Motivation

EECS 20

Lecture 1 (January 17, 2001)

Tom Henzinger

REALITY	MODEL
Bridge	Static equations
Aircraft	Flight equations
TEST	SIMULATE CALCULATE

REALITY

MODEL

Bridge

Abstract

Static equations

Aircraft

Build
Predict

Flight equations

TEST

SIMULATE
CALCULATE

REALITY	MODEL
Piece of hardware	???
Piece of software	???

Wrong questions !

REALITY

MODEL

Piece of information

- audio
- video
- text

Transformer of information

- for communication
- for computation
- for storage

REALITY	MODEL
"Signal" Piece of information - audio - video - text	Mathematical functions
"System" Transformer of information - for communication - for computation - for storage	State machines Linear equations

REALITY

MODEL

"Signal"

Piece of information

- audio
- video
- text

Mathematical functions

Abstract

"System"

Transformer of information

- for communication
- for computation
- for storage

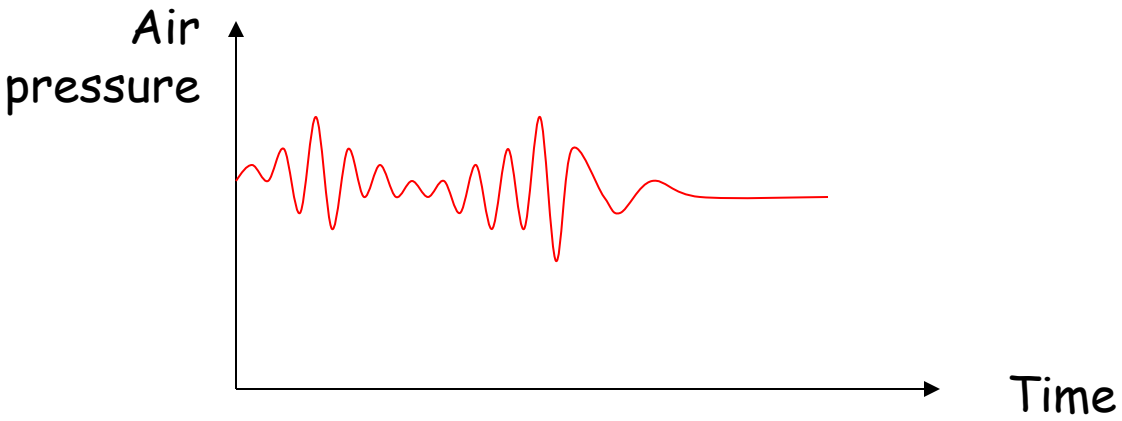
State machines

Linear equations

Implement
Predict

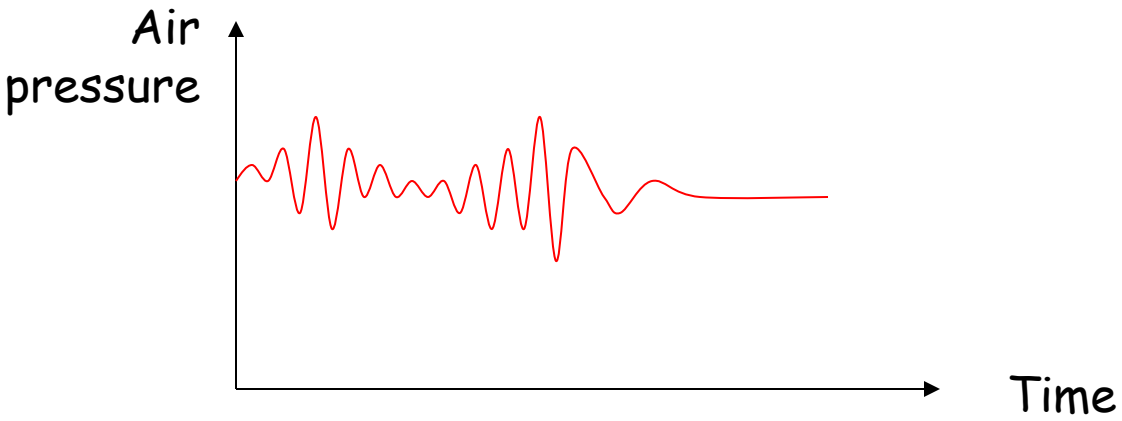
Simulate
Calculate

Signal



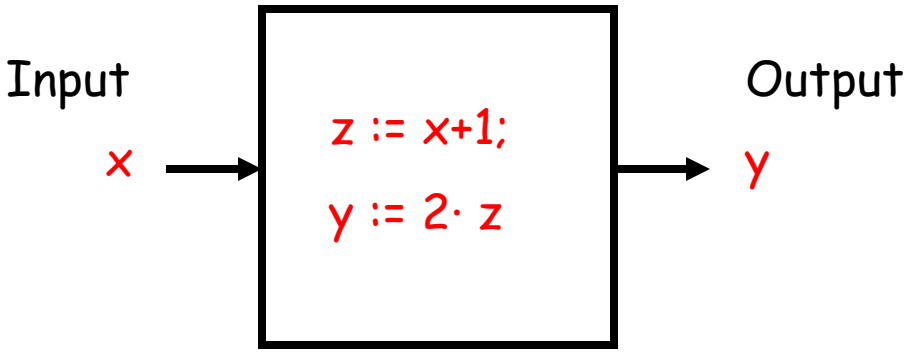
Sound: Time $\rightarrow$ Air pressure

Signal



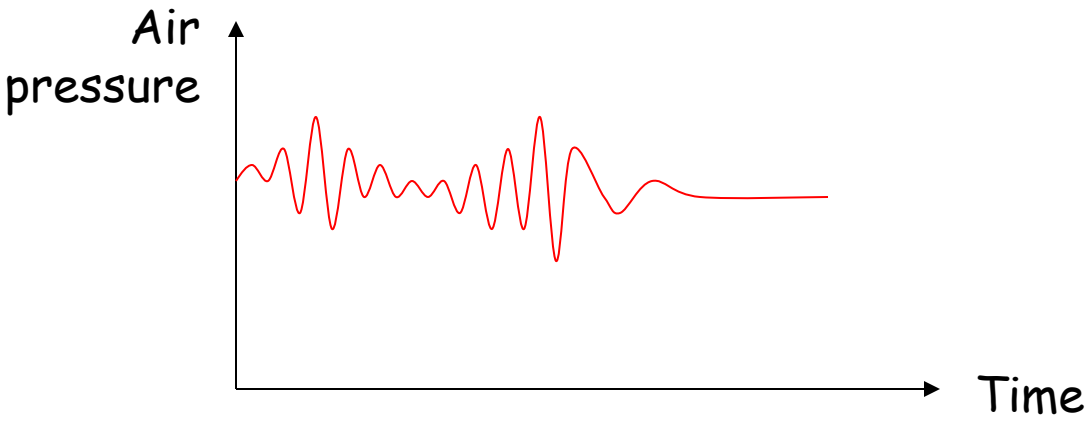
Sound: Time → Air pressure

System



Program: Inputs → Outputs

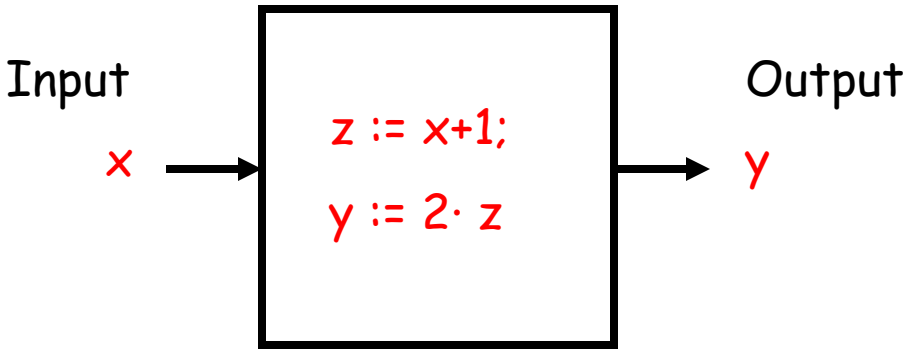
Signal



Function description

Sound: Time → Air pressure

System



Function prescription

Program: Inputs → Outputs