

```

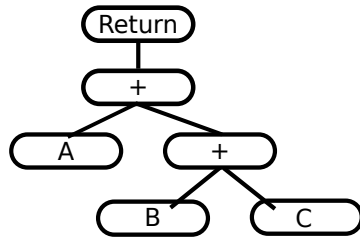
Program(A,B,C){
  Return A + B + C;
}

```

(int X)+(int Y) = (X+Y)*1.1
 Return (int X) = X*1.2
 Failure Mode for Addition of Integers:
 - Modifies Sum Value By 10%
 Failure Mode for Return of Integer
 - Modifies Return Value By 20%

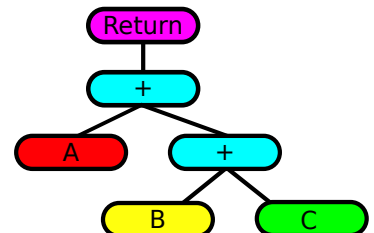
Parse

Parse Tree

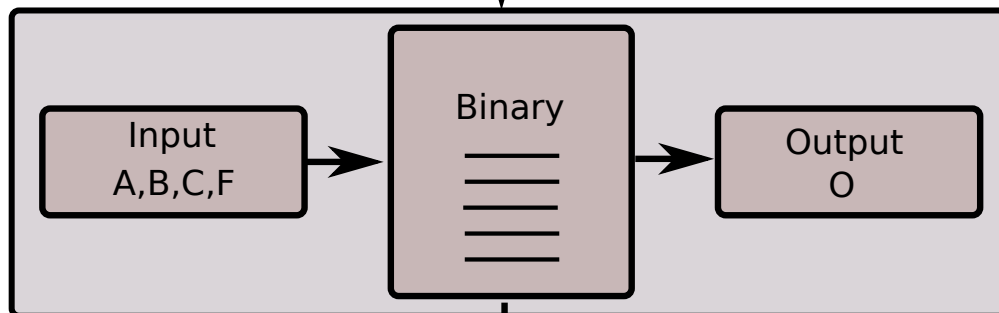


Unify Operations

Unified Parse Tree



Criticality Compiler



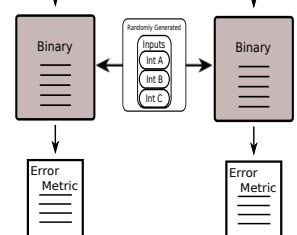
Monte-Carlo Sampler

Criticality

$$E(A,B,C,O) = \frac{|\text{Program}(A,B,C) - O|}{30}$$

A = rand() mod 10;
 B = rand() mod 10
 C = rand() mod 10

$$F = \begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix} \quad F = \begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$$



Difference