

```
1: # $Id: airports-part.db,v 1.1 2013-01-31 16:55:20-08 - - $
2: # Shorter list of airport codes for debugging.
3: SAN:San Diego International/Lindbergh Field
4: LAX:Los Angeles International
5: BUR:Burbank/Glendale/Pasadena
6: LAS:Las Vegas McCarran International
7: ONT:Ontario (CA) International
8: RNO:Reno Cannon International
9: SJC:San Jose (CA) International
10: SBA:Santa Barbara Municipal
11: SFO:San Francisco International
12: SMF:Sacramento Metro
13: SNA:Santa Ana/Orange County/John Wayne
```

```
1: # $Id: airports-part.db.sorted,v 1.1 2013-01-31 16:55:33-08 - - $
2: # Shorter list of airport codes for debugging.
3: BUR:Burbank/Glendale/Pasadena
4: LAS:Las Vegas McCarran International
5: LAX:Los Angeles International
6: ONT:Ontario (CA) International
7: RNO:Reno Cannon International
8: SAN:San Diego International/Lindbergh Field
9: SBA:Santa Barbara Municipal
10: SFO:San Francisco International
11: SJC:San Jose (CA) International
12: SMF:Sacramento Metro
13: SNA:Santa Ana/Orange County/John Wayne
```

```
1: # $Id: airports-full.db,v 1.1 2013-01-31 16:55:20-08 - - $
2: # List of airport codes.
3: # Long list of airport codes.
4: JNU:Juneau International
5: DAY:Dayton James M. Cox International
6: BOS:Boston Logan International
7: BDL:Hartford/Springfield Bradley International
8: AIY:Atlantic City International
9: ABQ:Albuquerque International
10: ABE:Allentown-Bethlehem-Easton International
11: AGC:Pittsburgh/Allegheny County
12: ATL:Atlanta William B. Hartsfield International
13: ANC:Anchorage International
14: AUS:Austin Robert Mueller Municipal
15: AVL:Asheville (NC) Regional
16: BIL:Billings Logan International
17: BGR:Bangor International
18: BFI:Seattle Kings County International/Boeing Field
19: BHM:Birmingham Municipal
20: BKL:Cleveland Lakefront
21: BIS:Bismarck Municipal
22: BNA:Nashville Metro
23: BOI:Boise Air Terminal/Gowen Field
24: CHS:Charleston (SC) International
25: BUR:Burbank/Glendale/Pasadena
26: BTV:Burlington International
27: BTR:Baton Rouge
28: BUF:Buffalo International
29: CAE:Columbia (SC) Metropolitan
30: BWI:Baltimore-Washington International
31: CAK:Akron/Canton Regional
32: CGX:Chicago Merrill C. Meigs Field
33: CRM:Charleston (WV) Yeager
34: CLT:Charlotte/Douglas International
35: CLE:Cleveland-Hopkins International
36: CMH:Columbus (OH) International
37: CPR:Casper/Natrona County International
38: CVG:Cincinnati International
39: CRP:Corpus Christi International
40: CYS:Cheyenne
41: DAL:Dallas Love Field
42: GRR:Grand Rapids/Kent County International
43: EYW:Key West International
44: DFW:Dallas-Ft. Worth International
45: DEN:Denver Stapleton International
46: DCA:Washington National
47: DET:Detroit City
48: DTW:Detroit Metropolitan/Wayne County
49: DSM:Des Moines International
50: ELP:El Paso International
51: EWR:Newark International
52: FLL:Ft. Lauderdale-Hollywood International
53: FAR:Fargo Hector International
54: FAI:Fairbanks International
55: FAT:Fresno Air Terminal
56: FSD:Sioux Falls Regional
57: FOE:Topeka Forbes Field
58: FWA:Ft. Wayne Allen County
```

59: GEG:Spokane International  
60: IAH:Houston Intercontinental  
61: HOU:Houston William P. Hobby  
62: HNL:Honolulu International  
63: GSO:Greensboro-High Pt.-Winston Salem Regional  
