

Index

A

abstract class 37, 42, 54, 240
abstraction 10
activity diagram 128, 142, 160
actor 133
ADISSA 166, 174
aggregation 33, 113, 129
aggregation relationship 34, 86, 113, 151
analysis and design 1, 126, 168
analysis stage 168, 178
application program 2, 52, 173, 250, 292
application-specific 49, 173, 305
attribute 5, 18

B

basic method 173, 304
behavior 43, 154, 167
behavior diagram 128, 135
binary relationship 77-78
business object 145
business process 57, 142, 249

C

candidate key 114
CASE tool 4, 100, 128, 174

class 5, 16
class diagram 13, 57, 169
class method 249, 291
collaboration diagram 128
compatibility 131, 203, 213, 225
complete class diagram 248
complex attribute 76, 100
conceptual data model 2, 103
conceptual model 11, 36
control object 153
create 248
CRUD 46, 304

D

data analysis 4, 58, 169
data class 184, 248
data definition language (DDL) 2, 14
data dictionary (DD) 169, 203, 230, 248
data elements 233
data flow 4, 166, 184, 230, 270
data flow diagram (DFD) 4, 124
data model 50, 61, 169
data object 15, 130, 154
data store 183
data structure 2
data type definition 18

data/entity class 178
 database management system (DBMS) 2,
 126
 database schema 2, 14
 dataflow 170, 231, 250, 281
 description of a transaction 172, 256, 291,
 296
 design phase 126, 153, 159, 170, 209,
 230, 248, 263, 322
 design stage 166, 168, 171, 209
 development methodologies 168
 dictionary tables 235
 display method 279
 dynamic behavior 141, 144

E

elementary function 186, 250
 encapsulation 9, 167
 entity relationship (ER) 2, 105, 166
 entity relationship diagram (ERD)
 4, 74, 127, 166, 171, 178
 entity relationship model 13, 74
 external entity 170, 187, 250

F

flowchart 142, 315
 FOOM 165, 178
 foreign-key 105
 fourth generation language 2
 function 5, 45, 184, 250, 292
 functional analysis 4, 58, 182
 functional approach 165
 functional design 269
 functional model 50, 127, 178
 functional requirement 61
 functional-hierarchical decomposition 198

G

general function 185, 226, 251, 265, 270
 generalization-specification 125

H

hierarchical decomposition 185
 human interface 126

I

inheritance 5, 41, 129
 inheritance relationship 7, 86, 111,
 125, 201
 initial class diagram 169, 178
 input 172, 187, 248
 input screen 15, 209, 242, 257, 285
 input-output screen 296
 inputs and outputs 281, 286, 301
 integrity constraint 105, 325
 interface 9, 133, 248, 268, 307
 interface object 15, 153
 inverse reference attribute 30, 62

K

key 14, 20, 28, 42, 54, 62, 84, 105
 key tuple 28, 80

M

M:N relationship 78
 main method 292
 main procedure 261
 many-to-many relationship 63, 110
 mapping rule 74, 103
 menu item 172, 169, 275, 292, 307
 menus 7, 126, 273
 menus class 171, 278
 menus interface 269
 menus tree 169, 249, 268
 menus tree design 270
 message 7, 17, 138
 message chart 169, 249, 315
 message connection 125
 method 5, 43, 169, 248, 291
 mixed transaction 252
 multi-valued attribute 21, 77, 104
 multi-valued dependencies 105
 multiple-inheritance 40
 multiplicity 24, 48, 78, 130, 167
 multiplicity constraint 130

N

N:N relationship 78, 110
 N:N:N relationship 80

normal form (NF) 105
 normalization 113
 normalized relation 23, 105
 not-null attribute 111
 null value 26, 35, 109, 115

O

object 5
 object class 58
 object definition language (ODL) 14
 object diagram 131
 object identification number (OID) 21, 104
 object management group (OMG) 127
 object model 159
 object modeling technique (OMT) 124
 object-oriented (OO) 1, 124
 object-oriented data flow diagram (OO-DFD) 169
 object-oriented programming 2
 object-relational DBMS (OR-DBMS) 104
 objects model 13, 57, 127
 objects schema 14, 68, 103
 one-to-many relationship 80, 109
 OO database 230
 OO development methodologies 145
 OO methodologies 167
 OO model 13
 OO programming 3
 OO schema 126
 OO-DBMS 4, 103, 126
 OO-DFD 170, 178, 250
 OOA 125
 OOA/OOD 124
 OOD 126
 output 153, 167, 173, 248
 output report 268, 285

P

parameter 43
 participation constraint 37, 112
 polymorphism 39, 42
 primary-key 105
 process logic 195, 250, 291
 program flowchart 142, 160, 315
 programming 47, 308, 322

programming language 1
 pseudo code 47, 169, 249, 291

R

real-time entity 185, 251
 real-time system 140, 152, 167
 real-time transaction 252, 272
 reference attribute 22, 26, 62, 75, 106
 relation 108, 111
 relational database 230
 relational DBMS 3
 relational model 3, 104
 relational schema 103
 relationship 24, 27, 64, 110, 202
 relationship class 28, 78
 reusability 10
 reuse 4, 10

S

selection item 270, 278
 sequence diagram 128
 set attribute 21, 108
 signature 9, 11, 43
 singular class 182
 software engineering 3
 specialization 60
 specific methods 305
 SQL 135, 232
 state chart 127, 141, 160
 structural relationship 86, 125
 structure diagram 128
 structured programming 2, 43
 structured system analysis (SSA) 2, 166
 structured system design (SSD) 2, 166
 subclass 5, 34, 60, 106
 subsystem 277
 superclass 5, 34, 112
 synchronized 178
 system analysis 45, 168
 system development methodologies 165

T

ternary relationship 30, 74, 111
 time entity 184, 251
 time transaction 252, 272

transaction 166, 172, 248, 256, 291, 296
transaction class 172, 286, 292
transaction method 173, 263, 307
trigger item 270, 277
trigger menu item 292
tuple 20, 107

U

unary relationship 24, 78, 109
unified modeling language (UML) 124, 167
use case 128
use case description 137
use case diagram 135
use case model 145
user entity 184, 251, 281
user interface 169, 249
user transaction 251

V

verification 158, 224

W

weak entity type 74
whole-parts 33, 150
whole-parts relationship 33, 113