



# **SNS COLLEGE OF TECHNOLOGY**

**(An Autonomous Institution)**



**COIMBATORE-35**

**Accredited by NBA-AICTE and Accredited by NAAC – UGC with A++ Grade**

**Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai**

**DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING**

**COURSE NAME: 19EEB302/ Power System 1**

**III YEAR / V SEMESTER**

**Unit 3 – OVERHEAD INSULATORS AND UNDERGROUND CABLES**

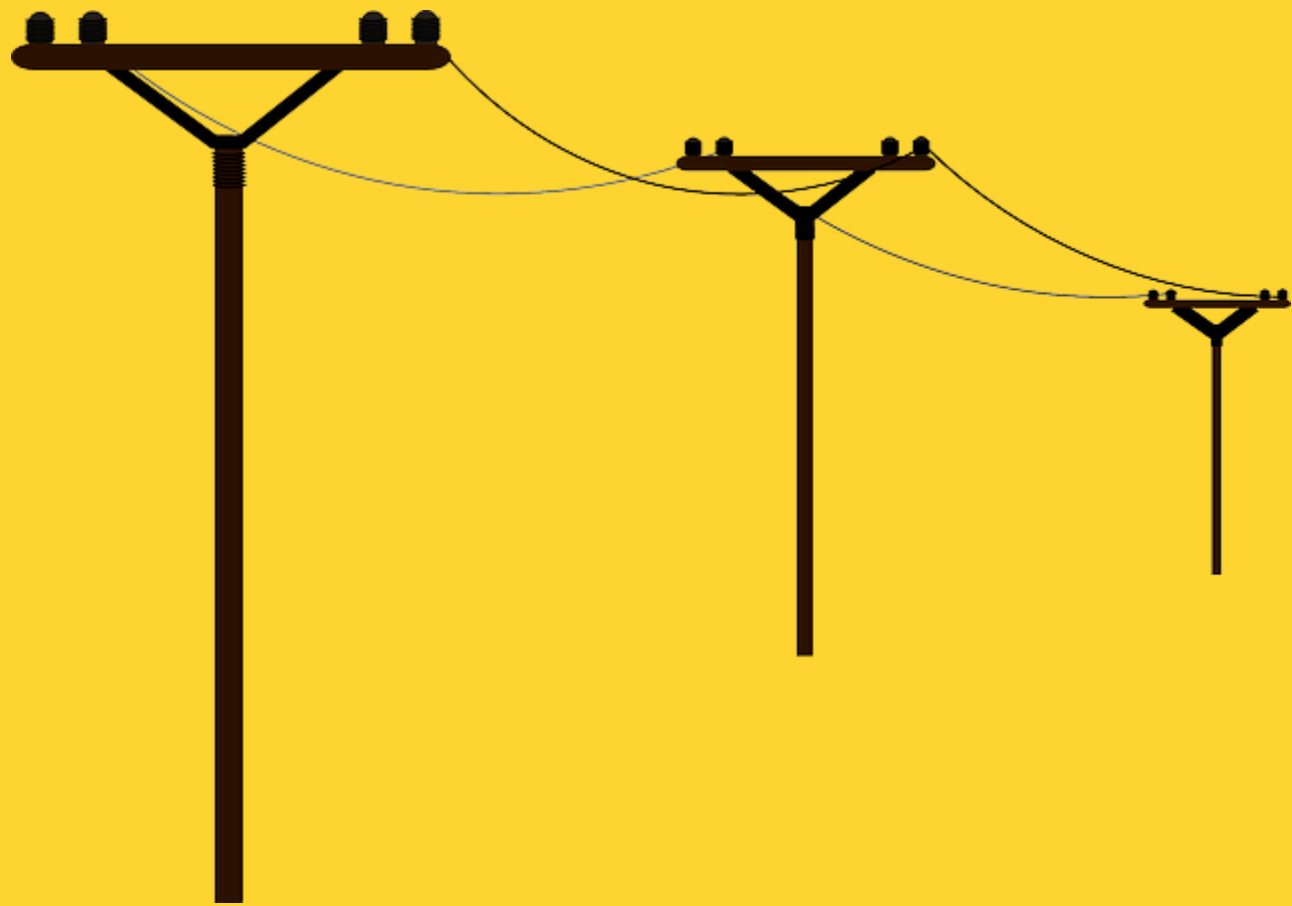
**Topic : Types of Insulators**





# What We'll Discuss

## TOPIC OUTLINE



- What is an Insulator?
- Types of Insulators
- Applications





# What is an Insulator??

An insulator gives support to the overhead line conductors on the poles to prevent the current flow toward earth.

