

INDEX

Entries in this index conform to the following typeface conventions: Humdrum commands and sub-command-level instructions are indicated in **boldface** print; Humdrum representations, system-level commands (such as UNIX commands), filenames, and variable names are all indicated in **typewriter** print; titles of musical works are printed in *italics*.

- <**space**> suspend playback (**perform**) 377
- \$ in command line 230
- \$ last data record (**extract**) 280
- \$ last field anchor (**extract**) 281
- \$ last segment in input (**yank -r range**) 476
- \$-1 second-last data record (**extract**) 280
- \$HUMDRUM/regexp.txt test file 398
- & substitute with matched string (**humsed**) 312
- | regular expressions, logical OR 311
- | UNIX pipe 228
- + next measure (**perform**) 378
- + regular expressions, one-or-more 311
- , reduce tempo (**perform**) 378
- repeat measure (**perform**) 378
- h Humdrum help screens 230
- / forward string search (**perform**) 377
- < UNIX here-is file 229
- < reduce tempo (**perform**) 378
- > UNIX file redirection 229
- > increase tempo (**perform**) 378
- >> UNIX file append 229
- = next measure (**perform**) 378
- ? backward string search (**perform**) 377
- ? in command line 230
- ? regular expressions, zero-or-more 311
- _ repeat measure (**perform**) 378
- * in command line 230
- *+ tandem interpretation 212
- *- tandem interpretation 212
- *> tandem interpretation 188-189,210-211
- *^ tandem interpretation 212
- *| . tandem interpretation 214
- * [a-gA-G] [-+] * tandem interpretation — key signature 105,461
- *a2 tandem interpretation 187
- *all tandem interpretation 184
- *AT: tandem interpretation 76,190
- *Ch tandem interpretation 208
- *clef tandem interpretation 105,185-186
- *conct tandem interpretation 187
- *ennun tandem interpretation 162
- *ensemb tandem interpretation 187
- *FT: tandem interpretation 78,190
- *H tandem interpretation 192
- *I tandem interpretation 193-198
- *I tandem interpretation — instrument 95,105
- *IC tandem interpretation 199
- *IC tandem interpretation — instrument class 95,105
- *ICbras tandem interpretation 199
- *ICdio tandem interpretation 199
- *ICKlav tandem interpretation 199
- *ICstr tandem interpretation 199
- *ICvox tandem interpretation 199
- *ICww tandem interpretation 199
- *ITr tandem interpretation 105,221,460-461
- *k[] tandem interpretation — key 105,461
- *k tandem interpretation 202-203
- *K tandem interpretation 202-203

INDEX

*L tandem interpretation 204-205
*M tandem interpretation — meter signature 95,105
*MM tandem interpretation 206-207,217-218
*MM tandem interpretation — tempo 95,105
*ripien tandem interpretation 187
*RT: tandem interpretation 77,190
*S- tandem interpretation 216,434,437
*S/1 tandem interpretation 216
*S/*number* tandem interpretation 437
*S/fin tandem interpretation 216,434,437
*S/name tandem interpretation 216
*solo tandem interpretation 187
*staff tandem interpretation 213
*strophe tandem interpretation 215-216,434,437
*tb tandem interpretation 220
*tb tandem interpretation — time-base 105
*thru tandem interpretation 219
*thru, tandem interpretation 448
*Tr tandem interpretation 221,459-460
*ueber tandem interpretation 209
*unter tandem interpretation 209
*v tandem interpretation 212
*vibrato tandem interpretation 162
*x tandem interpretation 212
**accid, sample interpretation 242
**bowing 12
**Cdev, sample interpretation 242
**cents representation 46-48
**cents, translate to 237
**correl representation 49-50
**dB representation 56-57
**date representation 51-55
**date, in reference records 30-32,35
**deg representation 58-60
**deg, translate to 261-264
**degree representation 12,61-63
**degree, translate to 265-268
**diaton, sample interpretation 242
**diss representation 64-65
**dur representation 66-68
**dynam representation 12
**embel representation 69-72
**freq representation 12,73-75
**freq, translate to 294-296
**fret representation 76-84,190-191
**harm representation 12,85-90
**hint representation 184
**IPA representation 91-95
**IPA representation summary 92
**iv, translate to 373-375
**kern representation 15,96-106
**kern representation summary 99
**kern, general file information 235-236
**kern, translate to 323-327
**melac representation 107-109
**metpos representation 110-112
**MIDI 339-344,376-380,394-396,425-426,445
**MIDI representation 113-115
**MIDI, translate to 339-343
**mint representation 12,116-118
**nf, translate to 373-375
**oct, sample interpretation 242
**ordo representation 119-120
**pc representation 121-124
**pc, translate to 369-372
**pcset representation 12,125-129
**pcset, translate to 373-375
**pitch representation 12,130-133
**pitch, translate to 383-386
**recip representation 12,97,134-136,206
**semits representation 137-139
**semits, translate to 415-417
**simil representation 140-141
**simxrf representation 419
**solfa representation 142-144
**solfa, translate to 427-430
**solfg representation 145-148
**solfg, translate to 431-433
**specC representation 149-151
**spect representation 152-153
**synco representation 154-156
**takt representation 157-159
**text representation 12,160-164
**time representation 165-166
**Tonh representation 167-170
**Tonh, translate to 453-456
**vox# representation 174-175
**URrhythm representation 171-173
**Zeit representation 176-179
**Zeit, in reference records 29,31
12 tone row (**reihe**) 399-403
2-3 retardation (**embel) 70
330 MIDI card address 379,395,445
4-3 suspension (**embel) 70
7-6 suspension (**embel) 70
7-8 retardation (**embel) 70
8va bassa 185
9-8 suspension (**embel) 70

