**Binary Recursion**

**1. Definition**

Binary recursion occurs when a function makes two recursive calls to itself. This is common in divide-and-conquer algorithms and tree-based operations.

**2. Example Implementation: Fibonacci with Binary Recursion**

def fibonacci\_binary(n):

*# Base cases*

if n <= 0:

return 0

if n == 1:

return 1

*# Two recursive calls*

return fibonacci\_binary(n - 1) + fibonacci\_binary(n - 2)

**3. Binary Recursion Tree Visualization**

Copy

fibonacci(4)

├── fibonacci(3)

│ ├── fibonacci(2)

│ │ ├── fibonacci(1) = 1

│ │ └── fibonacci(0) = 0

│ └── fibonacci(1) = 1

└── fibonacci(2)

├── fibonacci(1) = 1

└── fibonacci(0) = 0