IxD Theory 2: Telecomunicazioni

IUAV University of Venice

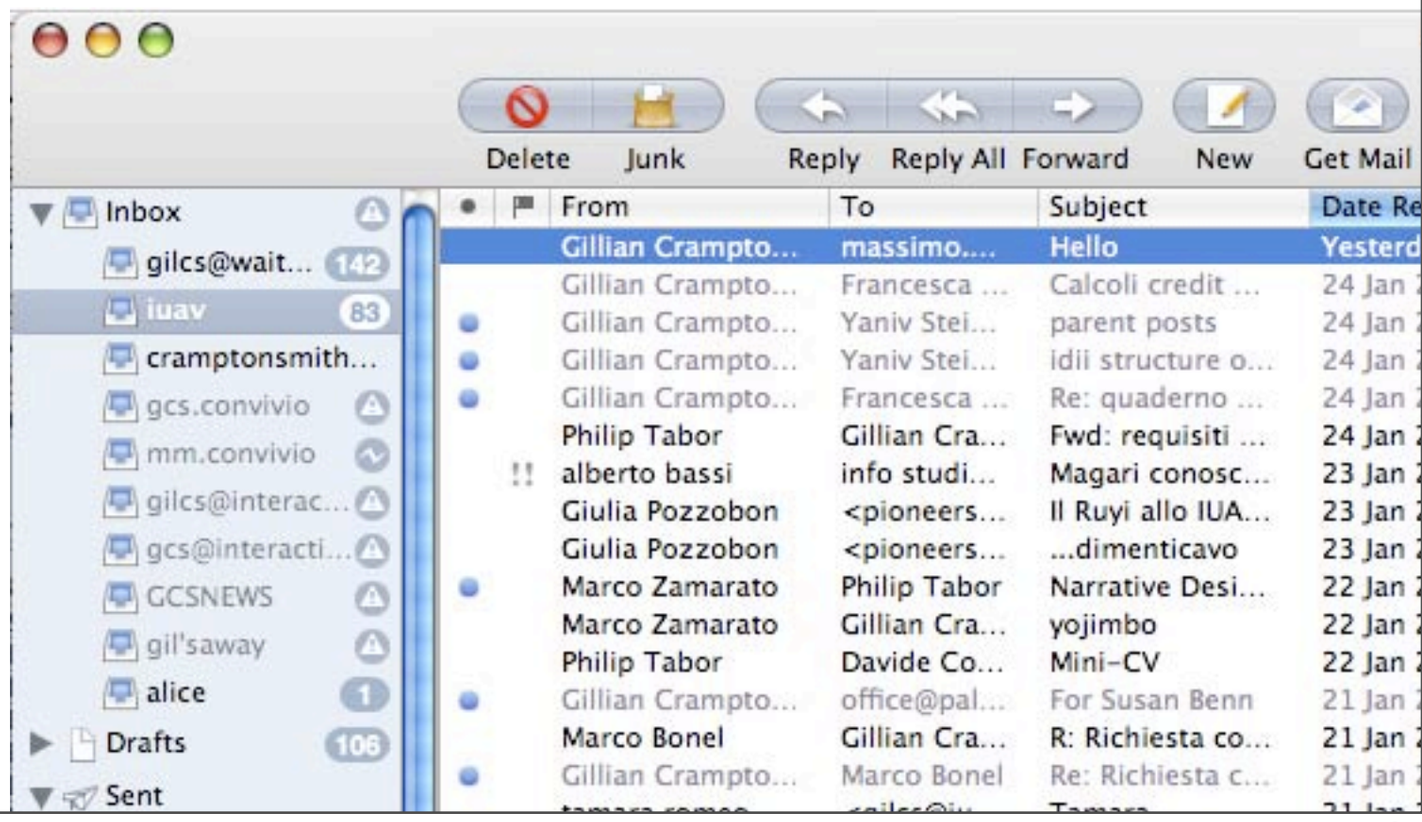
Visual and Multimedia Design graduate programme

Programming the computer

Programming

How do we get from manipulating 0s and 1s in the computer chip to an email program?

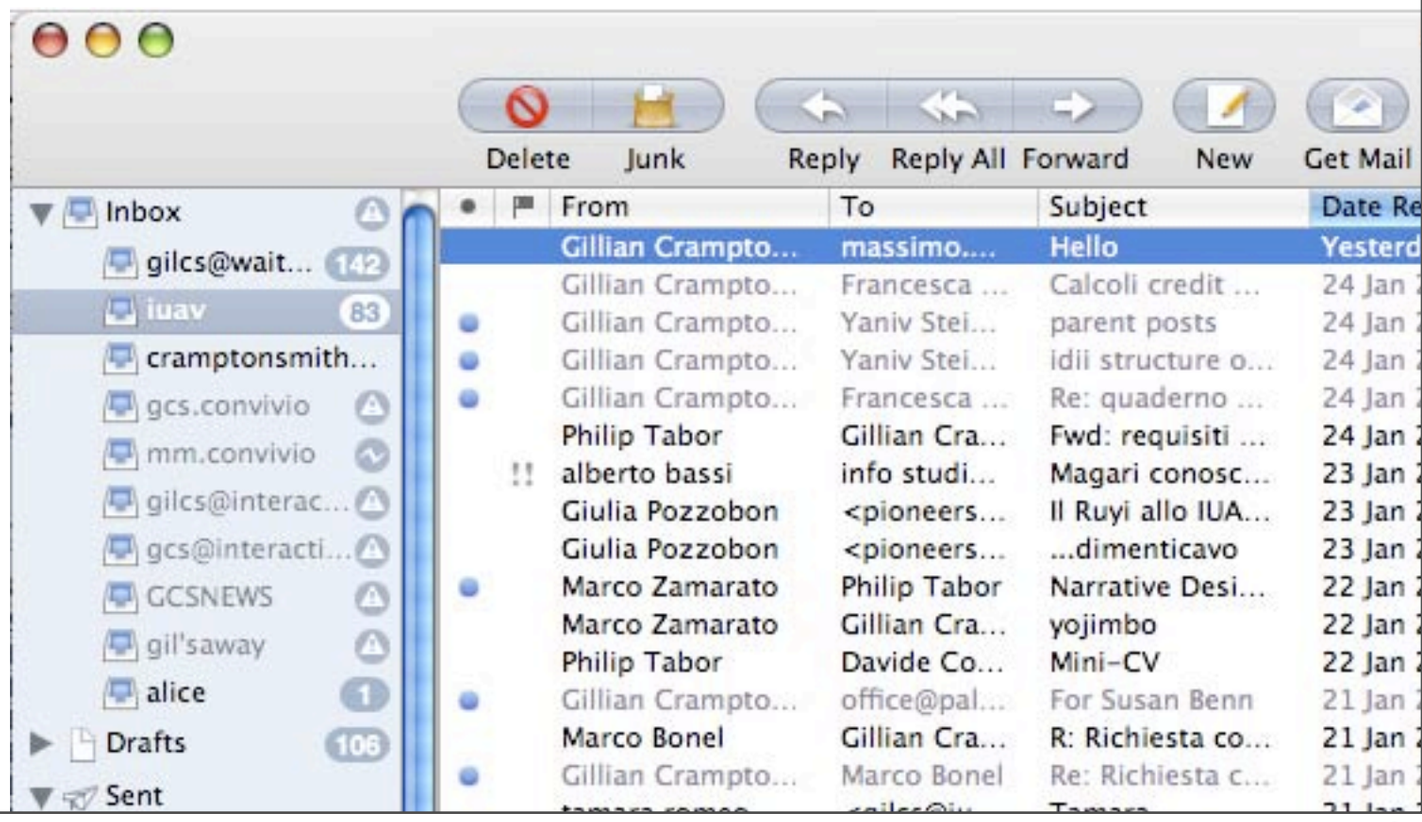
PROGRAMMING CODE!



