



Index

A

- abstract class 98
 - polymorphic event specification 228
- action 6, 109, 111
 - attribute 111
 - link 114, 116, 120
 - link object 116, 120
 - object 111
 - reclassification 118
 - signal 170
- action language 109, 297
 - constraints in 128
 - data types 65
 - procedure 169
 - test state 260
- activation 184, 192
- activity 43, 51
 - initiation by external signal 45
- activity diagram 51, 254, 265
 - input sequencing 248
- actor 16, 42
 - swimlanes 51
- actual parameter 173
- agile 73, 268
- Alexander, Christopher 299, 301
- archetype 294, 297
 - language 295
- Arthaud, Rodolphe 110
- aspect 38, 39
 - oriented 39, 275, 285
- assigner 219, 220, 225, 244
- association 6, 81
 - checking 87
 - competition 217
 - distributing control in 246
 - dynamically simple 214
 - reflexive 103
- association class 77, 93, 95, 214
 - dynamics of 215
 - lifecycle formalization 213
- association loop 138
 - constraint 93
 - equal set constraint 141
 - redundant 140
 - subset constraint 143
 - unconstrained 139
- assumption-requirement pair 29, 35, 38, 302
- asynchronous creation 175
- attribute 6, 64
 - accumulating values 200
 - action 111
 - checking 73



- dependent 192, 194
- derived 132, 134, 136
- identifying 127, 129, 134, 135, 137
- referential 64, 72, 134, 135, 138

B

- Balcer, Marc J. 121, 262
- Beck, Kent 13
- Blackburn, Mark xxxiv, 265
- Blair, Alistair xxxiv
- Block, Robert 1
- Bock, Conrad xxxiv, 73, 121
- bridge 15, 35
 - assumption-requirement pair 38
 - description 37
 - explicit 280
 - implicit 285
 - join 39, 287
 - operation 275, 283
 - to model compiler 289
- bridge operation 275, 283, 284

C

- can't happen 160
 - or shouldn't 162
- Carpenter, John 197
- change event 173
- class 6, 18, 58, 63, 165
 - abstract 98
 - association 93
 - checking 73
- class diagram 6, 62, 68, 82
 - reworking 206
- class-based state machine 213, 219
- Cockburn, Alistair 43, 48
- collaboration diagram 178
- combined referential attribute 144
- competition 217
- completion event 174
- compound generalization 103
- compound identifier 138
- conflict
 - data access 192, 194
- Constantine, Larry 48
- constraint 12, 28, 125, 146

- association loop 93
- equal set 141
- referential 134
- subset 143
- unique instance 125
- constraint idiom 128
- control
 - associations 246
 - hierarchical delegation 244
 - networked delegation 244
 - partitioning 236
 - pivot point 241
 - push and pull 239
- core data type 65

D

- data access
 - conflict 192, 194
 - rules about 192
 - set 192
- data type 65
 - core 65
 - domain-specific 65
- delayed signal 194
- dependent attribute 192, 194
- derived attribute 132, 134, 136
 - definition of 133
- derived identifier 137
- diagram
 - activity 51
 - class 6, 62, 68
 - collaboration 178
 - interaction 170, 178
 - sequence 182
 - statechart 6, 60, 149
 - vs. model 22, 155
- discriminator 82, 103
- domain 17, 30, 33, 34, 39
 - as external entity 280
 - dividing 269
 - identification 14
 - kinds of 277
 - linking 275
 - realized 280
- domain-specific data type 65
- dynamic verification 26, 253

E

encapsulation 193
Epperson, Dirk xxxiv, 121
equal set constraint 141
event 6, 149, 152, 153, 170, 173
 change 173
 completion 174
 parameter 170
 polymorphic 227
 specification vs. occurrence 153
 stereotype 153
 time 173, 194
event ignored 160
event parameter 170, 173
event recognizer 46
exact time 195
execution trace 180
external entity 42, 174, 180, 190
 as domain 280
 bridge operations 284
 communication between 170
 conventions for 174
 signals from 281
 signals to 174
 stereotype 180, 280
external signal 45
 bridge operation 284
 in real time 46
 test case initiation 260, 261

F

final pseudostate 163
Finnie, Scott xxxiv
Fontana, Peter 119
formal parameter 173
Foster, Alan Dean 197
Fowler, Martin xxxiv, 50
Futagami, Takao xxxiv

G

generalization 81, 95, 118
 actions for 117
 compound 103
 multiple 100
 repeated 99

generalization hierarchy
 dynamics in 225
 polymorphic event 227
 polymorphic signal 227

H

Harel, David 149
Hasling, Bill 262
hierarchical delegation 244

I

identifier 66, 126
 compound 138
 contrived 129
 derived 137
 for associations 82
 idiom 133
 multi-attribute 138
 tag 131
identifying attribute 127, 129, 134, 135,
 137
 tag 128
idiom
 identifier 133
information hiding 193
inheritance 98, 275, 285
initial pseudostate 162
initial state 177, 254, 257, 260
initiating signal 257
input conditioning 247
instance-based state machine 219
intention
 modeling of 197
interaction diagram 170, 178
Ishikawa, Sara 299

