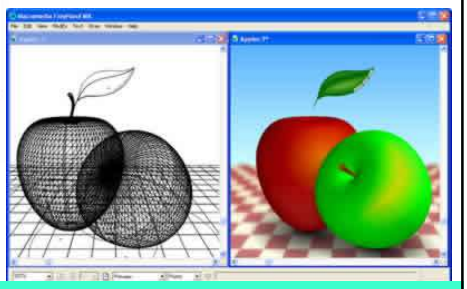
3D Drawing

3D Drawing

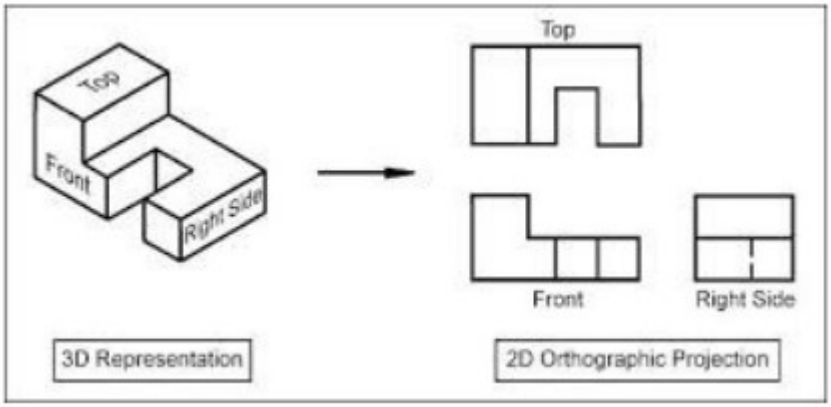
3D Drawing

3D Drawing

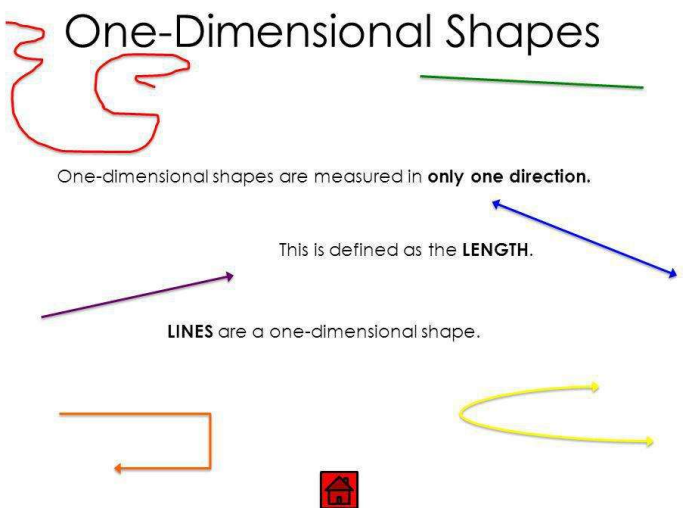




3D and 2D Drawing



1D Drawing

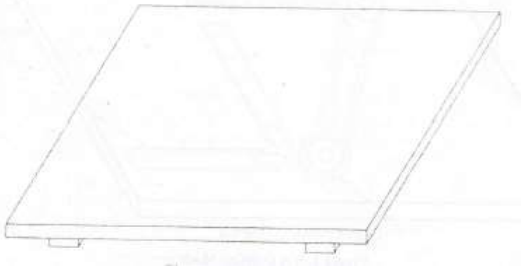


Drawing Instruments

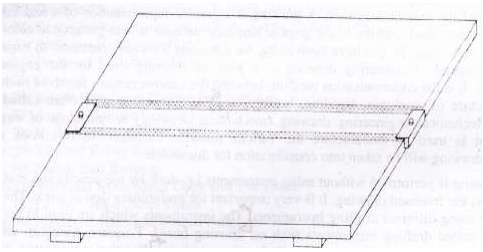
Basic Instruments:

1. **Drawing Board**
2. **Drafting media**
3. **Pencils and leads**
4. **Pens and inks**
5. **Erasers, Plastic**
6. **T-squares**
7. **Triangles/ Set squares**
8. **Scales**
9. **Curves/Irregular or French curve**
10. Compass
11. Board pin or board clip
12. Circle template
13. Protector
14. **Eraser shield**
15. **Drafting tape**
16. **Sandpaper pad or lead pointer**

Drawing Instruments



1. Drawing Board-is used for placing the drawing paper on it with the help of either cellophane tape or board pin



2. Drawing Board with a parallel straightedge-it does not require a separate T-square

Drawing Instruments

3. Drafting media:

on which one may draw

Four types of drafting media: paper, vellum, cloth and film.