64: HOT:Hot Springs Memorial Field  
65: HUF:Terre Haute Hulman Regional  
66: HPN:White Plains/Westchester County  
67: HVN:New Haven Tweed  
68: IAD:Washington Dulles  
69: ITH:Ithaca Tompkins County  
70: ILG:Wilmington/New Castle County  
71: ICT:Wichita Mid-Continent  
72: IND:Indianapolis International  
73: INT:Winston-Salem Smith Reynolds  
74: JAN:Jackson Municipal/Thompson Field  
75: ITO:Hilo General Lyman Field  
76: JAX:Jacksonville (FL) International  
77: JFK:New York John F. Kennedy International  
78: PDX:Portland (OR) International  
79: MIA:Miami International  
80: LNK:Lincoln Municipal  
81: LAX:Los Angeles International  
82: LAN:Lansing Capital City  
83: KOA:Kailua-Kona Keahole (HI)  
84: LAS:Las Vegas McCarran International  
85: LGB:Long Beach Daugherty Field  
86: LGA:New York La Guardia  
87: LIH:Lihue (HI)  
88: LIT:Little Rock Regional  
89: MDT:Harrisburg International  
90: MCI:Kansas City International  
91: MBS:Saginaw Tri-City  
92: MCO:Orlando International  
93: MEM:Memphis International  
94: MDW:Chicago Midway  
95: MGM:Montgomery Municipal/Dannelly Field  
96: MHT:Manchester  
97: OAJ:Jacksonville (NC) Albert J. Ellis  
98: MOB:Mobile Municipal/Bates Field  
99: MKE:Milwaukee General Mitchell International  
100: MKC:Kansas City Downtown  
101: MLI:Moline Quad City  
102: MSO:Missoula County  
103: MSN:Madison (WI) Dane County Regional  
104: MSP:Minneapolis-St. Paul International  
105: MSY:New Orleans International  
106: OMA:Omaha Eppley Airfield  
107: OGG:Kahului (HI)  
108: OAK:Oakland International  
109: OKC:Oklahoma City Will Rogers World  
110: OLM:Olympia (WA)  
111: ORD:Chicago-O'Hare International  
112: ONT:Ontario (CA) International  
113: ORF:Norfolk International  
114: PBI:Palm Beach International  
115: SDF:Louisville Standiford Field  
116: RDU:Raleigh-Durham

117: PIE:St. Petersburg/Clearwater  
118: PHL:Philadelphia International  
119: PHF:Newport News Patrick Henry International  
120: PHX:Phoenix Sky Harbor International  
121: PSP:Palm Springs Municipal  
122: PIT:Pittsburgh International  
123: PVD:Providence Theodore Francis Green State  
124: PWM:Portland (ME) International Jetport  
125: RSW:Ft. Meyers Southwest Florida Regional  
126: RNO:Reno Cannon International  
127: RIC:Richmond International/Byrd Field  
128: ROC:Rochester International  
129: SAT:San Antonio International  
130: SAN:San Diego International/Lindbergh Field  
131: SAV:Savannah International  
132: SBA:Santa Barbara Municipal  
133: STL:St. Louis/Lambert International  
134: SJC:San Jose (CA) International  
135: SFO:San Francisco International  
136: SEA:Seattle-Tacoma International  
137: SGF:Springfield (MO) Regional  
138: SMF:Sacramento Metro  
139: SLC:Salt Lake City International  
140: SNA:Santa Ana/Orange County/John Wayne  
141: SPS:Wichita Falls  
142: TUL:Tulsa International  
143: SYR:Syracuse Hancock International  
144: SUX:Sioux City International  
145: TOL:Toledo Express  
146: TPA:Tampa International  
147: TYS:Knoxville McGhee Tyson  
148: TUS:Tucson International  
149: UCA:Utica/Oneida County  
150: YVR:Vancouver International

```
1: # $Id: airports-full.db.sorted,v 1.1 2013-01-31 16:55:33-08 - - $
2: # List of airport codes.
3: # Long list of airport codes.