A

a append (**humsed**) 310
abbreviated data format 436,438
abbreviated data format (**thru**) 446-450
abbreviated format 188-189,219
absolute scale degree, representation of (**degree) 61-63
absolute time period, representation of (**Zeit) 176-179
accent, representation of melodic (**melac) 107-109
accented lower neighbor (**embel) 70
accented passing tone (**embel) 70
accented upper neighbor (**embel) 70
accents, language diacriticals 28
accents, pitch-related (**melac**) 332-333
accents, representation of (**kern) 97
acciaccaturas, representation of (**kern) 98

- accidentals, incoherent (**proof**) 387
 accidentals, missing precautionary (**proof**) 387
 accidentals, representation of (**kern) 96
 accordion 195,197
 acoustic spectra 8
 act number, reference records 31
 added seventh (**embel) 70
 address, MIDI card 379,395,445
 Aeolian mode 458
 Aho, A. 519-520
 Albanian language 35
 alias/stage name, reference records 29
 Alkan, C. 189
 alternative concurrent information (**strophe**) 434
 alternative title, reference records 30
 alto clef 185
 alto voice 194
 amalgamate articulation information (**cleave**) 243
 amalgamate files 232-234
 amalgamate pitch and duration (**cleave**) 240
 American pronunciation (**IPA) 91-94
 ametric meter indications 206
 amplitude, representation of (**dB) 56-57
 anacrusis passages, extraction of 478
 analytic information 34,96-97
 anchors, regular expressions 496,503
 annularis finger (**fret) 79,81
 Anon., names 27
 anonymous, names 27
 ANSI standard pitch notation 383
 anticipation (**embel) 70
 append (a), **humsed** 310
 appoggiaturas (**embel) 70
 appoggiaturas, representation of (**kern) 98
 Arabic language 27,35
 archlute 194
 Armenian language 35
 arpeggiation, representation of (**kern) 97
 arpeggio tone (**embel) 70
 arpeggio tones, grouping into chords 245
 arranger, reference records 29
 articulation marks, incoherent (**proof**) 387
 articulation marks, representation of (**kern) 96-97
 artificial harmonics (**fret) 78,81
 ascending slur articulation (**fret) 80-81
 ASCII 8,492
 ASCII language setting, reference records 34
 assemble (**encode**) 269
 assemble full score 232-234
assemble command 232-234
 associated works, reference records 34
 asterisk in command line 230
 asterisks 10
 atonal tandem interpretation 200
 attacca, representation of (**kern) 97
 attributed composers 26
 attributed composers, reference records 28
 audition (**perform**) 376-380
 augmentation dots, representation of (**kern) 98
 authorship information 28-29
- average tempo, calculation of (**midi**) 342
 awk command (UNIX) 26,313,397-398,480,492
 AWK_VER environment variable 398
 Azeri language 35