Programming

We need to program the computer—tell it what to do

This program has to be turned into the 0s and 1s which a computer understands



Levels of programming languages

Visual programming languages – like Visual Basic or MaxSP

Meta-languages – that write code for you, like Dreamweaver, the web design program

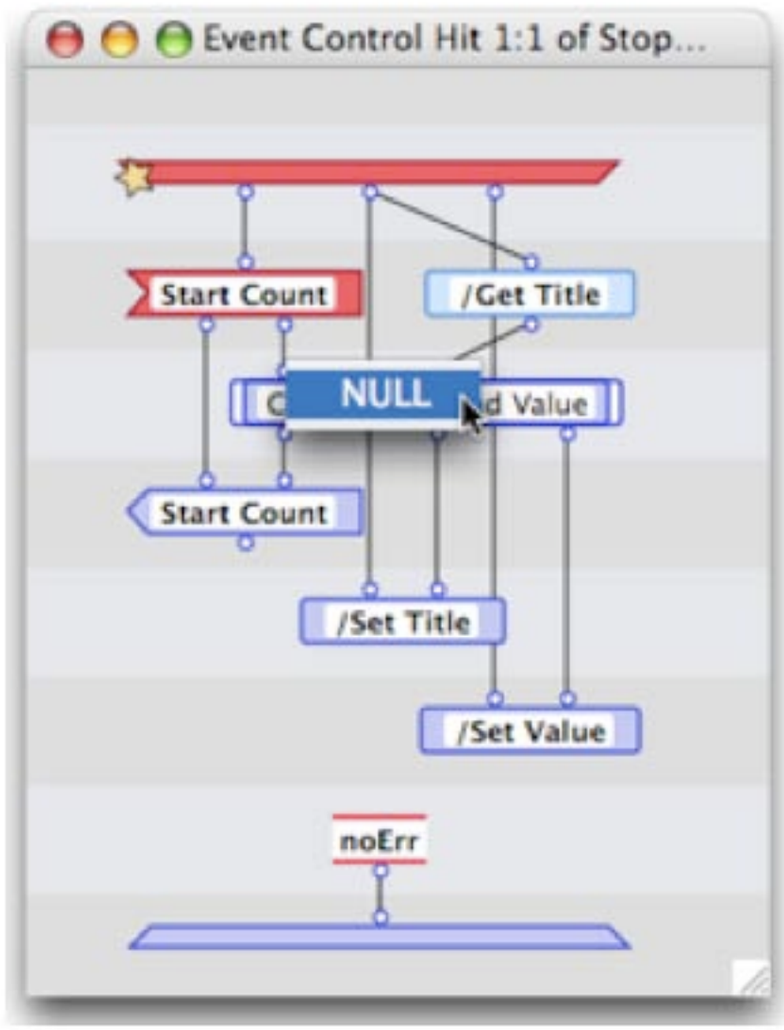
High level languages – like C or Java or Processing

Assembly language – using mnemonics which are then translated into machine language

