A
abstraction, 7, 51
AcceptPaymentEvent archetype, 345, 375
AcceptRefundEvent archetype, 345, 363
accessibility of UML models, 89
Action archetype, 198–200
activity diagrams, 93, 437–438
activity rule, 440
ActivityRule archetype, 457–458
Address archetype, 132
   AddressProperties archetype, 132
   EmailAddress archetype, 136
   GeographicAddress archetype, 132–134
   TelecomAddress archetype, 134–136
   WebPageAddress archetype, 137
AddressProperties archetype, 132
Agile Modeling, source code focus of, 55
Alexander, Christopher, 8
Amazon.com, 26, 213, 371
AmendEvent archetype, 328–330, 360, 377
AmendOrderLineEvent archetype, 331
AmendPartySummaryEvent archetype, 334–336
AmendTermsAndConditionsEvent archetype, 336–337
American Airlines AAdvantage program, 417, 418, 419
analysis class, semantics of, 7
analysis patterns, 8, 9–10
ArbitraryPrice archetype, 249
Archetype Cartridge Project, 165–172
«archetype pattern library» stereotype, 12
archetype pattern(s)
   and analysis patterns, 9–10
   ArcStyler and, 68–70, 70–75
   automation, 57–58, 68–70
   characteristics of, 6
   configuration, 58–61, 63–68
   example applications of, 36–42
   identifying, 25–28
   instantiating, 19–20, 29–30, 32–36
   and MDA, 56–57
   and messaging (ebXML), 41–42
   model management for, 28–29
   in models, 29–31
   Money example, 61–62, 101, 104–105
   package notation, 12
   pleomorphs, 22–25
   UML profile for, 10–14
   using for quality, 37–38
   variation, 17–18, 20–22
   and XP, 38–40
   See also individual archetype patterns
   «archetype pattern» stereotype, 12
archetype(s)
  business, 5–7
  characteristics of, 6
  definition, 4, 6, 6–7
  Jungian, 4, 22
  UML profile for, 11–12
  variation and optionality, 18–20
  «archetype» stereotype, 11–12, 20
Architectural IDE, 68
ArcStyler modeling tool
  architecture of, 69
  cartridge, 70, 71–72
  enabling with archetype patterns, 70–73
  entering archetype pattern into, 73–75
  generating source code with, 77–80
  pattern automation with, 68–70
  pattern configuration GUI, 75–77
  use of to apply PCR, 59
arithmetic operations, 400–403, 421
Arsanjani, Ali, 433
artificial intelligence, 445
Asheron’s Call, 412
AssignedResponsibility archetype, 181
assign permissions process, 131
asymmetrical relationships, 161–164
AsymmetricPartyRelationship
  pleomorph, 158, 159, 162, 163
  «attribute feature» stereotype, 65
  audit trail, 323, 332, 333, 334, 337, 459
  authenticate party process, 131
  automation, archetype pattern, 57–58, 68–70
  See also ArcStyler modeling tool
availability, as key function of inventory management, 282

