

PROGRAM SYNTHESIS with LIVE BIDIRECTIONAL EVALUATION

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PROGRAM SYNTHESIS

Computer generation of programs *satisfying* a *specification*

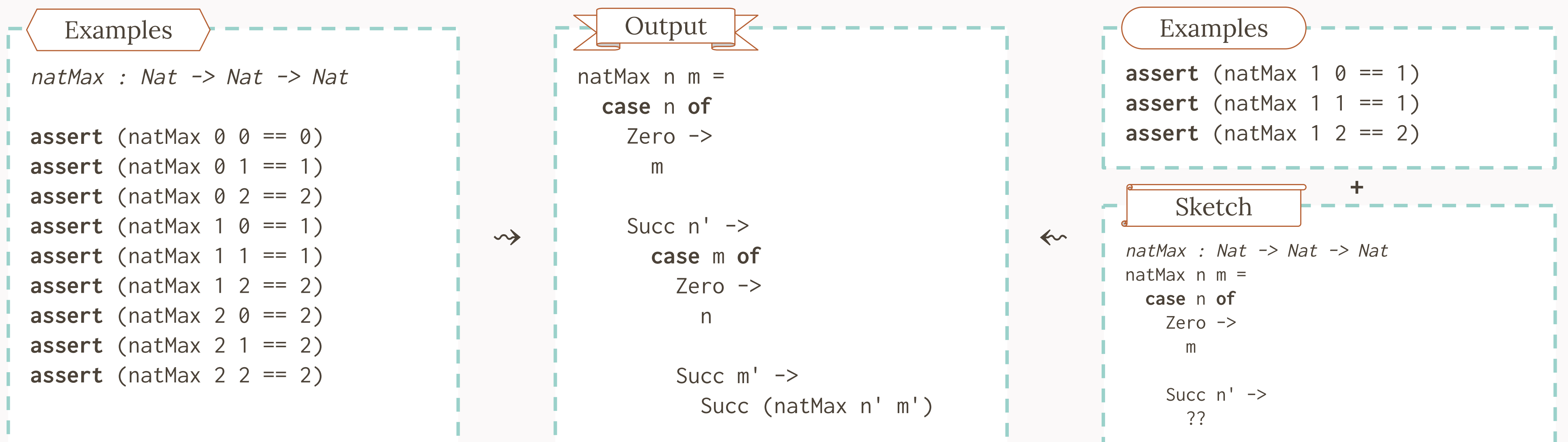
PROGRAMMING BY EXAMPLE

Specification `assert (sort [] == [])`
`assert (sort [3, 1, 2] == [1, 2, 3])`

Satisfaction Dynamic verification
 Test each input-output pair: *evaluate and check*

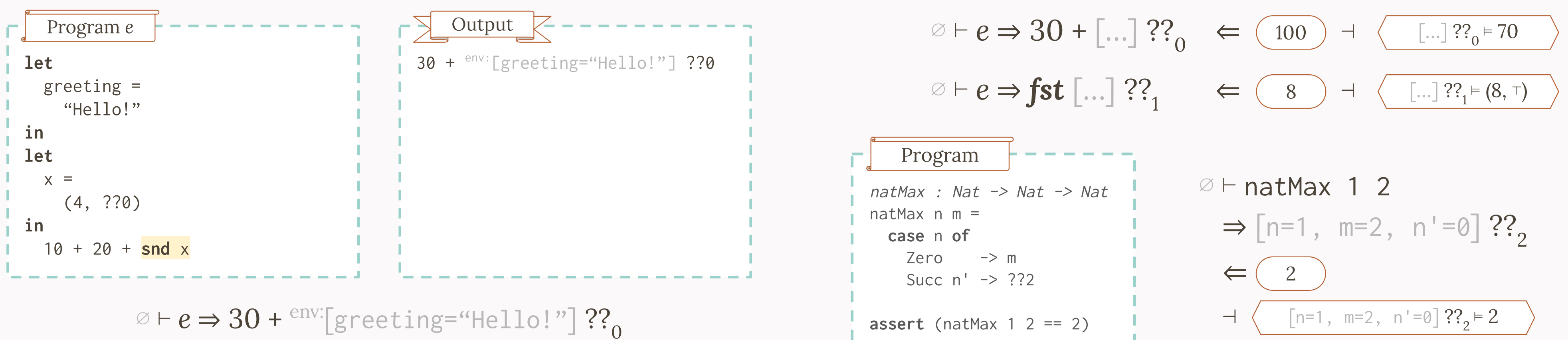
MYTH

SKETCH-n-MYTH



LIVE EVALUATION

LIVE UNEVALUATION



LIVE BIDIRECTIONAL EVALUATION

Satisfaction $E \vdash e \Rightarrow r \Leftarrow ex + X$

Live evaluation Live unevaluation