Machine language (using bit patterns) 0s and 1s

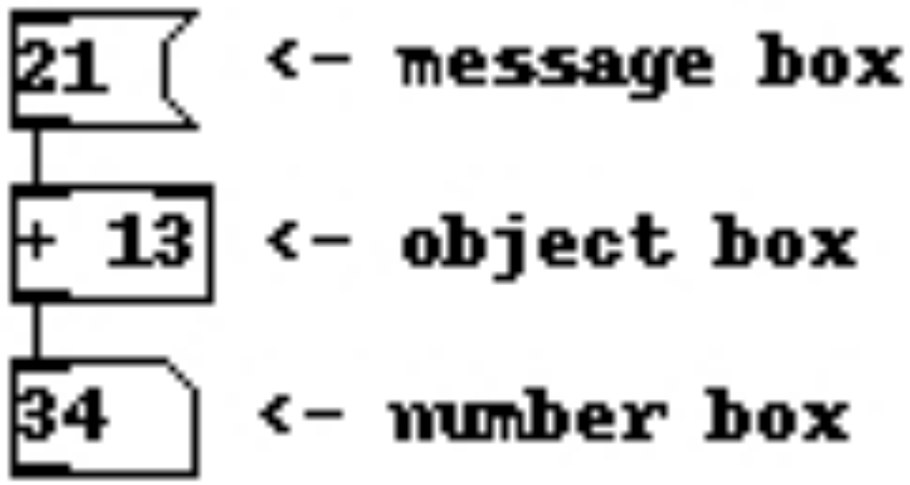
Visual programming languages

Prograph (now Marten) for the Mac



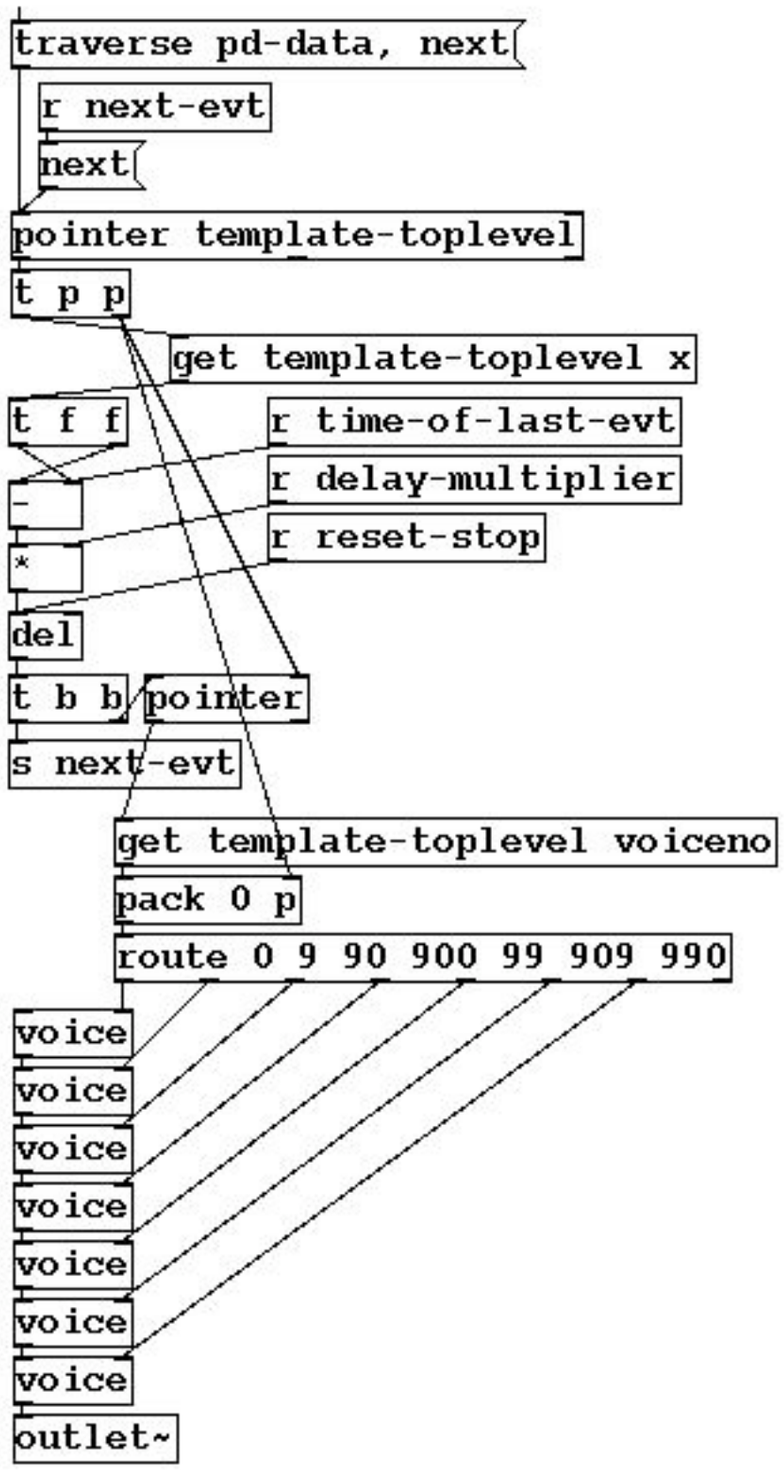
Visual programming languages

Pure Data music programming