B
  barter, 412
  Batch archetype, 214–218
BCD. See business context documents (BCDs)
been, 412
best-before date, 217
binary relationships, 164–165
BIPM. See Bureau International des Poids et Mesures (BIPM)
black economy, 428
BodyMetrics archetype, 141
BodyXML, 141
BOM. See business object model (BOM)
book inventory examples, 286–293
Boole, George, 442
Bureau International des Poids et Mesures (BIPM), 392, 395
Bureau of Engraving and Printing, 428
business archetype patterns
  definition, 6
  and XP metaphors, 40
  See also archetype pattern(s)
business archetypes
  vs. archetypes, 7
  «archetype» stereotype, 11–12
  definition, 5
  identifying, 25–28
  UML profile for, 10–11
business context documents (BCDs)
  business nomenclature in, 102
  conventions, 103–105
  creating, 100–102
  diagrams and, 101
  glossary for, 102
  and packages, 103
  structuring, 98–100
  uses of, 98
business nomenclature, 102
business object model (BOM), 69
business process, 437–440
business rules, 435–436
  and business processes, 437–440
  business system rules, 435, 436–437
C
CancelEvent archetype, 327, 351, 353, 368
Capabilities archetype, 182
CapacityManager archetype, 280, 281, 282
capacity planning and management, 279–281
Card Validation Code (CVC), 430
Card Verification Value (CVV), 430
Cash archetype, 427–428
CatalogEntry archetype, 224–225
catalogs. See ProductCatalog archetype
ChargeLine archetype, 318–319
See also TaxOnLine archetype
Check archetype, 428–429
CIM. See computationally independent model (CIM)
class diagrams, 94–95, 101
«class feature» stereotype, 65–66
CloseEvent archetype, 327, 351, 366
Coad, Peter, 6
code refactoring, 39
codeshare, 97
collaboration diagrams, 94
commercial off-the-shelf (COTS) packages, 35
common ontology, 41
Communication archetype, 193–194
CommunicationThread archetype, 197
CustomerServiceCase archetype, 195–198
hierarchical tree of, 198
CommunicationRouting archetype, 194
CommunicationThread archetype, 197
Compact Attribute modeling style, 15
Company archetype, 144–146
identifiers for, 147–148
organizational units, 148–149
CompanyGroup archetype, 144
company names, 146
comparison operations, 403, 422
CompatibleWith archetype, 244
ComplementedBy archetype, 244, 245
compound propositions, 443
comprehensibility
activity diagrams and, 93
class diagrams and, 94–95
collaboration diagrams and, 94
definition, 89
problem of, 95–96
sequence diagrams and, 94
statecharts and, 95
use case diagrams and, 93
use case specifications and, 92
computationally independent model (CIM), 56
corporate examples, use of, 108–109
ConditionalPropositionOfInclusion archetype, 234, 237
configuration. See pattern configuration configuration model, 64–65
Continental Airlines OnePass program, 225
convergent architectural style, 69, 77
convergent engineering, principle of, 6
conversion process for quantities, 408–409
core components in ebXML, 41–42
cost of goods in inventory, 267, 268
CreditCard archetype, 430
cross-selling, 244–245
Currency archetype, 392–393, 415
attributes, 415–417
definition, 414
See also CurrencyConverter archetype;
ExchangeRate archetype; Money archetype
CurrencyConverter archetype, 422, 423–425
CustomerAgent archetype, 197
Customer archetype, 190–191
CustomerCommunicationManager archetype, 192–193
customer relationship management (CRM)
Action archetype, 198–200
archetype pattern overview and roadmap, 188–189
business context, 187–188
Communication archetype, 193–194
Customer archetype, 190–191
CustomerCommunicationManager archetype, 192–193
CustomerServiceCase archetype, 195–198
definition, 187
goals of, 188
and Internet, 187
loyalty programs, 225, 418
and modeling party relationships, 157
Outcome archetype, 200
unified view of customer, 188
CustomerServiceCase archetype, 195–198
CustomerServiceCaseIdentifier archetype, 197
CustomerServiceRepresentative archetype, 197
CVC. See Card Validation Code (CVC)
CVV. See Card Verification Value (CVV)

D
Dali, Salvador, 204
database triggers, 441
Data Universal Numbering System (DUNS) number, 147
DateVariable archetype, 448–449
DebitCard archetype, 430
DeliveryReceiver archetype, 318, 341, 342
DerivedUnit archetype, 398–399
DerivedUnitTerm archetype, 398–399
design class, semantics of, 7
design patterns, 8
despatch advice, 383
DespatchEvent archetype, 339–341, 371
despatch items process, 370–371
DespatchLine archetype, 341
diagrams
activity, 93, 437–438
class, 94–95, 101
collaboration, 94
informal, 101
sequence, 94, 101
statecharts, 95
use case, 93, 101
Discount archetype, 337–339
DiscountEvent archetype, 337–339
DiscountType archetype, 339
discounts, 322, 337–339
DocBook schema, 111
document tag, 106
document type definitions (DTDs), 42
domain expert interviews, 26–27
domain name, as company identifier, 147
DUNS. See Data Universal Numbering System (DUNS) number
dynamic modeling, 37

E
EAN.UCC product identification standards system, 204, 211–212
ebXML
core components, 41–42
goal of, 41
using archetype patterns for, 36, 41–42
e-commerce, 384–385
electronic payments, 425
EmailAddress archetype, 136
empty set, 234
Ethnicity archetype, 140–141
Euro, 422, 423
European Article Number (EAN), 204, 211–212
event responsibilities, 309
ExchangeRate archetype, 422–423
ExchangeRateType archetype, 423
Extreme Programming (XP)
  books on, 39
  four key values of, 38
  metaphors, 39–40
  source code focus of, 55
  twelve practices of, 39
  using archetype patterns with, 36, 38–40

