

Index

A

- abstract data type, 196, 244
- access flag, 219
- actual parameters, 80, 94
- addition operator, 19
- algorithm, 2–3
- A.L.U., 2
- And operator, 45–46
- arguments, 94
- arithmetic operators, 19
- array, 114
 - and pointers, 161
 - as arguments, 116
 - initialization, 115
 - multi-dimensional, 122
 - of objects, 258
 - of structures, 200
 - one-dimensional, 114
 - processing, 115
 - strings, 122
 - two-dimensional, 121
- ASCII text, 224
- assignment statement, 18

B

- binary, 3
- binary digits (bits), 15
- binary files, 224
- binary search, 140–142
- block, 92
- boolean data type (bool), 17
- bottom test loop, 60
- bubble sort, 143–145
- byte, 15

C

- C++
 - environment, 6
 - programming, 14
- call (to a function), 77
- case sensitive, 16
- cd, 273
- central processing unit (C.P.U.), 2
- character case conversion, 177

- character data type (char), 15, 176
- character input, 221
- cin statement, 26
- class member data, 244
- class member function, 244
- class name, 244
- classes, 244
- client, 246
- close() function, 220
- coercion, 30
- comments, 15
- compiler, 3–6
- computer
 - program, 2
 - system, 2
- conditional statements, 19, 42
- constants, 16
- constructor, 255–256
 - example, 255–256
 - invoking, 256
- control unit, 2
- converting algebraic to C++, 30
- counter controlled loops, 58
- counters, 58
- cout statement, 18, 26
- cp, 273
- c-string, 27
- ctype header file, 176

D

- data hiding, 246
- data types, 16
- data type conversions, 30
- definitions, 16
- decrement operator, 56
- default
 - arguments, 94
 - constructor, 255
 - switch, 47
- delete operator, 162
- dereferences, 158
- dereferencing operator, 159
- destructor, 256
- division operator, 19
- do-while, 60

dot operator, 197
 double data type, 17
 drivers, 99–100
`dW`, 274
 dynamic variables, 162

E

end of line marker, 215
`endl`, 29
`eof` function, 216
 escape sequence, 29
 executable (`.exe`), 4–5
 explicit type conversion, 30
 expressions, 18, 29
 extraction operator, 26

F

files, 64, 214
 access flag, 219
 as parameters, 220
 binary, 224
 closing, 220
 formatting, 214
 in C++, 214
 reading, 215–218
`find`, 273
 floating point data type (`float`), 17
 for loop, 61–62
 formal parameters, 80, 93
 formatted output, 35
 fixed, 28
 `showpoint`, 28
 `setprecision`, 28
`fstream`, 64, 214, 219
 functions
 call, 77–78
 `main`, 76
 heading, 77
 overloading, 99
 pass by value, 78–80
 pass by reference, 81–83
 procedures, 76, 98
 prototype, 78
 scope, 92–93
 value returning, 66, 96–98
 void, 76
 fundamental instructions, 17–19

G

`get` function, 181, 221
`getline` function, 179, 224
 global, 14, 92
 grammatical error, 4
`grep`, 273

H

hardware, 2
 header, 14
 header file, 247
 `cctype`, 176
 `fstream`, 214, 224, 311
 `ifstream`, 214
 `iomanip`, 29, 216
 `iostream`, 15, 26
 `cmath`, 30
 `ofstream`, 22, 214
 high level languages, 3–4

I

identifiers, 16
 if statement, 42
 if/else statement, 43
 if/else if statement, 43
`ifstream`, 64, 214
`ignore` function, 182
 implementation, 246
 implicit type coercion, 30
 include statement, 15
 increment operator, 56
 infinite loop, 57
 inline member functions, 254
 inner loop, 63
 input, 2
 statements, 19
 insertion operator, 26
 instance, 197, 244
 integer data type (`int`), 16
 integrated development environments (IDE), 6
 interface, 246–247
 I/O, *see* input and/or output
`iomanip`, 29, 216
`ios::app`, 219
`ios::beg`, 229
`ios::binary`, 219
`ios::cur`, 229
`ios::end`, 229
`ios::in`, 219
`ios::out`, 219
`iostream`, 15
`isalpha`, 184
`isdigit`, 178
 iteration, 57

L

library, 4–5
 lifetime, 93
 linear search, 138–140
 linker, 4
 linking process, 4
 literal, 18

local scope, 92
 logic error, 5
 logical file name, 214
 logical operators, 45–46
 long data type, 16–17
 loops, 19, 56
 do-while, 60–61
 for, 61–62
 nested, 63
 while, 56–58
 low level code, 4
 ls, 273

M

machine code, 3
 main
 function, 15, 76
 section, 14
 man, 274
 math library, 30
 member data, 196, 244
 member function, 244
 member of structures, 196
 memory
 main, 2
 storage, 15
 methods, 244, 248
 mkdir, 274
 modularized, 76, 244
 modules, 76
 modulus operator, 19
 multiplication operator, 19
 mv, 274

N

ndw, 274
 nested if statements, 44–45
 nested loops, 63
 new operator, 163
 Not operator, 46
 nullptr, 158

O

o, 274
 O, 274
 object code, 4–5
 object-oriented programming, 244
 objects, 244
 ofstream, 64, 214
 open function, 214
 operating system, 6
 Or operator, 46
 outer loop, 63
 output, 2
 statements, 18
 overloading functions, 99

P

parameters, 76
 actual, 81
 formal, 81
 parameter-less functions, 76
 pass by reference, 81
 pass by value, 81
 physical file name, 214
 pointer variables, 158
 pow(number, exp), 30
 precedence rules, 29
 prime the read, 216
 private data members, 245
 procedures, 76
 prompt, 27
 prototype, 78, 98
 ptr, 158
 pwd, 274

R

random access files, 228
 records, 226
 reference variable (*also see* pass by reference), 158
 relational operators, 42
 return statement, 96–97
 rm, 274
 rmdir, 274
 run time error, 5

S

search algorithms, 138
 linear search, 138–140 *See* Kp, 228–229
 binary search, 140–143 *See* Kq, 228–229
 sequential file access, 228
 scope, 92
 scope rules, 93
 secondary storage, 2
 seekg, 229
 seekp, 229
 selection sort, 145–147
 setprecision, 28
 setw(), 29, 180
 short data type, 16–17
 software, 2, 6
 sorting algorithms, 142
 bubble sort, 143–145
 selection sort, 145–147
 source code, 4–5
 sqrt(), 30
 static variables, 94
 strcat function, 180
 strlen, 179
 strcmp function, 181
 strcpy function, 181

- string constants, 178
- string object, 27
- strings, 27
 - as arrays, 179
- strlen function, 179
- structures, 196
 - arguments for functions, 204
 - hierarchical, 202
 - initializing, 201 stubs,
- 99–100 subtraction
- operator, 19
- switch statement, 46–47
- syntax error, 4

T

- tag, 196
- tellp, 229
- tellq, 229
- tolower, 177
- top test loop, 60
- toupper, 177, 198
- trailing else statement, 44

- translate, 3–5
- truncated, 30
- type casting, 30
- type conversion, 30

U

- Unix, 273

V

- value returning functions, 76, 96–98
- variables, 16
- vi, 274
- visual C++, 271
- void functions, 76

W

- while loop, 56–58
- white space, 27
- write function, 224