Visual programming languages

Pure Data music programming



Visual programming languages

Microsoft VPL

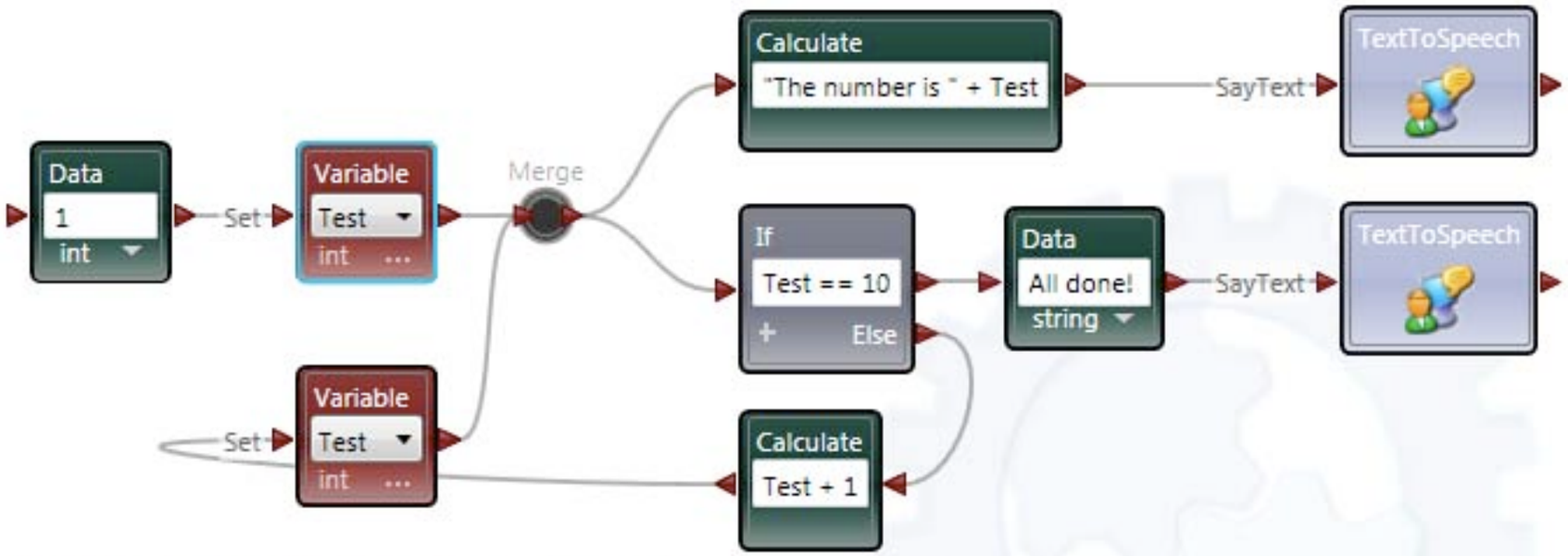
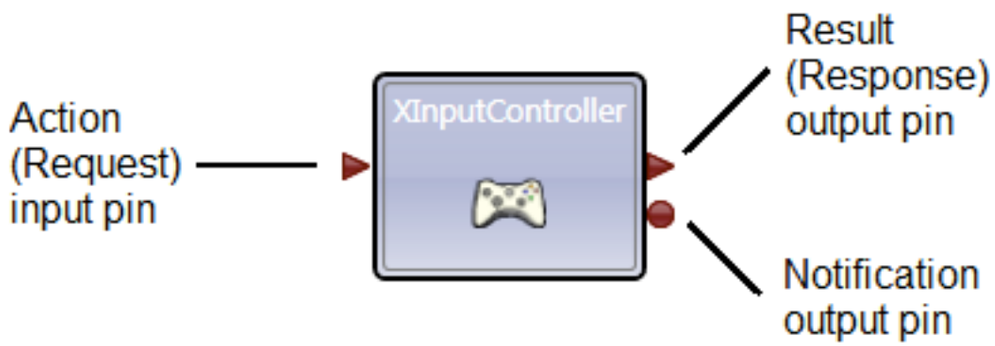
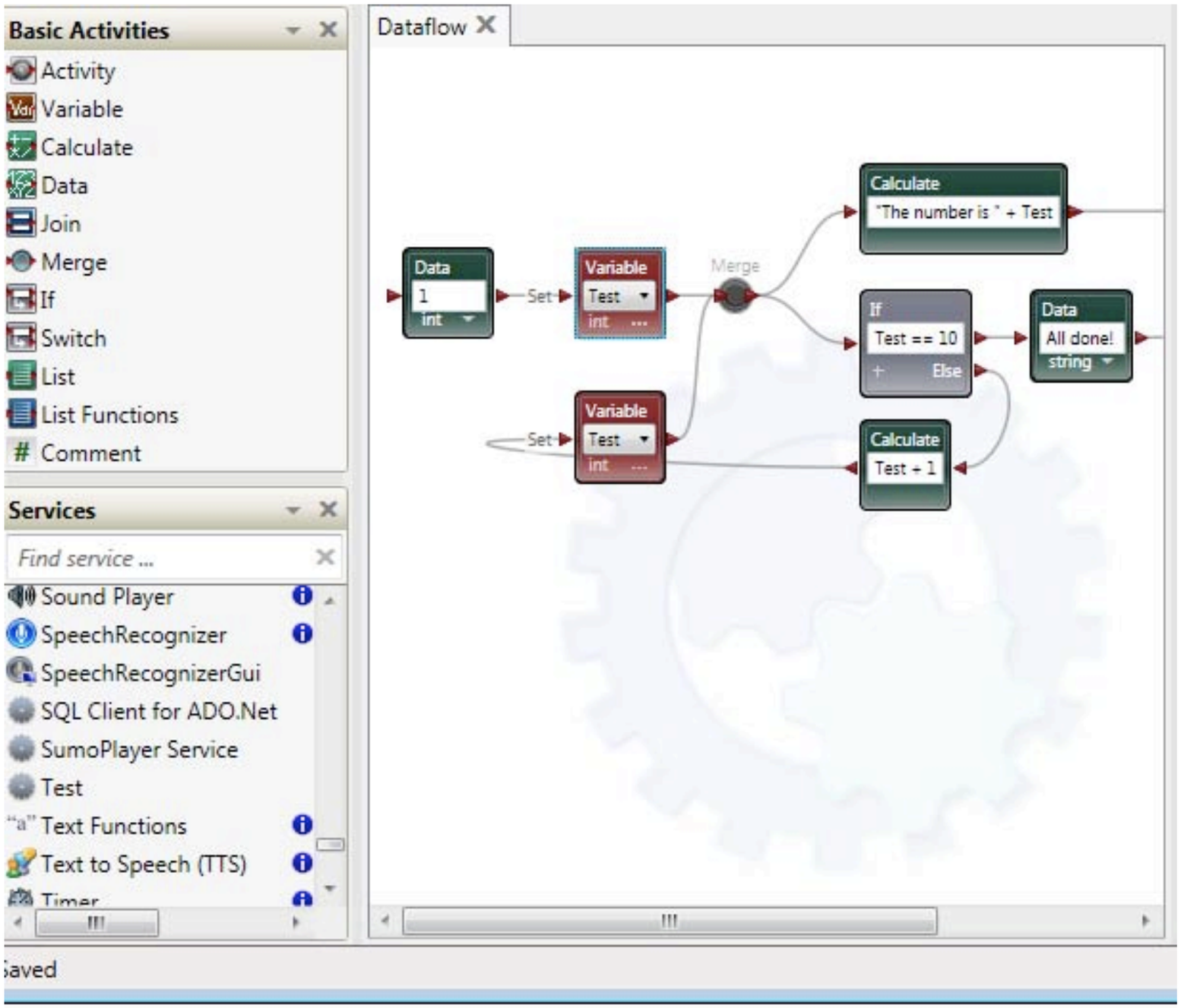