F
filtered package cloner, 71, 75
finder operations, 223–224
flooz, 412
Fowler, Martin, 8, 9

G
Gamma, Erich, 8
GeographicAddress archetype, 132–134
Global Trade Item Number (GTIN), 211–212, 213
glossary, in BCDs, 102
GNU Lesser General Public License (LGPL), 433
goods
  orders, 304
  serial numbers and batch numbers, 214–218
  vs. services, 254
  as subclasses, 218
  uniquely identifying, 210, 211–214
Google, as highly connected node, 158
GTIN. See Global Trade Item Number (GTIN)

H
handle security violation process, 131
Helm, Richard, 8
homomorphism, 35, 58
homonyms, 102
Hubert, Richard, 68

I
ICANN. See Internet Corporation for Assigned Names and Numbers
IDD. See International Direct Dialing (IDD) prefix
IdenticalProduct pleomorph, 24, 25, 206, 207, 260–262
identical things, 206
identifiable things, 206
identify party process, 129–131
identity card number, 140
ill-formed configurations, 58
IncompatibleWith archetype, 244
infix notation, 450–451, 452
informal diagrams, 101
instantiated patterns, 20
instantiating the pattern, 29–30
  mapping, 30, 35–36
  modeling patterns, 32–33
  translation, 30, 33–35
See also pattern instantiation
International Direct Dialing (IDD) prefix, 135
International ISBN Agency, 213
International Organization for Standardization (ISO)
  country codes, 133–134, 418–420
  currency codes, 413, 417
  gender values, 140
International Standard Book Number (ISBN), 204, 212–213, 288
International Standard Music Number (ISMN), 204, 214
International Standard Serial Number (ISSN), 213–214
International System of Units (SI), 392, 395
  base units, 395–397
  derived units, 398
International Telecommunication Union telecom address standards, 120, 134–135
Internet and CRM, 187
  currencies on, 412
  online shopping, 384–385
Internet Corporation for Assigned Names and Numbers (ICANN), 147
inventory, 210
  capacity planning and management, 279–281
  cost of, 267, 268
  definition, 267
  management of, 269
  purpose, 267–268
Inventory archetype
  book inventory examples, 286–293
  business context, 267–269
  definition, 271
  management services, 271, 272–273
  pattern overview and roadmap, 269, 270
  and product pleomorphs, 269–271
  reservation services, 271, 273–274
  train journey inventory example, 293–300
InventoryEntry archetype, 271
  See also ProductInventoryEntry archetype; ServiceInventoryEntry archetype
invoice, 381–382, 383
InvoiceEvent archetype, 345, 358, 382
ISMN. See International Standard Music Number (ISMN)
ISO. See International Organization for Standardization (ISO)
ISOCountryCode archetype, 133, 418–420
ISOCurrency archetype, 417
ISOGender archetype, 140
isomorphism, 35, 58
ISSN. See International Standard Serial Number (ISSN)
issue invoices process, 381–382
ITU-T Recommendations, 120
J
  jargon, 27, 92, 102
  Java, 51–52
  Johnson, Ralph, 8
  Jung, Carl Gustav, 4
K
  k-combination, 228
  key document, 106
  key section, 106
  k-selection, 229
L
  legacy systems, 26, 35, 437
LifecycleEvent archetype, 326–328
literate modeling, 99
  concrete examples in, 108–109
  definition, 87, 88
  future of, 109–111
  precision and correctness, 109
  readability, 107–108
  as solution to problems with visual modeling, 88–89, 98
  UML tags for, 105–107
  XML tags for, 110–111
  See also business context documents (BCDs)
literate programming, 88
literature
  as source of archetypes and patterns, 27
  on XP, 39
Locale archetype, 418–420
logic, formal
propositions, 442–444
and the Rule archetype pattern, 445
variables and predicates, 444–445
Lukasiewicz, Jan, 451