In the transmission lines, it plays an essential role in its operation.





# Insulators



Pin Insulator

Suspension Insulator

Strain Insulator

Shackle Insulator

Post-Insulator

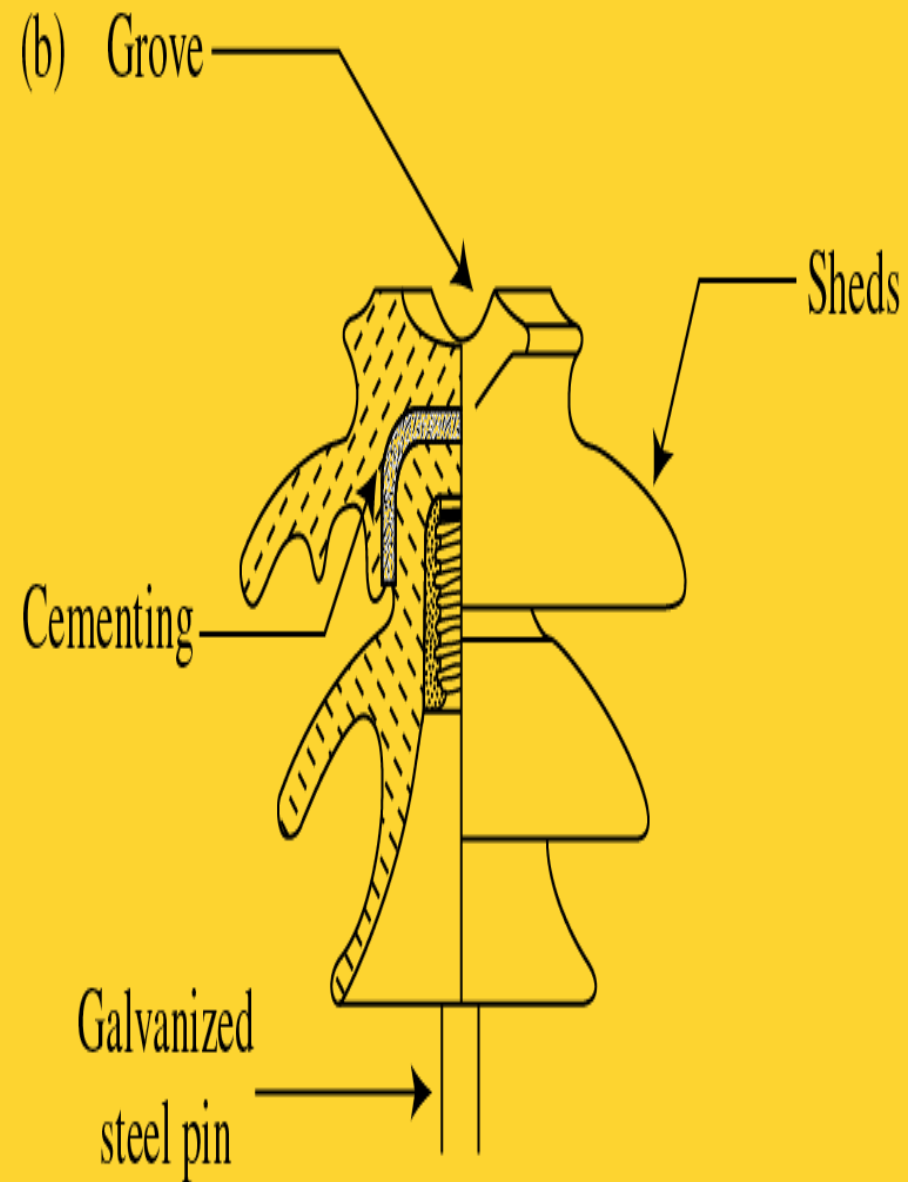
Stay Insulator

Disc Insulator





# Pin type insulator



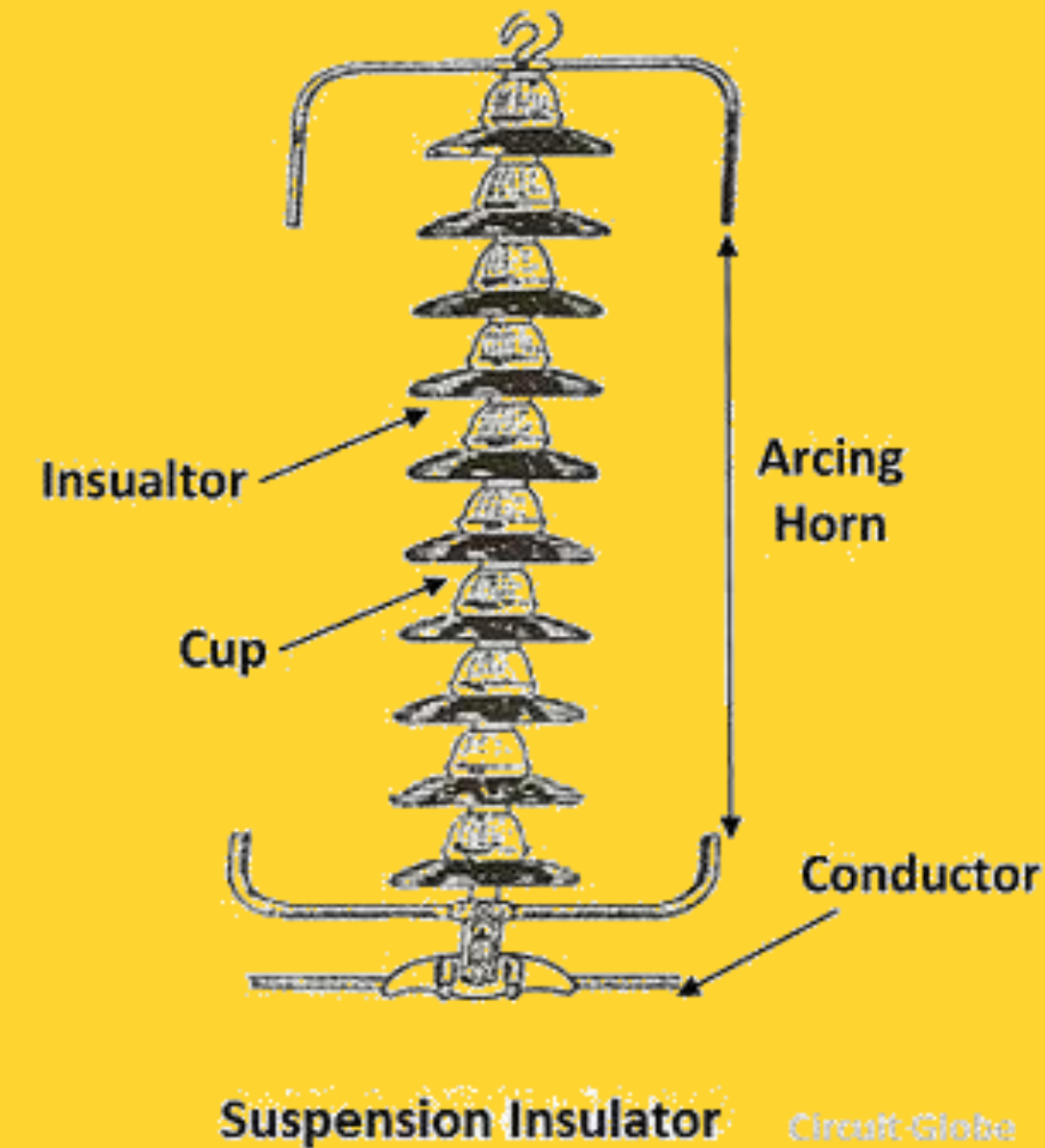
This kind of insulator is used in distribution systems. The voltage capacity of this insulator is 11kV. It is designed with a high mechanical strength material. These are connected in vertical as well as horizontal positions. The construction of this insulator is simple and needs less maintenance as compared with other types.