Figure 2 - Activity blocks have connections that represent messages sent from one activity to another



Visual programming languages

Microsoft VPL



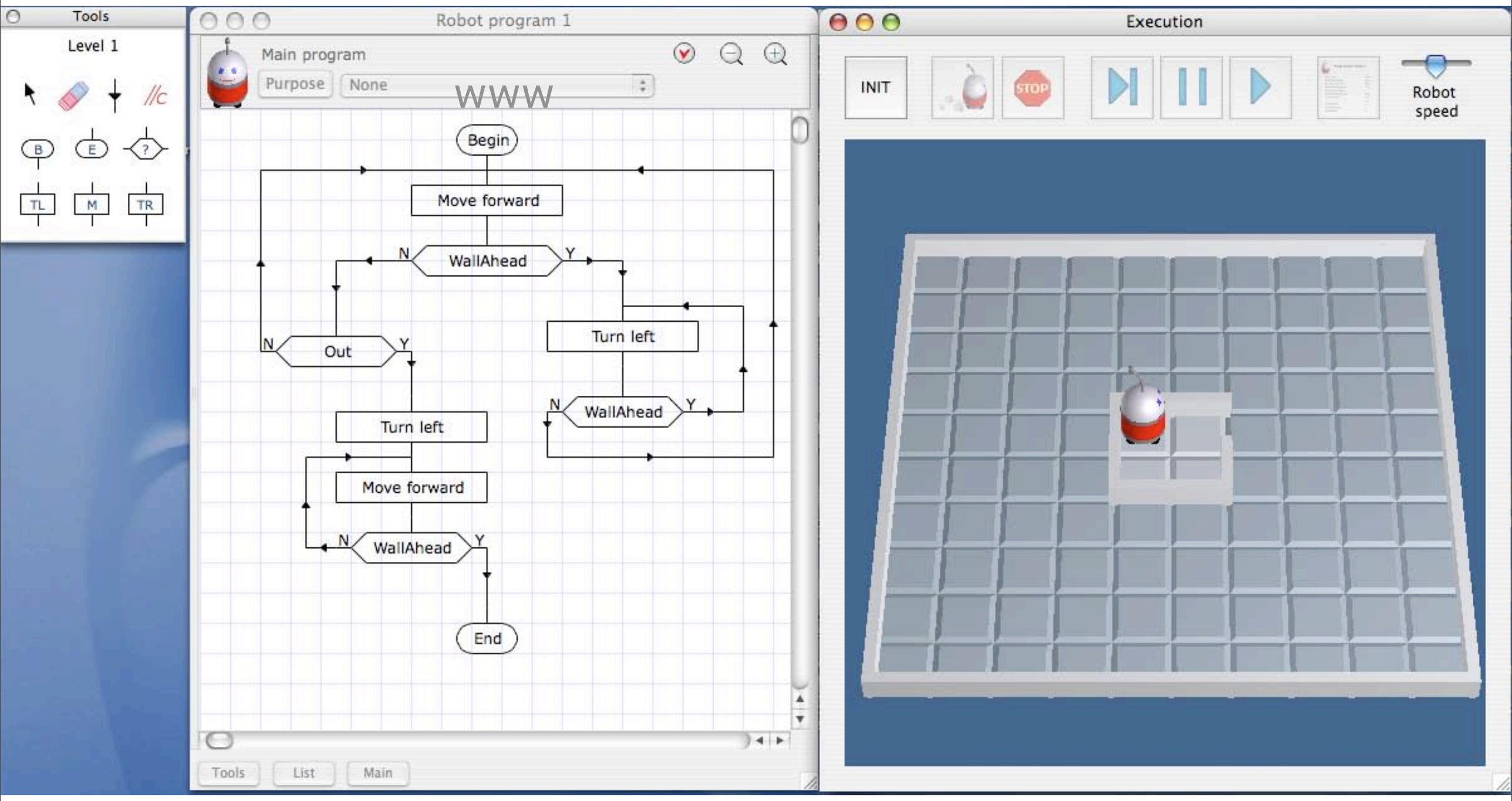
gure 1 - Sample Microsoft VPL diagram

Visual programming languages

For example: RobotProg

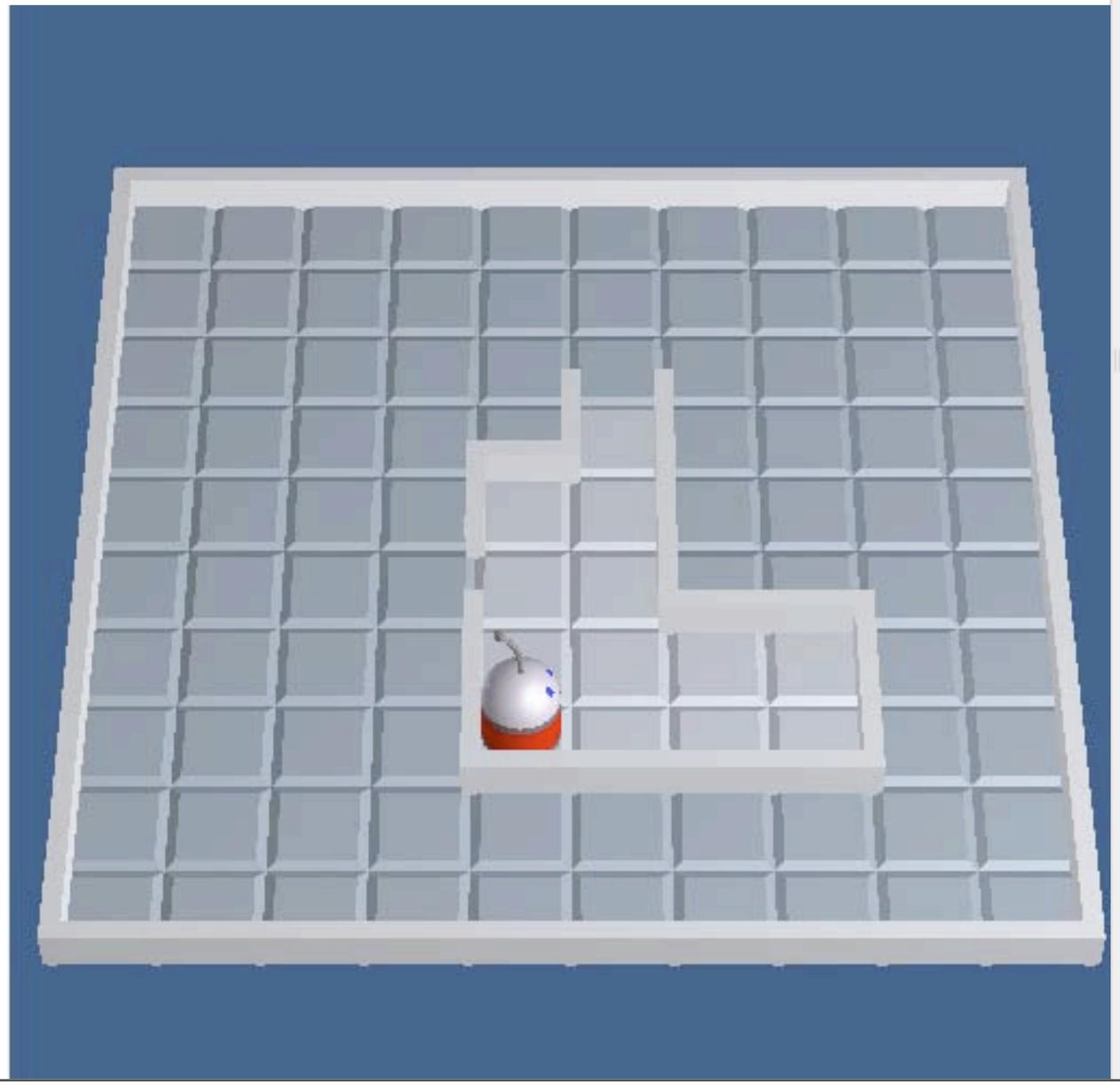
http://www.physicsbox.com/supportrobotprogen.html