M
macro-correctness, 37
MakePaymentEvent archetype, 345, 358
MakePaymentOnAccount process, 348
MakePaymentOnReceiptOfGoods process, 347
MakePaymentOnReceiptOfInvoice process, 347
make payments process, 357–358
MakePaymentWithPurchaseOrder process, 346–347
MakeRefundEvent archetype, 345, 381
make refunds process, 380–381
manager responsibilities, 221, 222–223, 271–273, 308–309
ManHour archetype, 399–400
mapping
homomorphism, 35, 58
and instantiating a pattern, 30
procedure for, 35–36
maximum utility, principle of, 16
MDA. See Model Driven Architecture (MDA)
MeasuredProductInstance archetype, 254
MeasuredProductType archetype, 254
measurement, systems of, 392, 395–397
metaphor, 39–40
metric, 391
Metric archetype, 393–394
Currency archetype as type of, 392, 414–415
micro-correctness, 37
Microsoft Excel, 408
Model Driven Architecture (MDA)
abstraction, 51
archetype patterns and, 56–57
computationally independent model (CIM), 56
modeling tools, 20, 52, 54–55, 57, 60, 66, 68–70, 77
models, 50
model transformation, 53–55
overview, 50
platform-independent model (PIM), 53–54, 55–57
platforms, 51–53
platform-specific model (PSM), 53–54, 55–56
value proposition, 55–56
modeling
dynamic, 37
macro-correctness and, 37
visual, problems with, 87–88, 96–97
model management
for archetype patterns, 28–29
and ArcStyler, 79
model(s)
configuration, 64–65
correctness and dynamic modeling, 37
OMG definition of, 50
as source of archetypes and patterns, 28
using archetype patterns in, 29–31
model transformation, 53–55
See also platform-independent model (PIM); platform-specific model (PSM)
MonetaryDiscount archetype, 337
money, purpose of, 411–412
Money archetype, 392–393, 415
arithmetic operations with, 421
business context, 411–412
Money archetype, continued
   comparison operations with, 422
   definition, 413
   pattern overview and roadmap, 413, 414
   rounding operations with, 422
   standards, 412–413
   working with, 420–422
See also Cash archetype; Check archetype;
Currency archetype; PaymentCard archetype
multiplicity, modeling style and, 15

N
naming conventions, 60
n-ary relationships, 164–165
National Direct Dialing (NDD) prefix, 135
national IDs, 148
navigability, modeling style and, 15
networks, 158
Neuro-Linguistic Programming (NLP), 100
NI (National Insurance) number, 139–140
nominalization, 255
NonISOCurrency archetype, 417
«notRequires» stereotype, 12–14, 15, 18–20
OpenEvent archetype, 327, 349, 366
«operation feature» stereotype, 65–66
Operator archetype, 447
optionality, 18–20
Order archetype
   amending, 328–330
   attributes, 308
   business context, 303–304
   definition, 304
   documentation, 382–383
   lifecycle of, 327–328
   modeling business process for, 348–349
   pattern overview and roadmap, 304, 305
   responsibilities of, 308–309
   variations in process, 383–385
See also PurchaseOrder archetype;
SalesOrder archetype
order cancellation, 383
OpenEvent archetype, 322–325
OpenEvent package contents, 306
OrderIdentifier archetype, 304
OrderLine archetype, 312
   adding, 333
   attributes, 313–314
   changing, 332–333
   definition, 310
   deleting, 334
   function, 311
   responsibilities, 314–315
See also TaxOnLine archetype
OrderLineIdentifier archetype, 312
OrderManager archetype, 321–322
OrderPayment archetype, 343–344
order picking list, 383
order response, 382
OrderStatus archetype, 326
Organization archetype, 143–144
Organization for the Advancement of Structured Information Standards (OASIS), 41
OrganizationName archetype, 143–144
OrganizationUnit archetype, 143–144, 148–149
Outcome archetype, 200