# Suspension type insulator



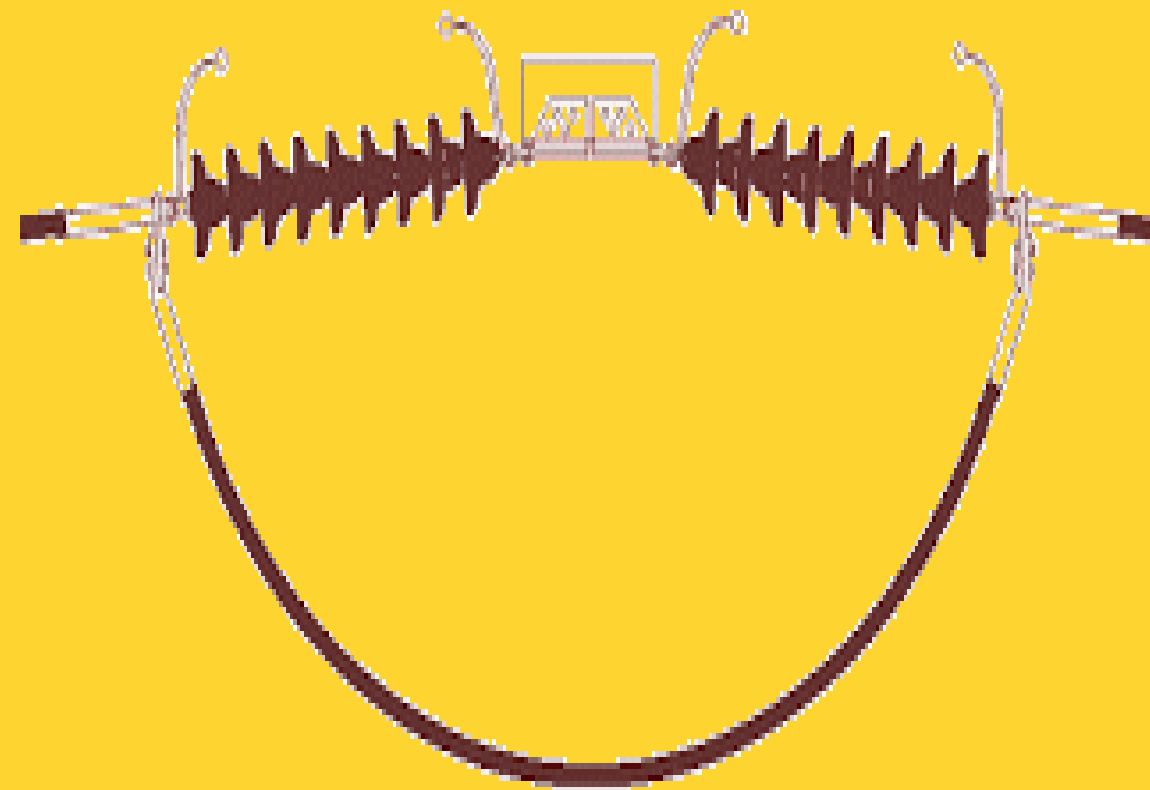
This also called disc insulator and the designing of these insulators can be done using materials like porcelain or glass. The voltage capacity of suspension insulator ranges from 11 kV to 765 kV. It is used in overhead transmission lines by providing more flexibility. It uses various discs based on the level of voltage.