4: ABE:Allentown-Bethlehem-Easton International
5: ABQ:Albuquerque International
6: AGC:Pittsburgh/Allegheny County
7: AIY:Atlantic City International
8: ANC:Anchorage International
9: ATL:Atlanta William B. Hartsfield International
10: AUS:Austin Robert Mueller Municipal
11: AVL:Asheville (NC) Regional
12: BDL:Hartford/Springfield Bradley International
13: BFI:Seattle Kings County International/Boeing Field
14: BGR:Bangor International
15: BHM:Birmingham Municipal
16: BIL:Billings Logan International
17: BIS:Bismarck Municipal
18: BKL:Cleveland Lakefront
19: BNA:Nashville Metro
20: BOI:Boise Air Terminal/Gowen Field
21: BOS:Boston Logan International
22: BTR:Baton Rouge
23: BTV:Burlington International
24: BUF:Buffalo International
25: BUR:Burbank/Glendale/Pasadena
26: BWI:Baltimore-Washington International
27: CAE:Columbia (SC) Metropolitan
28: CAK:Akron/Canton Regional
29: CGX:Chicago Merrill C. Meigs Field
30: CHS:Charleston (SC) International
31: CLE:Cleveland-Hopkins International
32: CLT:Charlotte/Douglas International
33: CMH:Columbus (OH) International
34: CPR:Casper/Natrona County International
35: CRM:Charleston (WV) Yeager
36: CRP:Corpus Christi International
37: CVG:Cincinnati International
38: CYS:Cheyenne
39: DAL:Dallas Love Field
40: DAY:Dayton James M. Cox International
41: DCA:Washington National
42: DEN:Denver Stapleton International
43: DET:Detroit City
44: DFW:Dallas-Ft. Worth International
45: DSM:Des Moines International
46: DTW:Detroit Metropolitan/Wayne County
47: ELP:El Paso International
48: EWR:Newark International
49: EYW:Key West International
50: FAI:Fairbanks International
51: FAR:Fargo Hector International
52: FAT:Fresno Air Terminal
53: FLL:Ft. Lauderdale-Hollywood International
54: FOE:Topeka Forbes Field
55: FSD:Sioux Falls Regional
56: FWA:Ft. Wayne Allen County
57: GEG:Spokane International
58: GRR:Grand Rapids/Kent County International
```

59: GSO:Greensboro-High Pt.-Winston Salem Regional  
60: HNL:Honolulu International  
61: HOT:Hot Springs Memorial Field  
62: HOU:Houston William P. Hobby  
63: HPN:White Plains/Westchester County  
64: HUF:Terre Haute Hulman Regional  
65: HVN:New Haven Tweed  
66: IAD:Washington Dulles  
67: IAH:Houston Intercontinental  
68: ICT:Wichita Mid-Continent  
69: ILG:Wilmington/New Castle County  
70: IND:Indianapolis International  
71: INT:Winston-Salem Smith Reynolds  
72: ITH:Ithaca Tompkins County  
73: ITO:Hilo General Lyman Field  
74: JAN:Jackson Municipal/Thompson Field  
75: JAX:Jacksonville (FL) International  
76: JFK:New York John F. Kennedy International  
77: JNU:Juneau International  
78: KOA:Kailua-Kona Keahole (HI)  
79: LAN:Lansing Capital City  
80: LAS:Las Vegas McCarran International  
81: LAX:Los Angeles International  
82: LGA:New York La Guardia  
83: LGB:Long Beach Daugherty Field  
84: LIH:Lihue (HI)  
85: LIT:Little Rock Regional  
86: LNK:Lincoln Municipal  
87: MBS:Saginaw Tri-City  
88: MCI:Kansas City International  
89: MCO:Orlando International  
90: MDT:Harrisburg International  
91: MDW:Chicago Midway  
92: MEM:Memphis International  
93: MGM:Montgomery Municipal/Dannelly Field  
94: MHT:Manchester  
95: MIA:Miami International  
96: MKC:Kansas City Downtown  
97: MKE:Milwaukee General Mitchell International  
98: MLI:Moline Quad City  
99: MOB:Mobile Municipal/Bates Field  
100: MSN:Madison (WI) Dane County Regional  
101: MSO:Missoula County  
102: MSP:Minneapolis-St. Paul International  
103: MSY:New Orleans International  