P
PackageInstance archetype, 226–227
See also packages
packages, 225–226
combining ProductTypes, 227–230
PackageInstance archetype, 226–227
PackageType archetype, 220–221, 225, 226–227
rule-driven specification, 232–238
specification process, 230–232
PackageType archetype, 220–221, 226–227
example of, 238–242
See also packages
parameterized collaborations, 32–33
partnerships and sole proprietors, 149–150
Party archetype
business context, 119–120
compliance with standards, 120
and CRM archetype pattern, 188
definition, 122
essential information, 122–124
in Orders, 315–316
PartySummary archetype, 183–184
pattern overview and roadmap, 120–121
relationships between Parties, 157–158
types of, 124–125
PartySummaryRoleInOrder archetype, 315–317
PartyAuthentication archetype, 128–132
PartyIdentifier archetype, 125–127, 137, 147, 149
PartyManager archetype, 153–154
PartyRelationship archetype, 160–164
Archetype Cartridge Project example, 165–172
business context, 157–158
and CRM archetype pattern, 188
managing, 173–179
n-ary relationships, 164–165
modeling different types of, 172–173
pattern overview and roadmap, 158–159
symmetric and asymmetric pleomorphs, 161–164
using, 182–183
PartyRelationshipConstraint archetype, 175–179
PartyRelationshipType archetype, 172–173
PartyRole archetype, 160–164
Archetype Cartridge Project example, 165–172
Customer archetype as type of, 190–191
managing, 173–179
modeling different types of, 172–173
Responsibility archetype, 179–182
PartyRoleConstraint archetype, 175–179
PartyRoleIdentifier archetype, 160
PartyRoleType archetype, 172–173
PartySignature archetype, 128, 181, 197, 200, 215, 249, 323, 338
PartySummaryRoleInOrder archetype, 315–317
passport number, 139
passwords, 129, 131
pattern configuration, 22
archetype pattern automation and, 57–61
example of, 61–62
GUI, 70–71, 75–77
optionality and, 20
pattern configuration, continued
well- and ill-formed, 58
See also pattern configuration rule (PCR)
pattern configuration language (PCL), 63, 64
pattern configuration rule (PCR), 59, 60, 61–62, 63–64
creating, 67–68
in UML, 64–67
«pattern configuration rule» stereotype, 65–66
pattern feature, 63
«pattern feature» stereotype, 65–66
pattern instantiation, 30
homomorphism, 35, 58
isomorphism, 35, 58
procedure for, 32–36
See also instantiating the pattern
patterns
definition of, 8
elements of, 8
See also analysis patterns; archetype patterns;
instantiated patterns
Payment archetype, 425–427
PaymentCard archetype, 429–431
PaymentEvent archetype, 343–345
PaymentMethod archetype, 427
Cash archetype, 427–428
Check archetype, 428–429
PaymentCard archetype, 429–431
payment receipt, 383
payment strategies, 346–348
PCL. See pattern configuration language (PCL)
PCR. See pattern configuration rule (PCR)
PercentageDiscount archetype, 337
Person archetype, 137–140
PersonName archetype, 141–143
platform-independent model (PIM)
creating, 56–57
model transformation and, 53–54
PIM-to-PIM transformation, 293
platforms, 51–53
platform-specific model (PSM), 53–55
Platinum Scarab, 412
pleomorphism, 22–25
choosing pleomorph, 29
definition, 23
«pleomorph» stereotype, 14
postfix notation, 451, 452
precision and correctness, 109
predicates, 444–445
Preference archetype, 150–153
PreferenceOption archetype, 150–153
PreferenceType archetype, 150–153
prefix notation, 451
Price archetype, 245–248
package pricing, 252–254
price reductions, 249
rules-based pricing, 249–252, 290
See also discounts
PricingStrategy archetype, 252
primary key, 125
process amendments process
for PurchaseOrder, 358–360
for SalesOrder, 376–377
process cancellation process
for PurchaseOrder, 351–353
for SalesOrder, 366–368
process deliveries process, 354–356
process payment process, 373–375
process PurchaseOrder process, 353–354
process refunds process, 362–363
process rejected items process, 372–373
process returned items process, 377–379
process SalesOrder process, 368–370
producer/consumer business-to-business relationship, 163
Product archetype pattern
business context, 203
compliance with standards, 203–204
general pattern/generalized model, 24, 25, 206, 207–208
IdenticalProduct pleomorph, 24, 25, 206, 207, 260–262
identifiable things, 206
and Inventory archetype, 269–271
measured products, 254
overview and roadmap, 204
pleomorphs, 206–207
product features, 219–221
product specification, 218–221
unique and identical things, 204–206
UniqueProduct pleomorph, 24, 206, 207, 258–260
variation in, 204–207
ProductCatalog archetype, 207, 221–224
CatalogEntry archetype, 224–225
ProductFeatureInstance archetype, 219–221
ProductFeatureType archetype, 219–221
ProductIdentifier archetype, 210–211
creating your own, 211
GTIN data structure, 211–212
ISBN, ISSN, and ISMN, 212–214
ProductInstance archetype, 207, 208–210, 214, 218, 220, 248, 249
Batch archetype, 215–218
and Inventory, 273, 277, 282
and OrderLine, 312, 313
PackageInstance archetype as type of, 226
reserving, 283, 286, 287
SerialNumber archetype, 214–215, 217
ServiceInstance archetype as type of, 256
ProductInventoryEntry archetype, 274
definition, 275
model, 276
ProductRelationship archetype,
242–244
ProductSet archetype, 233, 235–236
ProductType archetype, 208–210
combining, 227–230
number of instances of, 218
and PackageType, 225–226
ProductIdentifier, 210–214
ServiceType archetype as type of, 256
up-selling and cross-selling, 244–245
programming languages, abstraction in, 51
proof-of-concept prototype, 72–73
Proposition archetype, 447
propoition of multiple inclusion, 237
propositions, 442–444
PropositionOfInclusion archetype, 232, 233, 235–237
PSM. See platform-specific model (PSM)
purchase order, 303, 382
PurchaseOrder archetype, 275, 307, 310, 311
amendments, 358–360
business process, 349–351
cancellations, 351–353
deliveries, 354–356
payments, 357–358
payment strategies with, 346–348
processing, 353–354
refunds, 362–363
return items, 360–362
Python
source code for implementation of
Quantity pattern, 392
source code for implementation of Rule pattern, 433
Q
quality, 36, 37–38
quantifiers, 445
quantity, 391
Quantity archetype
arithmetic operations, 400–403
business context, 391–392
comparison operations, 403
compliance with standards, 392
definition, 400
Money archetype as type of, 392, 420–422
pattern overview and roadmap, 392, 393
rounding operations, 403–408
types of operations, 400