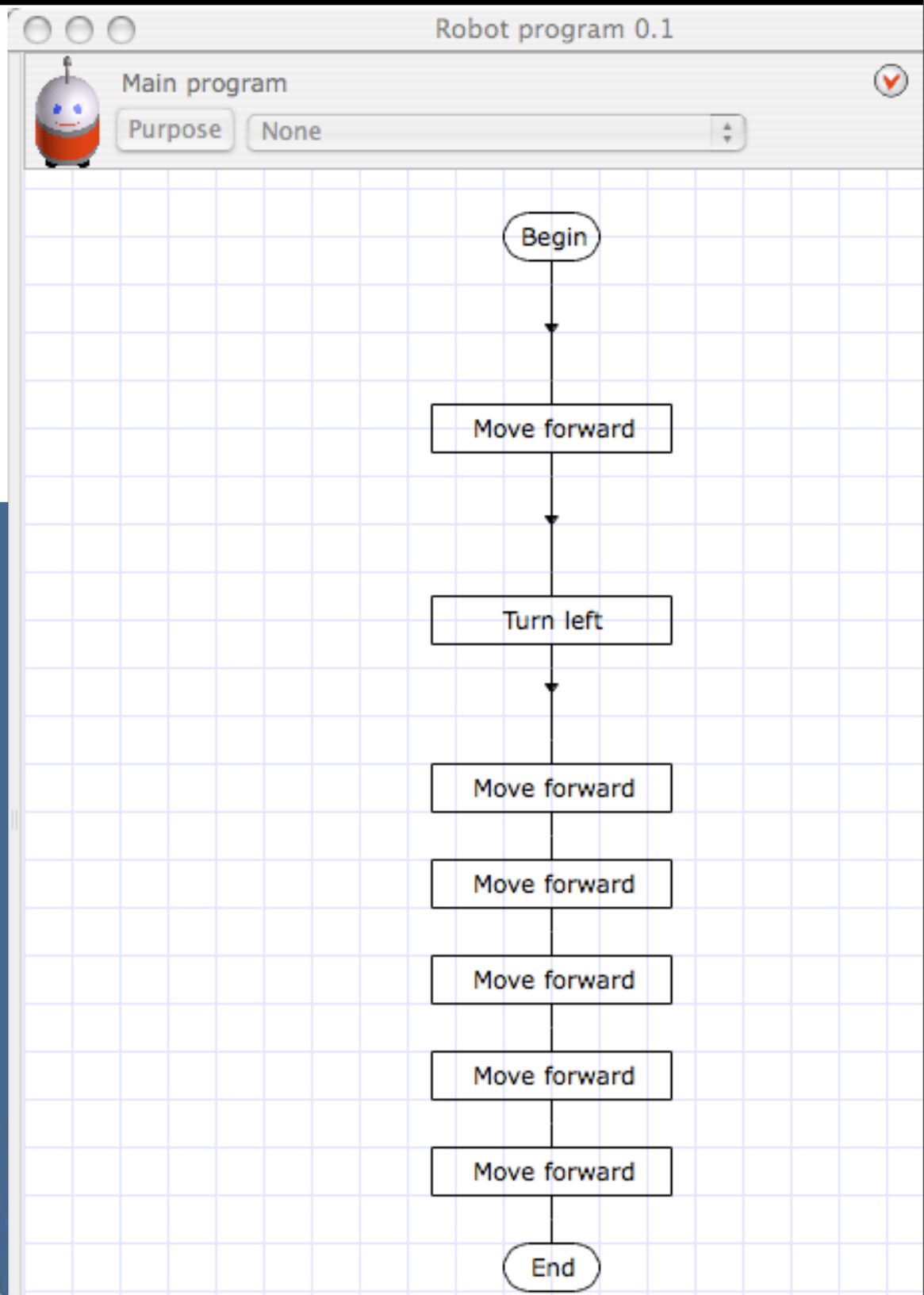
Visual programming languages



RobotProg

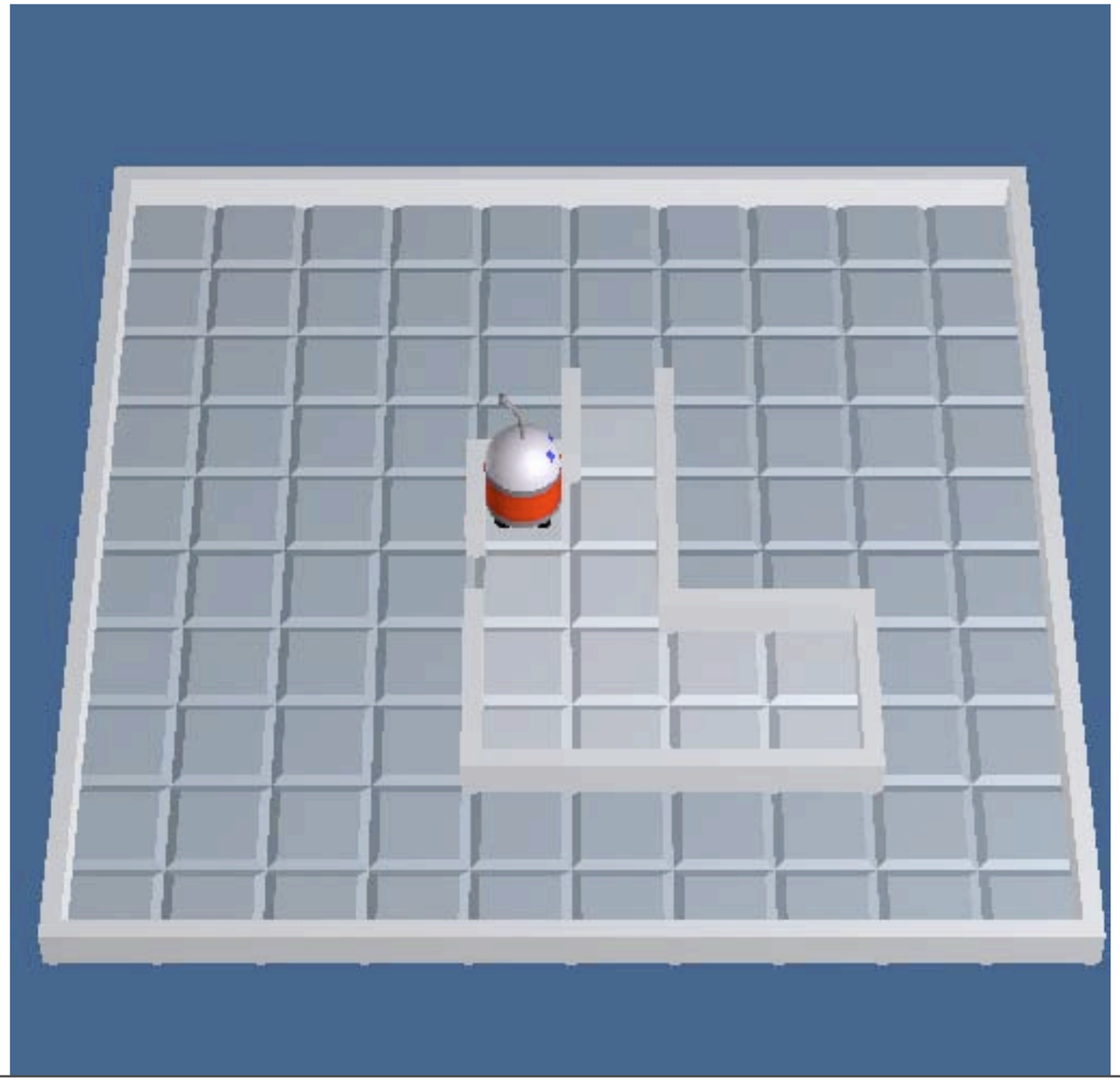
RobotProg: a simple program for one particular starting point and situation





RobotProg

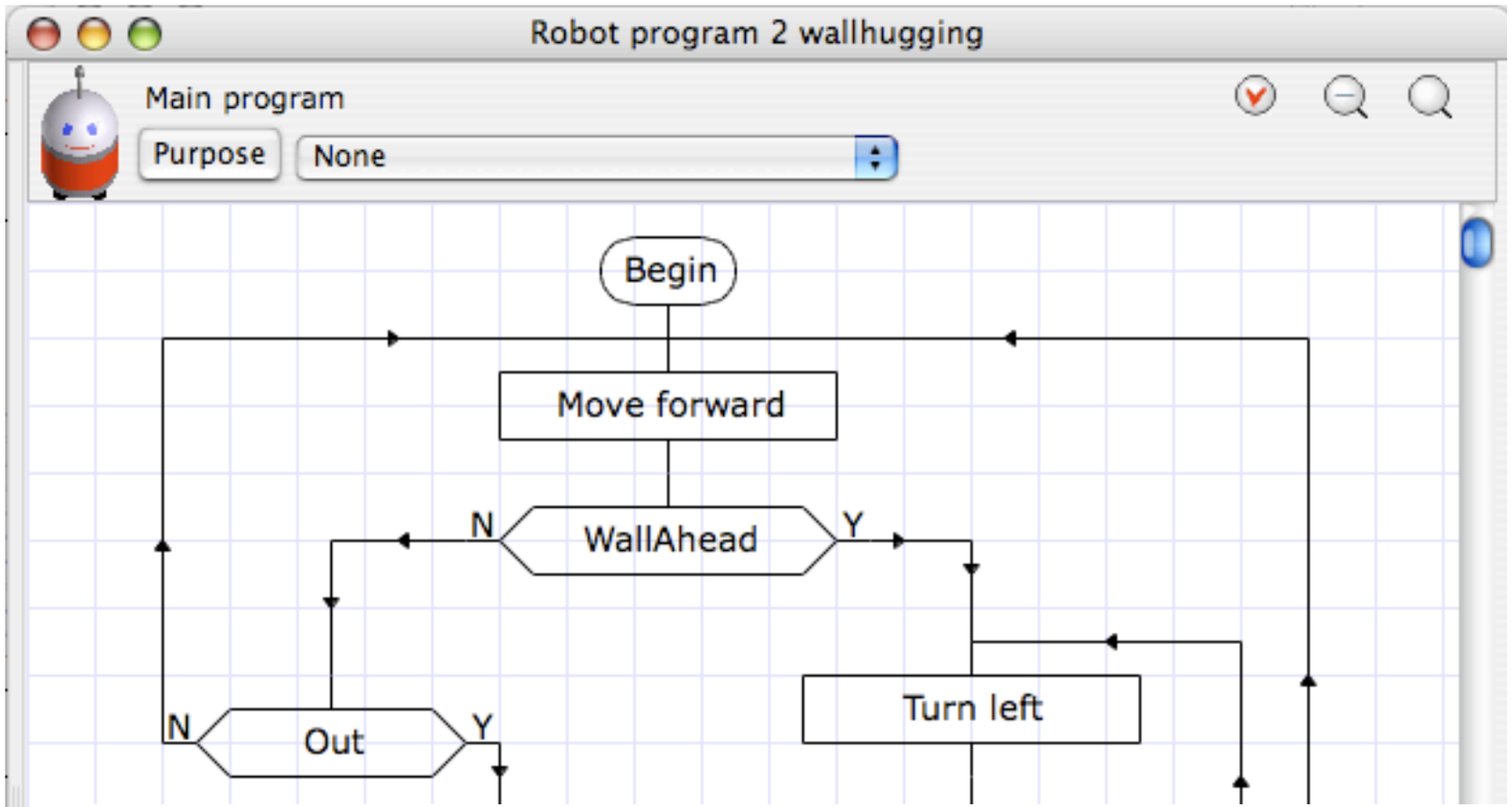
But what if the robot starts from another position? Can we make a program that works for every situation?



