Index

A
AAAI 18
ABC song 68
abstraction 36
`acos` **183**, 326
Aesop 43
Aggressive, Vehicle#2 135-6
Aibo 4
algorithm 281, **292**, 302, 305
Al Khwarizmi 283
Alive, vehicle#1 131-5
Anananova 317
and 85, 86, **92**, 324
Animated GIF 220
`AntiqueWhite` 189
`append` 111, **125**, 325
Apple Strudel 280
Artificial Intelligence 4, 88, **245-271**
  movie 3, 245
Asimov's Laws 17
`asin` **183**, 326
`askQuestion` 78, 79, **91**, 137, 332
assignment 50, **66**, 323
`atan` **183**, 326
Avoiding obstacles 148-151

B
`backward` 24, **38**, 330
battery disposal 89
`beep` 12, **16**, 201-205, **211**, 329, 336
Behavior-based control 158
Blobs 236
blob filtering 236
Bluetooth 6, 8
Bluetooth logo 18, 40
blur image 229
Boolean 85
boundary conditions 296
Braitenberg, Valentino 130, 153
Braitenberg Vehicles 130-
Breazeal, Cynthia 18, 317
Brooks, Rodney 309-10, 317
Burglar Alarm 145

C
C 6
C++ 293
CamelCase 68
equal temperament 204
Ericsson 18
Euclid v
Error Checking 296-9
Euro 67
`exp` 139, 164, **182**, 326
Explorer 43
Explorer, Vehicle#3 138
expression 50
case sensitive 48
`ceil` 164, **182**, 326
Celsius 67
characters 52
Chazelle, Brian 307
Chess 250
Chicken Kabobs 276-7
Chinese Room 270
Ching-Chong-Cha 177
choice 257, **269**
`Circle` 192, **210**, 335
Clash, The 129
`close` 189, **209**, 334
Cockroach 153
`color_rgb` 194, **210**, 335
CommonLisp 293
comments 32
computable 304
Computational Linguistics 248
Computer Science 273, 275
conditions 84, 87
constant time algorithms 302
Corral Exiting 151
`cos` **183**, 326
Coward, Vehicle#2 135-6
`currentTime` 81-83, **91**, 332

D
Dar es Salaam 110, 112
data 302
Data Fountain 318
dead reckoning 73
decision making 176
Deep Blue 250
`def` 27, **39**, 118, 321
`degrees` **183**, 326
Delaware River 5
Dijkstra, Edsger W. 273, 275
Direct Control 159
`draw` 190, **211**, 336

E
`e` **183**, 326
edge detection 237
Elvis 85
emboss image 230
Energy Problem 55
enlarge image 227-8

F
Face Bank 312
`False` 63, 84, 86, **91**, 324
Farenheit 67
Firefox 44
floating point numbers 51
`floor` 164, **182**, 326
Flip Flap 312
Flops 304
Fluke Dongle 8, 9, 125
Flying Circus 29
Flynn, Anita M. 309-10
Follower 146
`for` 60, **66**, 83, 323
formal languages 14
`forward` 24, **38**, 330
fractals 213
Franke, Uli 313
Franklin Institute 117
`from` 34, 166, 322
function 27, 34

G
Gamepad controller 14, 114-16
`gamepad` 14, **16**, 108, 330
Game playing 251-267
Geier, Sven 187
`getBattery` 88, 89, **91**, 332
`getBlob` 237
`getBlue` **238**, 337
`getBright` 104-5, **122**, 332
`getGamepad` 115-16, **122**, 333
`getGamepadNow` 115-16, **122**, 333
`getCenter` 192, **211**, 336
`getGreen` **238**, 337
`getHeight` 218, **238**, 337
`getIR` 106-7, **122**, 333
`getLight` 103, **122**, 333
`getName` 13, **16**, 329
`getObstacle` 107-8, **123**, 333
`getP1` 191
`getP2` 192
`getPixel` 222, **238**, 337
`getPixels` 223, **238**, 337
`getRed` **238**, 337
`getRGB` 223, **238**, 337
`getStall` 87, **91**, 332
`getX` 190, **210**
`getY` 190, **210**
`getWidth` 218, **238**, 337
GIF 217
global name 196-7, 328
Google 3
Gore, Al 68
Gormson, Harald B. 18
GPS 314-15
Grade A eggs 281
`GraphWin` 188, **209**, 334
Gray Poupon 47, 113
grayscale images 102
Gregorian Calendar 291