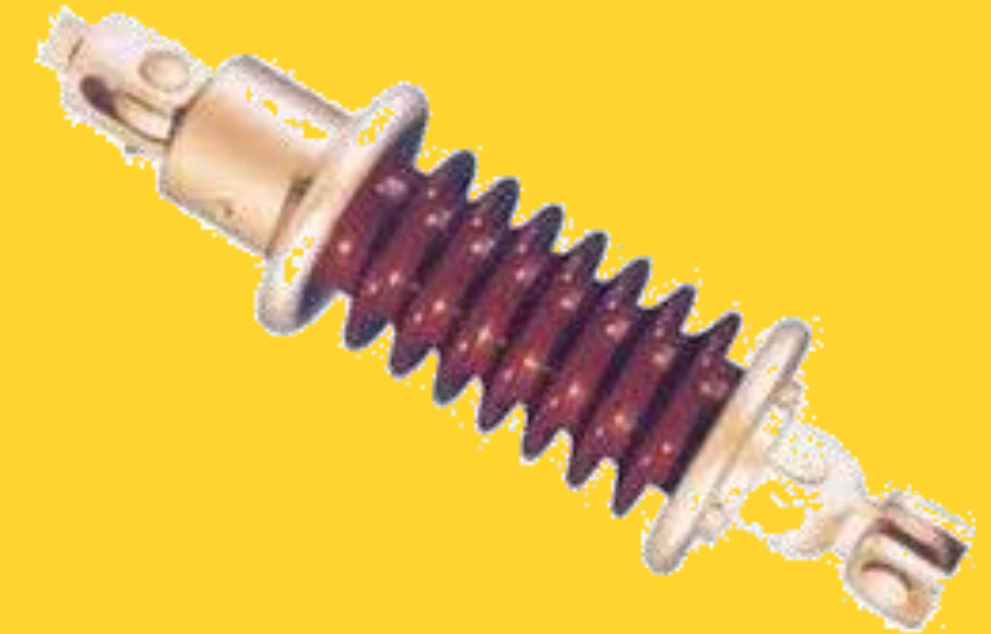


# Strain type insulator

This is similar to suspension type insulators because it is used in an overhead transmission system but its specifications and working are somewhat different. The voltage capacity of the strain insulator is 33kV. Mostly in the transmission line, it is placed in bend otherwise arm place.



STRAIN INSULATOR





# Shackle insulator



These insulators are small in size, used in overhead distribution systems. The connection of this insulator can be done by using a metallic strip. The voltage capacity of this insulator is 33 kV and works in the positions of bend or circular turn. At present, these insulators are used as strain insulators but they are used in less voltage distribution lines.





# Glass Insulator



Glass insulators started being used in the 18th century for telegraph and telephone lines, which were then, replaced by ceramic and porcelain types in the 19th century.

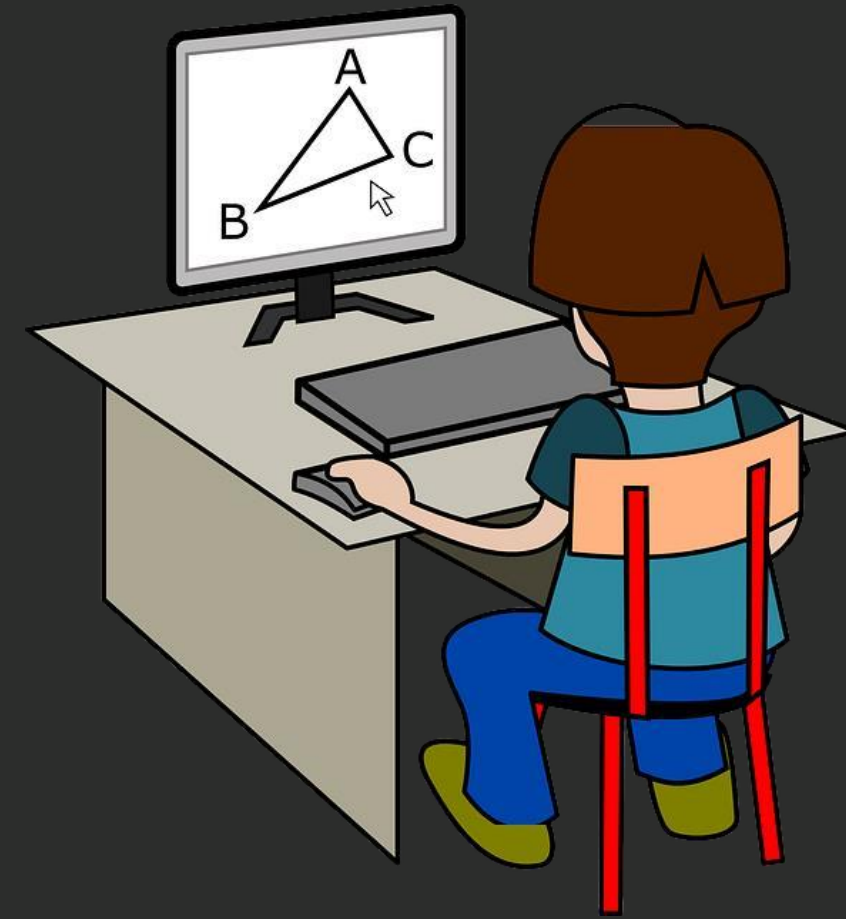
To overcome this, toughened glass types were introduced, which became popular due to their longer lifespan.