R
radio frequency identification (RFID), 212
raising an order, 304
random network, 158
Rational Rose
archetype patterns in, 57
ArcStyler as extension of, 68
creating PIM in, 69, 73–74
Rational Unified Process (RUP), 38
readability, 107–108
receipt advice, 383
ReceiptEvent archetype, 341–343, 356
receipting, 341
ReceiptLine archetype, 342–343, 356
Reference Model for Open Distributed Computing (RM-ODP), 51
refunds, 343, 380–381
RegisteredIdentifier archetype, 127–128, 137–140, 147–148
registered name and office address, 148
RejectedItem archetype, 341, 342–343, 356, 373
«relationship feature» stereotype, 65
relationship marketing, 187
See also customer relationship management (CRM)
relationships
and roles, 160–164
symmetrical and asymmetrical, 161–162
refining, 15
ReplaceBy archetype, 243
reporting structure, model of, 169
«requires» stereotype, 66
ReservationAgent actor, 271, 272, 273
Reservation archetype, 283, 284
ReservationIdentifier archetype, 283, 284
ReservationRequest archetype, 283, 284–286
reservations and inventory management, 282–286
ReservationStatus archetype, 283, 284
Responsibility archetype, 179–182
RestockPolicy archetype, 275–277, 290
retail vs. B2B sales, 384
ReturnedItem archetype, 328, 331, 362, 379
return items process, 360–362
Reverse Polish Notation (RPN), 450–452
RFID. See radio frequency identification (RFID)
RM-ODP. See Reference Model for Open Distributed Computing (RM-ODP)
rounding operations, 403–408, 422
RoundingPolicy archetype, 404–405
RoundingStrategy archetype, 405–407
RPN. See Reverse Polish Notation (RPN)
Rule archetype, 449–454
ActivityRule archetype, 457–458
business context, 433
DateVariable archetype, 448–449
definition of rules, 434–435
definition, 449
evaluation, 454–457
and logic, 445
Operator archetype, 447
pattern overview and roadmap, 433–434
physical location of rules, 441–442
Proposition archetype, 447
RuleContext archetype, 449
RuleElement archetype, 445–447, 449
RuleOverride archetype, 459
RuleSet archetype, 458
Variable archetype, 448
RuleContext archetype, 445, 449, 454
RuleElement archetype, 445–447, 449, 452
RuleOverride archetype, 251–252, 449, 458, 459
rules
activity rule, 440
and business processes, 437–440
business rules, 435–436
business system rules, 436–437
ccontext, 440
definition of, 434–435
and formal logic, 442–445
invariant, 440
physical location of, 441–442
rules-based pricing, 249–252, 290
rules engine, 441, 445, 449
RuleSet archetype, 458
RUP. See Rational Unified Process (RUP)