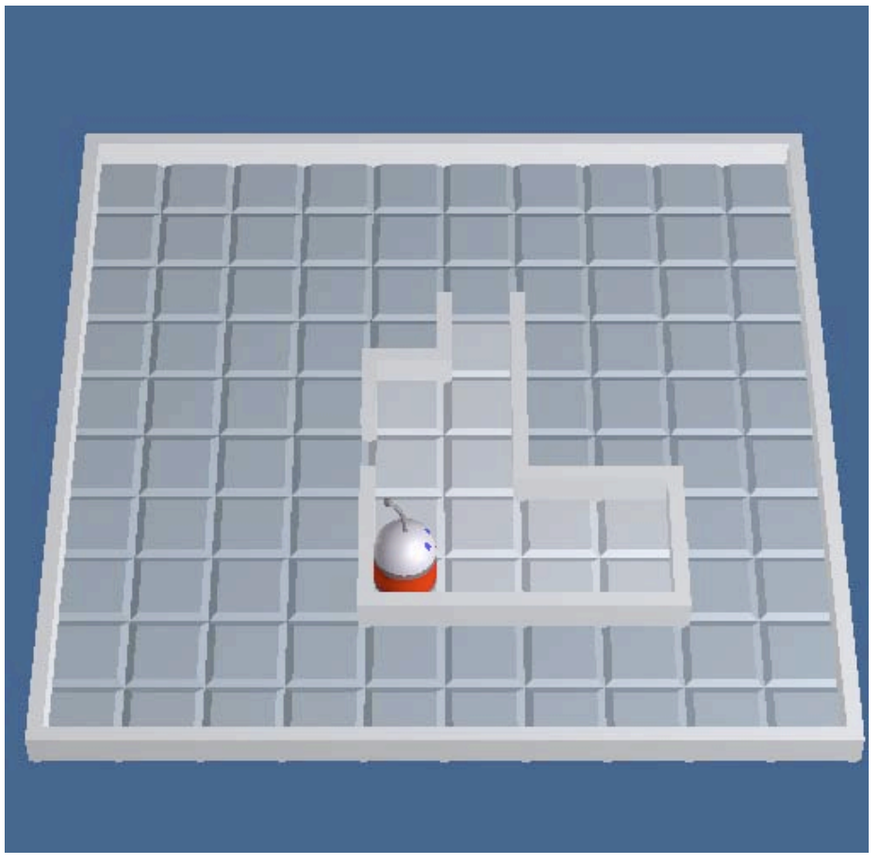
RobotProg

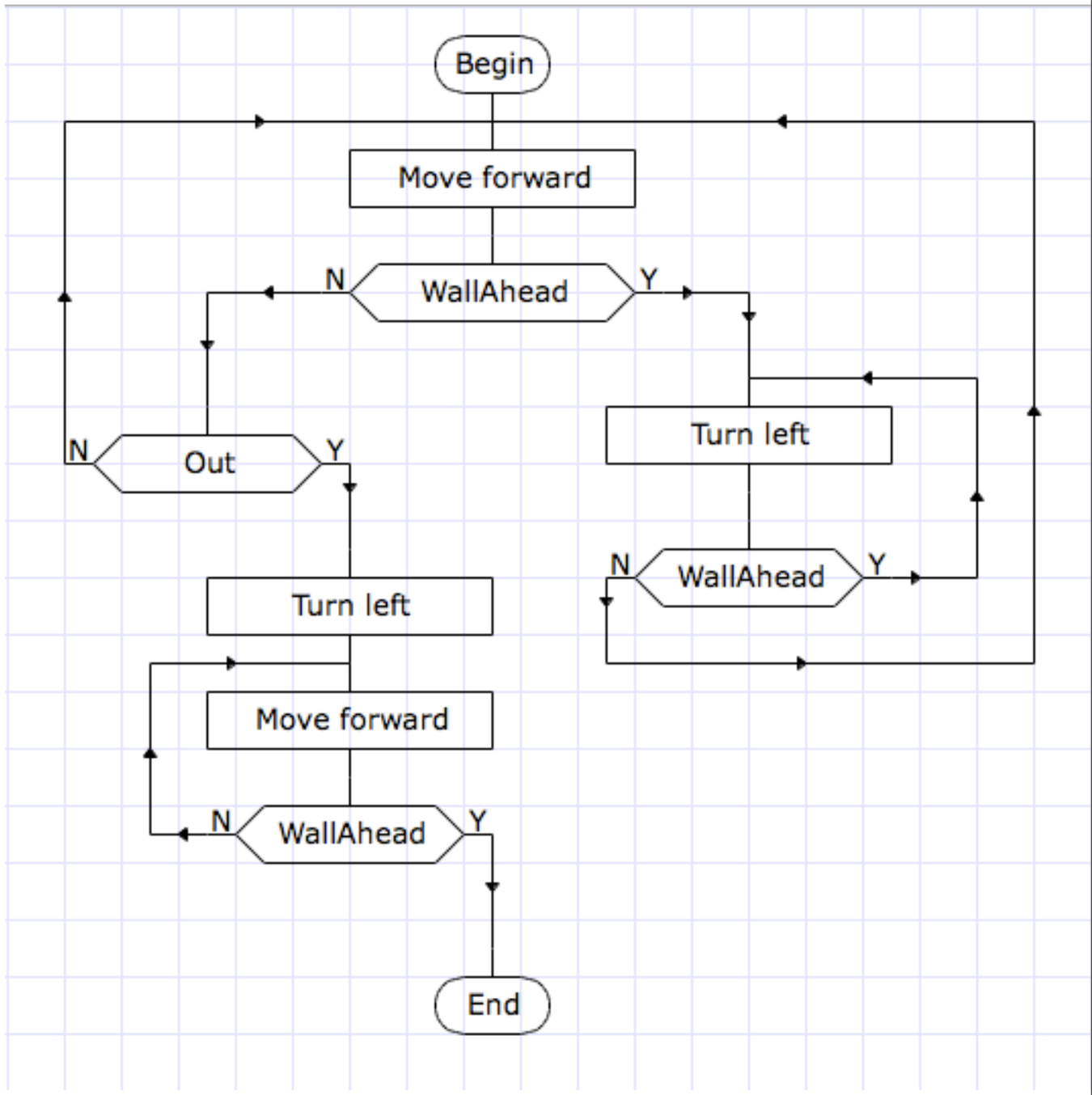
We need some conditional statements: is there a wall ahead? yes/no.