The length to breath ratio of each sheet remains constant at 1:√**2.**

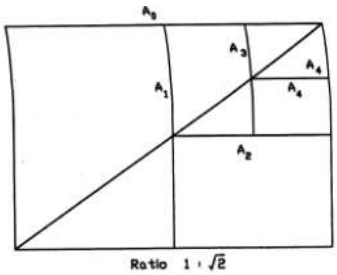


Figure 1.18: Metric Drawing paper

Drawing Instruments

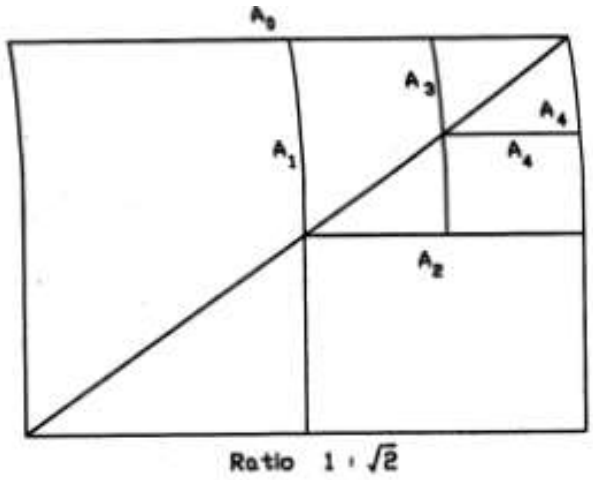
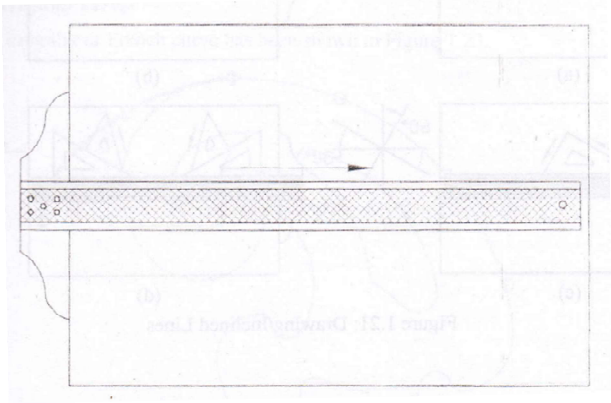


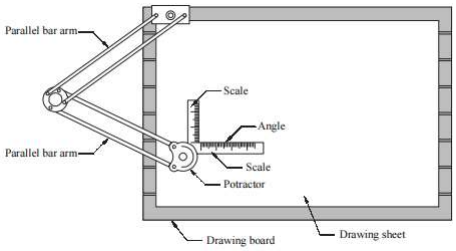
Figure 1.18: Metric Drawing paper

Drawing Instruments

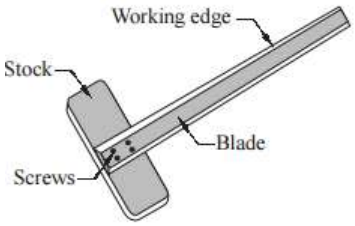


Drawing a horizontal line with T-square

Conduction band

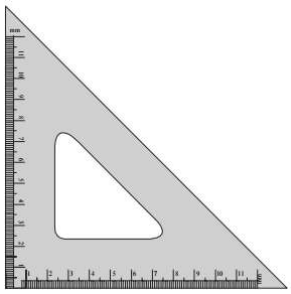


3. Drafting Machine – which replaces T-square, triangles, scales and protector

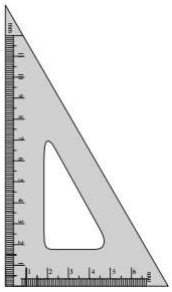


4. T square – is used to draw horizontal line

Conduction band



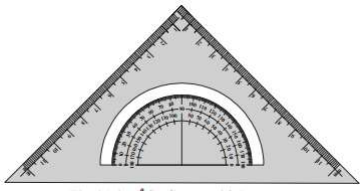
5. 45^0 Set Square



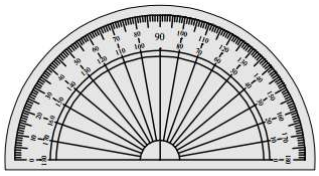
6. 30^0-60^0 Set Square

Triangles or set square – are used together with the straightedge of the T- square to draw the vertical and the inclined lines.