S
sales order, 303, 383
SalesOrder archetype, 307, 309, 310, 311
amendments, 376–377
business process, 364–366
cancellations, 366–368
despatch items, 370–371
issue invoices, 381–382
payments, 373–375
processing, 368–370
refunds, 380–381
rejected items, 372–373
returned items, 377–379
SalesTaxPolicy archetype, 321, 322
scale-free network, 158
section tag, 106
Secure Trade, 412
security, 129–132
sell-by date, 217
semantic dependencies, 60
sequence diagrams, 94, 101
SerialNumber archetype, 214, 217, 312
ServiceDeliveryStatus archetype, 257, 277
ServiceInstance archetype, 256–258, 279, 280, 282
ServiceInventoryEntry archetype, 274, 277–278, 280
services
vs. goods, 254
orders, 304
as subclasses, 218
as kind of product, 255
uniquely identifying, 210, 211–212
ServiceType archetype, 256–258, 280
set, 234, 235
shopping basket, online, 384–385
SI. See International System of Units (SI)
SIBaseUnit archetype, 395–397
Singleton pattern, 8, 14
«singleton» stereotype, 14
Six Degrees of Kevin Bacon, 157–158
social security number, 139–140
source code
disadvantages of value invested in, 55
generating, with ArcStyler, 77–80
as location of rules, 441
as model, 50
in software stacks, 52
PSM compiled into, 54, 69
StandardConversion archetype, 408–409
statecharts, 95
statement, proposition, 442
stock. See inventory
stock exchange symbols, 148
SubstitutedBy archetype, 243
symmetrical relationships, 161
SymmetricPartyRelationship pleomorph,
  161, 162
synonyms, 102
syntactic dependencies, 60
system blindness, 26
SystemOfUnits archetype, 395

T
tagged values, 105–106
TaxOnLine archetype, 319–321
TelecomAddress archetype, 134–136
«trace» stereotype, 56
train journey inventory example, 293–300
translation, 30
  isomorphism, 35, 58
  procedure for, 33–34
trivialization of business requirements, 88,
  96–97
truth tables, 443
truth value, proposition, 442

U
Unified Modeling Language (UML) models
  and BCDs, 98, 99
  comprehensibility and accessibility of,
    89–96
  and ebXML core components, 41–42
  modeling patterns in, 32–36
  modeling style, 14–16
  model transformation, tools for, 69–70
  OCL data types, 16–17
  pattern configuration rules, 64–67
  precision and, 109
  problems with, 87–88
  profile for archetypes and archetype
    patterns, 10–14
  stakeholders in, 90
  stereotypes, 65
tags, 105–107
UniqueIdentifier archetype, 125
UniqueProduct pleomorph, 24, 206, 207,
  258–260
unique things, 204, 206
Unit archetype, 395
UnitConverter archetype, 408–409
United Nations Centre for Trade
  Facilitation and Electronic Business
  (UN/CEFACT), 41
Universal Product Code (UPC), 211, 212
UpgradableTo archetype, 243, 245
up-selling, 244–245
use-by date, 217
use case
  diagrams, 93, 101
  specifications, and comprehensibility, 92
user ID, 129

V
Value Added Tax (VAT), 321, 404
variability, 4
Variable archetype, 448
variables, 444
variation
  in archetype patterns, 17, 20–22
  in archetypes, 18–20
  principle of, 17
visual modeling
  problems with, 87–88
  trivialization of business requirements in,
    96–97
Vlissides, John, 8
W
WebPageAddress archetype, 137
well-formed configurations, 58
World Wide Web, as scale-free network,
158

X
XML, 41, 57, 111, 382
   BodyXML, 141
   schema, 41, 109, 111
   tags, 110–111
XP. See Extreme Programming (XP)

Y
Yahoo!, as highly connected node, 158