If yes, do this, if no, do something else



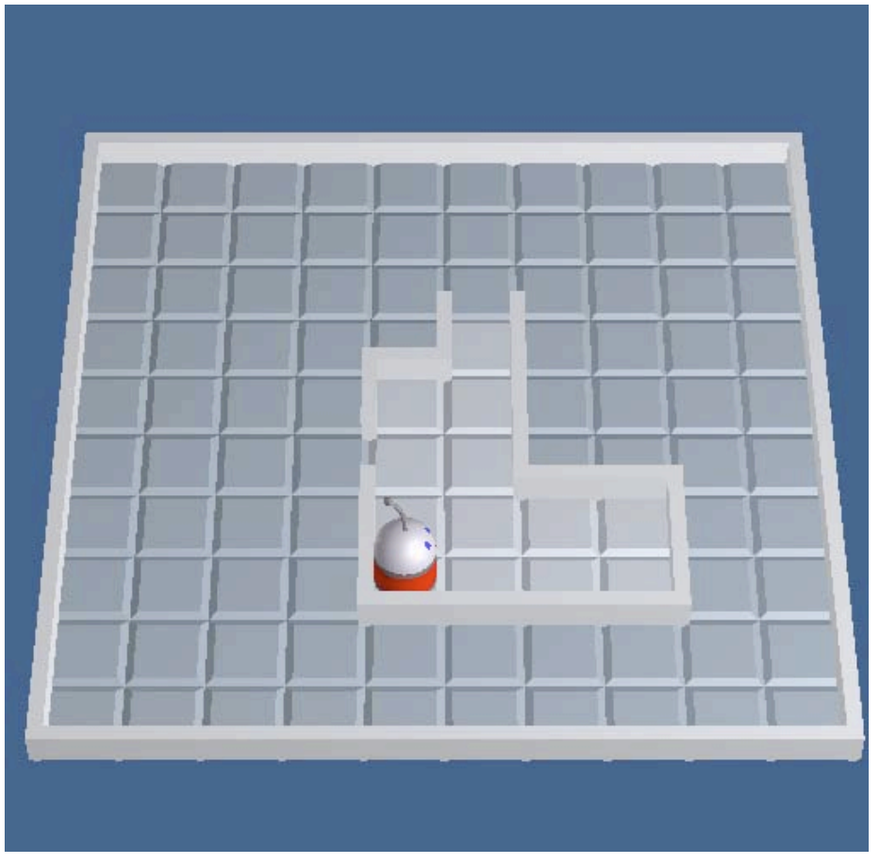
Exercise: PROGRAMME A ROBOT'S ESCAPE

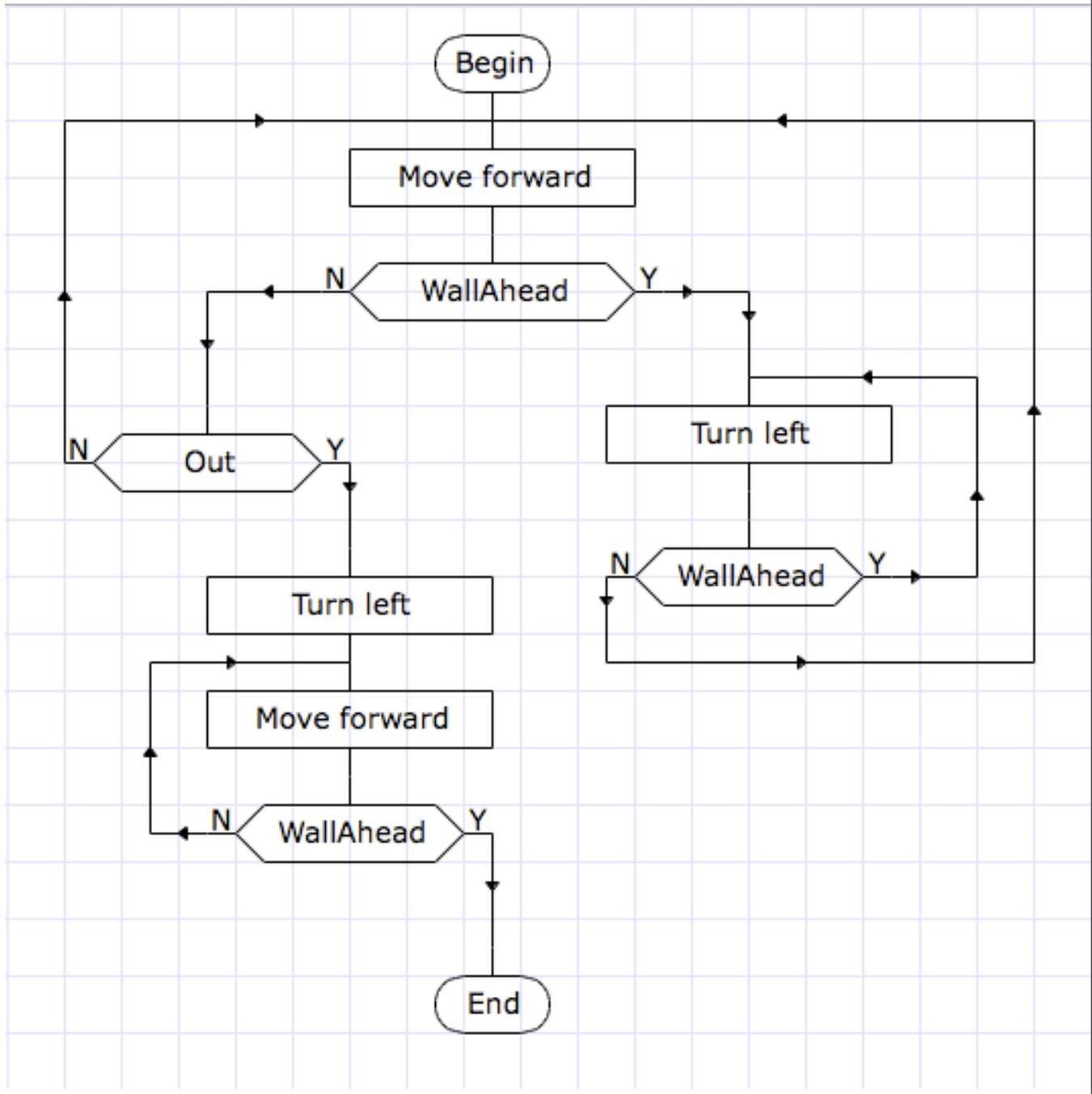




Does this program allow the robot to escape?

Exercise: PROGRAM A ROBOT'S ESCAPE





http://www.physicsbox.com/indexrobotprogen.html

ROBOTPROG