H
Hallway Cruiser 145
Hektor robot 314
Hertz (Hz) 201
hi-fidelity 202
HiLo game 184
Hoare, C. A. R. 273
Hogg, David 153
Hugs & Kisses 251
Human-robot interaction 315-16

I
iCat robot 316
IDLE 10, 27, 29, 36, 62
Idle, Eric 29
`if`-statement 120, **123**, 142, **154**. 324, 326
image 216
`Image` 201, **210**, 336
image processing 226
image understanding 232
Imitation Game 246
`import` 166, 322
`in` 110, **124**, 325
Indecisive 141
`init` **16**, 329
`initialize` 11, 12, **16**, 329
`input` 56, **65**, 113, 322
integers 51
internet 5
interoceptors 72
invocation, function 28
iPhone 85
iRobot 2, 59

J
jalapeno 72
Jankenpon 177
Java 6
Joe, Gigolo 245
Joel, Billy 187
Jones, Crispin 311
Jones, Mick 129
JPEG 217
Julia Sets 213

K
Kasparov, Gary 250
Kismet robot 317
Kitaoka, Akiyoshi 215
Koch Snowflakes 213
Konane 250

L
Ladybug 129
Larson, Doug 273
`LavenderBlush` 189
Law, Jude 245
Leap Frog 313
leap year 291-5
Learning 267
LED 89
LEGO Mindstorms 3
`len` 110, **124**, 325
Lenhi, Jurg 313
Light following 146-8
`Line` 191, **210**, 335
linear time algorithms 302
List comprehensions 255
lists 60, 109-13, 325
Loan calculator 167-76
local name 196-7, 328
`localtime` **94**
`log` 165, **183**, 326
`log10` 165, **183**, 326
logarithmic time algorithms 302
logical operations 85
loop 60
loop index variable 60
Love, Vehicle#3 138
Lousanne 314

M
`main` 65, 322
`makeColor` 222, 224, **239**, 338
`makePicture` 219, 221-, **239**, 338
Mandelbrot Sets 213
Mars Rover 1, 2, 4
Martin, Fred 153
`math` library 139-40, 164-6, 326
Maze solver 151
meaning of life 280
Measuring Device 145-6
Media Player 43
Megapixel 217
Mignot, Charles 318
Minimax algorithm 262
Minsvoort, Koert van 318
MIT Media Lab 153, 317
mixed case 68
module 31, 33, 34, **299**
Monty Python 6, 29
Morris, Errol 310
Moscow 110, 112
`motors` 23, **38**, 330
`move` (robot) 25, **38**, 330
`move` (graphics object) 198, **211**, 336
musical scale 204

Myers, Mike 157
Myro 6, 8, 13, 329
myro Song Format 206

N
Names 48, 49, **65**, 163, 195-8, 322
NASA JPL 1, 3, 310
Nash, Johnny 97
Natural Language Understanding 248
natural languages 14, 247
Naughts & Crosses 251
negative image 230
New York 85, 110, 112
Nexi robot 317
Nike viii
`not` 85, 86, **92**, 324
notes 204
numbers 50

O
octave 204
Ok Corral 151
OLPC Project 22, 273-4
Opportunity robot 1, 2, 17, 310
`or` 85, 86, **92**, 324
Orb Swarms 309, 319
Osment, Haley Joel 71, 245-6
`Oval` **210**, 335

P
Papal Bull 290-1
Paper Scissors Rock 177-82, 264-7
parameters 30, 195-7
Paranoid 141
Paris 85
Paro robot 23
Pathfinder 17
PB&J 265
Pennsylvania 5
Philadelphia 117
`pi` **183**, 326
`pickAColor` 222, **239**, 338
`pickAFile` **239**, 338
pixels 102, 216-7
`playSong` 208, **211**, 337
Pleo 4, 20-22
PNG 217
`Point` 190, **210**, 335
Polar coordinates 241
Polka 206
`Polygon` **210**, 335
polynomial time algorithms 303
Pope Gregory XIII 291
`pow` 165, **183**, 326
Powers, Austin 157
`print` 46, **65**, 322
Programming 6, 274
Programming Language 6, 44, 279, **292**
Proprioception 72
proximity sensor 73
Python 6, 44, 47
Python Shell 10, 11

