# How Recursion Works

A whiteboard with writing on it

Description automatically generated with medium confidence

A whiteboard with writing on it

Description automatically generated with medium confidenceA white paper with black writing

Description automatically generated with low confidence

Chart, line chart

Description automatically generated

Text, letter, whiteboard

Description automatically generated

# Recursion Generalization

Text

Description automatically generated with medium confidence

# How Recursion uses Stack

Text, letter

Description automatically generatedA whiteboard with writing on it

Description automatically generated with medium confidence

# Recurrence Relation – Time Complexity of Recursion

A whiteboard with writing on it

Description automatically generated with low confidence

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generated

# **Static and Global Variables in Recursion**

## **Global Variables**

Diagram

Description automatically generatedA piece of paper with writing on it

Description automatically generated with medium confidence

## **Static Variables**

Diagram, text, whiteboard

Description automatically generated

Text, application

Description automatically generated

# **Tail Recursion**

Text

Description automatically generated with medium confidenceDiagram, text

Description automatically generated

# **Head Recursion**

A picture containing text

Description automatically generated

Text, letter

Description automatically generated

Unlike tail recursion, it is not possible to directly see and convert into loop.  
Some logics has to be implied to convert head recursion to loop.

# **Tree Recursion**

Text

Description automatically generated

A whiteboard with writing on it

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A white board with writing on it

Description automatically generated with medium confidence

Diagram

Description automatically generated  
Text

Description automatically generated

Text

Description automatically generated

Shape, polygon

Description automatically generated

  
Text

Description automatically generated with medium confidence