Execute all program paths symbolically collecting a path assertion per program path:

$$\mathbf{se} : \text{Program} \times (\text{Variable} \to \text{Term}) \to \mathcal{P}(\text{Assertion})$$

Definition

- Let Π be a program.
- Let x, y, z, ... be the program variables of Π.

Symbolic execution of Π with *symbolic store* $\Sigma_0 \equiv x = x_0 \wedge y = y_0 \wedge z = z_0 \wedge \ldots$ satisfies:

$$\bigvee \mathbf{se}(\Pi, \Sigma_0) \equiv \mathbf{sp}(\Pi, \Sigma_0)$$

Question

Express $\mathbf{sp}(\Pi, \varphi) \equiv \exists x_0, y_0, z_0, \ldots : \varphi(x_0/x, y_0/y, z_0/z, \ldots) \wedge \bigvee \mathbf{se}(\Pi, \Sigma_0)$