Q
quadratic algorithms 303

R
`radians` **183**, 326
`random` 77, **92**, 93, 178, 324
`randomNumber` **91**, 93, 332
`randint` 77, **92**, 324
`range` 60, **66**, 112, **124-5**, 325
Reactive behaviors 143-152
Reactive control 159
`read` 117, **124**, 325
`readSong` 208, **211**, 337
`Rectangle` **210**, 335
Refrigerator Detective 145
`repaint` 222, **239**, 338
repetition 60, **66,** 176
Resnick, Mitchel 153
`return` 119, **124**, 324
return values 163-4
`reverse` 111, **125**, 325
RGB 102, 193, 216, 223
RoboCup 315
Robot, definition 3, 4
Robot Hall of Fame 18
Robot Vision 232
Rochambeau 177
Rock Paper Scissors 177-82, 264-7
Roomba 2, 3, 22, 59
`rotate` 25, **38**, 330
Rotating Snakes 214
Royal Mail 5
`Run Module` 46

runic alphabet 18

S
Saab 167
savePicture 100, **123**, 218-, **239**, 334, 338
scale 204
Scassellati, Brian 316
Science Magazine 153
scope 195
Scribbler 6, 22
Scribbler 208
Scribbler drawings 313-14
Scribbler sensors 99
Sear, Cole 71, 72
Searle, John 270
sequential execution 176
senses 99, 108, **123**, 334
Sensor Fusion 159
setBackground 189, **209**, 335
setBlue **239**, 338
setColor 223, **239**, 338
setFill 193, **211**, 336
setGreen **239**, 338
setName 13, **16**, 330
setOutline 193, **211**, 336
setPixel 225
setRed **239**, 338
setRGB 223
setWidth 193, **211**, 336
sharpen image 229
shrink image 227-8
shrinking factor 228-9
show 100, **123,** 216, 218, **240**, 334, 338
Shyamalan, M. Night 71, 72
Sierpinski Triangles 213
Simpson, Homer 42
sin **183**, 326
Sixth Sense movie 71, 72
Snicker's moment 72
Sojourner 17, 310
solvable 304
song2text **212**, 337
SONY 4
sort 111, **125**, 325
Social Robotics 316
Soviet Union 283
Space Complexity 301-5
speak 47, **64**, 125, 331
Spitler, Phil 309
split 113, **124**, 324
Spirit robot 1, 2, 17, 310
Spielberg, Steven 3, 245
sqrt 164, **183**, 326
Squyres, Steve 1
Start Python 9, **16**, 321
strings 50, 52
stop 25, **38**, 331
Subsumption Architecture 160
Sullivan, Jon 71
syntax error 35

T
Tag reading pen 313
takePicture 100-2, **123,** 216-, **240**, 334, 339
Takada 312
tan **183**, 326
Tengu 311-12
Testing 296-9
text 200, **210**, 336
Terra flops 304
Thingamapoops 313
Tic Tac Toe 250-264
time **94**
Space Complexity 301-5
timeRemaining 62, **64**, 332
Timid 141
TOMY Company 312
Toyota Prius 110
Traffic Lights 157
translate 25, **38**, 331
True 63, 84, 86, **91**, 324
Tumbleweed robot 2
Turing, Alan 246, 270
Turing Test 246
turnLeft 24, **38-39**, 331
turnRight 24, **39**, 331

U
UGOBE Inc. 21
uncomputable 304
undraw **211**, 336
Unicode 85
Unimation 4
unsolvable 304
urllib 117

urlopen 117, **124**, 325
USDA 281-2

V
Values 50, **65**
variable 50
Victoria Crater, Mars 3

W
wait 29, **39**, 322, 331
Wales 58
Wall Detector 145
Washington DC 301
Washington state 301
while 62, **66**, 83, 87, 323
WhiteSmoke 189
Wikipedia 18, 29
Wong, Yingshun 157
world population 53, 64, 89
world wide web 5

X
XO Laptop 273-4

Y
Y2K Problem 307

Z
Zamboni 58, 92
Zefrank 313-14