

# Formal Methods

## 0. Introduction

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Consider the following program:

$$f(x, y) \stackrel{!}{=} \begin{cases} 1 & x = 0 \\ f(0, f(1, y)) & x = 1 \\ f(x - 2, y + 1) & \text{otherwise} \end{cases}$$

1. What is the “value” of  $f(1,1)$ ?
2. What is the “meaning” of  $f$ ?
3. How is  $f$  calculated?