104: OAJ:Jacksonville (NC) Albert J. Ellis  
105: OAK:Oakland International  
106: OGG:Kahului (HI)  
107: OKC:Oklahoma City Will Rogers World  
108: OLM:Olympia (WA)  
109: OMA:Omaha Eppley Airfield  
110: ONT:Ontario (CA) International  
111: ORD:Chicago-O'Hare International  
112: ORF:Norfolk International  
113: PBI:Palm Beach International  
114: PDX:Portland (OR) International  
115: PHF:Newport News Patrick Henry International  
116: PHL:Philadelphia International

117: PHX:Phoenix Sky Harbor International  
118: PIE:St. Petersburg/Clearwater  
119: PIT:Pittsburgh International  
120: PSP:Palm Springs Municipal  
121: PVD:Providence Theodore Francis Green State  
122: PWM:Portland (ME) International Jetport  
123: RDU:Raleigh-Durham  
124: RIC:Richmond International/Byrd Field  
125: RNO:Reno Cannon International  
126: ROC:Rochester International  
127: RSW:Ft. Meyers Southwest Florida Regional  
128: SAN:San Diego International/Lindbergh Field  
129: SAT:San Antonio International  
130: SAV:Savannah International  
131: SBA:Santa Barbara Municipal  
132: SDF:Louisville Standiford Field  
133: SEA:Seattle-Tacoma International  
134: SFO:San Francisco International  
135: SGF:Springfield (MO) Regional  
136: SJC:San Jose (CA) International  
137: SLC:Salt Lake City International  
138: SMF:Sacramento Metro  
139: SNA:Santa Ana/Orange County/John Wayne  
140: SPS:Wichita Falls  
141: STL:St. Louis/Lambert International  
142: SUX:Sioux City International  
143: SYR:Syracuse Hancock International  
144: TOL:Toledo Express  
145: TPA:Tampa International  
146: TUL:Tulsa International  
147: TUS:Tucson International  
148: TYS:Knoxville McGhee Tyson  
149: UCA:Utica/Oneida County  
150: YVR:Vancouver International



```
1: #!/usr/bin/perl
2: # $Id: cooksortdb.perl,v 1.1 2013-01-31 16:55:20-08 - - $
3: #
4: # Cook the database order so that linear insertion produces a
5: # balanced tree.  Balancing a BST is not included in this course.
6: #
7:
8: use strict;
9: use warnings;
10: system "cid $0";
11:
12: $0 =~ s|^^(.*)?([^\s]+)/*$|$2|;
13: my $EXITCODE = 0;
14: END {exit $? || $EXITCODE}
15: sub note(@) {print STDERR "$0: @_"}
16: $SIG{'__WARN__'} = sub {note @_; $EXITCODE = 1};
17: $SIG{'__DIE__'} = sub {warn @_; exit};
18:
19: sub cooksort ($$$$);
20: sub cooksort ($$$$) {
21:     my ($outfile, $lo, $hi, $arrayref) = @_;
22:     return unless $lo <= $hi;
23:     my $mid = int (($lo + $hi) / 2);
24:     print $outfile $arrayref->[$mid];
25:     cooksort $outfile, $lo, $mid - 1, $arrayref;
26:     cooksort $outfile, $mid + 1, $hi, $arrayref;
27: }
28:
29: sub openfile ($) {
30:     my ($filespec) = @_;
31:     open my $file, $filespec or do {warn "$filespec: $!"; return undef};
32:     print "$0: open $filespec: OK\n";
33:     return $file;
34: }
35:
36: for my $infilename (<*.db.sorted>) {
37:     system "cid $infilename";
38:     my $outfilename = $infilename;
39:     $outfilename =~ s/\.sorted$//;
40:     system "cid + $infilename";
41:     my $infile = openfile "<$infilename";
42:     my $outfile = openfile ">$outfilename";
43:
44:     if ($infile && $outfile) {
45:         my @airports;
46:         while (defined (my $line = <$infile>)) {
47:             if ($line =~ m/^\s*(#|$)/) {print $outfile $line}
48:             else {push @airports, $line}
49:         }
50:         @airports = sort @airports;
51:         cooksort $outfile, 0, $#airports, \@airports;
52:     }
53:
54:     close $infile if $infile;
55:     close $outfile if $outfile;
56: }
```