J

Jacobson, Ivar 42
join point 38, 286

L

Lampert, Leslie 188
leaf subclass 97, 117, 118

LeBlanc, Phillippe 110

link

accumulating 201

action 114

link action 116, 120, 122

link object 94

action 116

link object action 116, 120

Lockwood, Lucy 48

M

mechanism 293

Melliard-Smith, P. M. 188

Mellor, Stephen J. 110, 119

metamodel 294

model compiler 9, 13, 26, 39, 190, 194,

195, 291, 292

action language 119

action semantics 110

bridging to 289

constraints 132

encapsulation 193

exact time 195

signals 154, 190

transaction 193

model management 269

model-driven architecture xxviii, 11,

276

multiple generalization 100

N

networked delegation 244

normalization

rules about 77

O

O'Bannon, Dan 197

object 98

action 111

Object Constraint Language 128

object creation 112, 162, 175, 184

asynchronous 175

synchronous 177

object deletion 112, 162, 175, 184

asynchronous 175

synchronous 177

object lifeline 182, 188

object reference 111

object reference set 112

Okamura, Yukiotoshi xxxiv

Ostrand, Tom 262

P

Page-Jones, Meilir 246

Palahniuk, Chuck 236

parameter

actual 173

event 170, 173

formal 173

signal 173, 254, 257

parameters 254

partitioning control 236

polymorphic event 227

polymorphic signal 227

rules about 228

precondition 53

procedure 6, 22, 154

action language 169

rules about 191

profile 7

progression

modeling of 200

pseudostate

final 163

initial 162

push and pull control 239

R

realized domain 280

stereotype 280

reclassification 118, 230

action 118

subclass state machine 233

referential attribute 64, 72, 134, 135,

138

combined 144

tag 134

referential constraint 134

reflexive association 103

- relationship number 82
- repeated generalization 99
- requirement 17, 33, 42
 - assumption pair 29, 35, 38, 302
 - defect 265
 - domain-level 34
 - for event recognizer 46
 - gathering 14
 - missing in state transition tables 160
 - on model compiler 193
- Rochford, Gregory 119
- rules 73
 - data access 192
 - dynamic semantics 8
 - for model compilation 78
 - in a class 58
 - in knowledge formalization 78
 - in the domain 30
 - normalization 77
 - polymorphic signals 228
 - procedures 191
 - signals 189
- Rumbaugh, James 98
- run-to-completion 190, 191
- S**
- scenario 54, 56, 180, 254
- Seidewitz, Edwin XXXIV
- selection expression 112
- self
 - signal to 173
- sequence diagram 182
- Shlaer, Sally XXXIII
- Shlaer-Mellor XXX, XXXIII, 4, 58, 119, 129, 138, 144, 148
- signal 164, 170, 173, 188
 - action 170
 - delayed 194
 - distinct 204
 - external 45, 46, 260, 261, 284
 - external entity 281
 - initiating 254, 257
 - parameter 173
 - polymorphic 227
 - rules about 189
 - saving in data 207
 - self 173
 - simultaneous 202
 - to external entity 174
- signal action 175
- signal event 173
- signal parameter 250, 257
 - values in test case 254
- signal specification 222
- Silverstein, Murray 299
- software platform 110, 298
- Starr, Leon XXXIV, 71, 85, 225
- Starrett, Cortland D. 119
- state 6, 151, 215
 - initial 177, 257, 260
- state machine 19, 149, 166, 173, 175
 - access to state 220
 - class-based 213, 219
 - collaboration of 178
 - delegation of control 235
 - for association classes 213
 - instance-based 219
 - subclass 225
 - superclass 225, 233
- state machine instance 162, 164, 166, 170, 177, 207, 254
 - and activation 184
 - communication between 170
 - creation 162
 - polymorphic signal 228
 - synchronizing 188
 - synchronous creation of 177
- state transition table 155, 161
- statechart diagram 6, 60, 149
 - construction techniques 197
 - vs. state transition table 155
- static verification 25, 253
- stereotype 37
 - event 153
 - external entity 180, 280
 - imported 270
 - realized 280
 - subsystem 270
- subclass 97
 - leaf 97, 117, 118
- subclass state machine 225
- reclassification 233

- subset constraint 143
- subsystem 16, 18, 269
 - verification of 27
- superclass 97
- superclass state machine 225, 233
- synchronous creation 177
- system model 14, 56
 - iterating 17
- system state 254
- system test 263

T

- tag
 - complete 99
 - disjoint 99
 - identifier 131
 - identifying attribute 128
 - predefined, in constraint idiom 128
 - referential attribute 134
- Tanner, William G. xxxiv
- test 26, 41
 - execution 260
 - system 263
 - unit 254, 260
- test case 27, 185, 253
 - finding 267
 - for use cases 51
 - initiation of 261
 - scenarios 54, 254
- test vector 257, 267
 - checking automatically 262
- time 188
 - data type date 66
 - exact 195
 - global 8
 - modeling as actor 43
 - scope of model 91
- time event 173, 194
- Tockey, Steve 110
- transition 6, 153

U

- unique instance constraint 125
- unit test 254, 260

- use case 16, 41, 43
 - unit test for 254, 260
- use case postcondition 54
- use case precondition 53

V

- verification 25
 - dynamic 26, 253
 - iterating 27
 - static 25, 253