## FROM THEORY TO PRACTICE

These are used in circuits, electric boards to ensure safety techniques. These insulators protect the materials from electricity and heat. Plastic and rubbers are used to manufacture daily products.



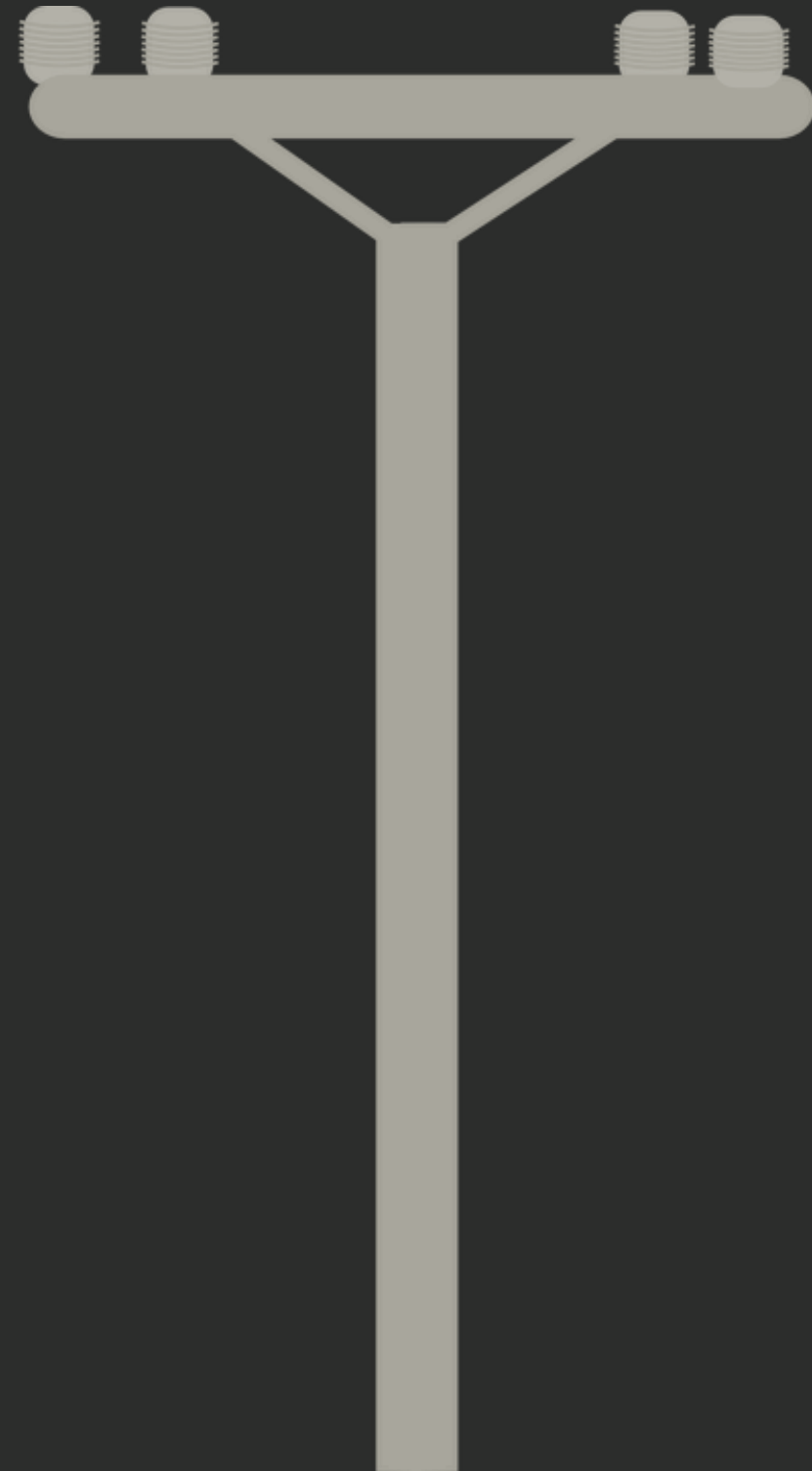
# Practical Applications



RECALL TIME



ASSESSMENT  
TIME



# THANK YOU