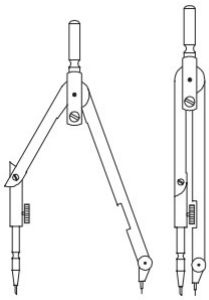
Conduction band



7. 45^0 Set Square with Protector

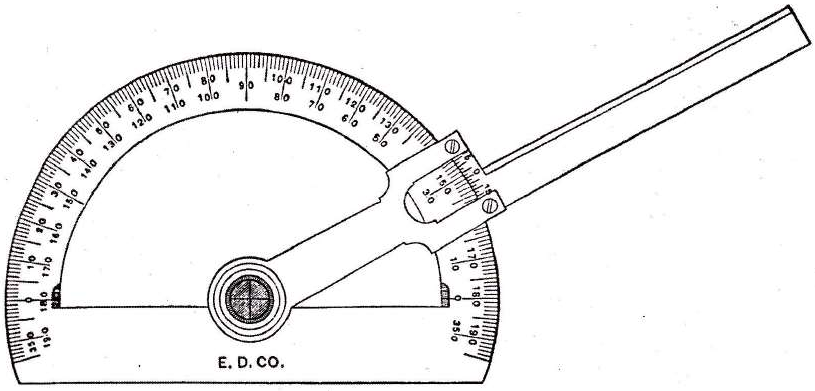


8. Protector



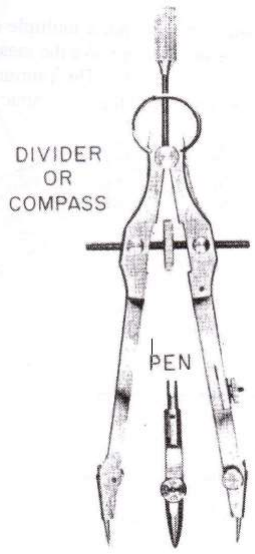
9. Compass

Energy Band



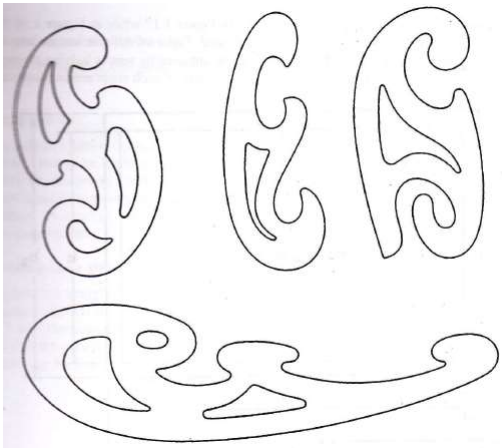
9. Protector with vernier

Drawing Instruments



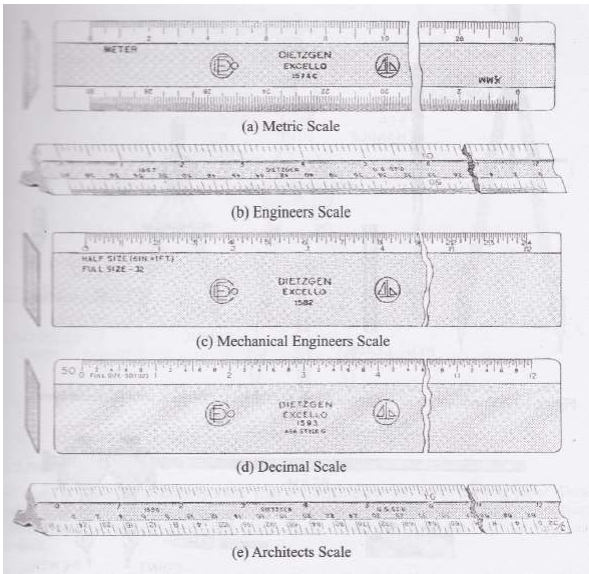
10. Divider

Drawing Instruments



11. Irregular or French Curves

Drawing Instruments



12. Different types of scale

THANKS YOU