B

- B-A-C-H pattern 7
 Bach, J.S. 13,59,62,103,107,111,158,165,256,350
 backslash character in command line 230
 backward string search (?), **perform** 377
 bagpipes, Irish 195
 bagpipes, Scottish 195
 ballet steps 8
 banjo 194
 banjo, tablature representation 76
 barbershop quartet, genre 34
 barbershop quartets 7
 baritone voice 193
 barlines 15
 barlines, avoiding repeated (**fill**) 293
 barlines, common system 43-45
 barlines, double 43
 barlines, eliminate duplicate (**humsed**) 243
 barlines, number of (**kern) 236
 barlines, number of double (**kern) 236
 barlines, representation of (**kern) 98,101
 barlines, representation of double (**kern) 99
 barlines, with measure numbers 44
 barlines, with pauses 43
 Baroque period (**Zeit) 178
 Baroque, period 34
 bars, extract specified (**yank**) 476-480
 bars, numbering of (**num**) 354-358
 bars, renumbering of (**num**) 354-358
 Bartók, B., dissonances in 7
 Bartók, Bela 335
 basic regular expressions 501,505
 bass clef 185
 bass course 77
 bass drum 197
 bass guitar, tablature representation 76
 bass voice 193
 basso cantante voice 194
 basso profondo voice 194
 bassoon 195
 beaming, representation of (**kern) 96-97
 beat position, representation of (**takt) 157-159
 bebop, style 34
 Beethoven, L. van 174
 bell 197
 bémol 431
 bending of pitch (**fret) 80-81
 Bengali language 36,204
 bibliographic information, files 26
 binary files (**smf**) 425
 binary form 188

INDEX

biwa 194
blue staff line 214
Boehm, T. 178
Bondy, S. 2
bowing, col legno (**fret) 78,81
bowing, direction of (**fret) 79,81
bowing, ponticello (**fret) 78,81
bowing, representation of (**kern) 97
bowing, spiccato (**fret) 78,81
bowing, sul tasto (**fret) 78,81
bowing, tremolo (**fret) 78,81
Brahms, J. 143
Brandenburg Concertos 7
brass instruments 199
Bratsche 195
Bregman, A.S. 520
breve durations (**kern) 98
Brinkman, A. 520
British pronunciation (**IPA) 94
Bulgarian language 36
Butler, D. 520
BWV catalogue 32

C

C clef 185
caeruleus staff line 214
calliope 195
Cambodian language 36
canonical duration, representation of (**kern) 96
canonical duration, representation of (**recip) 134-136
canonical ordering of signifiers (**kern) 102-103
Cantonese language 36
capturing Humdrum data (**encode**) 269
cardinal range specification 476
carillon 197
castanets 197
castrato voice 194
cat command (UNIX) 478-479
catalogue, BWV 32
catalogue, Hoboken 32
catalogue, Köchel 32
CCARH 2
celesta 197
cembalo 194,197
census command 235-236
Center for Computer Assisted Research in the Humanities 2
centroid, representation of spectral (**specC) 149-151
cents, representation of (**cents) 46-48
cents, translate to 239
cents command 237-239
cents representation 46-48
ch'in 194
chalumeau 195
changing tones (**embel) 70

character classes, complementary 498,504
character classes, keywords in 499
character classes, metacharacters in 498,501
character classes, regular expressions 497,504
checksum validation number, reference records 33,465-466
chemical processes 8
Chief Falcon Feather 27
child's voice 193
chimes 197
Chinese, tonal inflections (**IPA) 91
chitarrone, tablature representation 76
Chopin, Frederick 28
chord alterations (**harm) 85
chord inversion (**harm) 85,87
chord root (**harm) 85,87
chord type (**harm) 85,87
chordal tones (**embel) 70
chordal tones, arpeggio 70
chords, French sixth (**harm) 87
chords, German sixth (**harm) 87
chords, Italian sixth (**harm) 87
chords, Neopolitan sixth (**harm) 87
chords, Tristan (**harm) 87
chords, augmented (**harm) 85,87
chords, augmented sixth (**harm) 87
chords, chromatic mediant (**harm) 85
chords, diminished (**harm) 85,87
chords, diminished seventh (**harm) 86-87
chords, eleventh (**harm) 86-87
chords, enharmonic spelling (**harm) 87
chords, ethnic sixth (**harm) 87
chords, extended tertian (**harm) 86-87
chords, first inversion (**harm) 86-87
chords, half diminished seventh (**harm) 86-87
chords, major (**harm) 85,87
chords, minor (**harm) 85,87
chords, ninth (**harm) 86-87
chords, root position (**harm) 86-87
chords, second inversion (**harm) 86-87
chords, secondary dominants (**harm) 86-87
chords, seventh (**harm) 86-87
chords, third inversion (**harm) 86-87
chords, thirteenth (**harm) 86-87
Christ, W. 520
chromatic lower neighbors (**embel) 70
chromatic mediant chords (**harm) 85
chromatic offset (**trans**) 457
chromatic transposition (**trans**) 457-461
chromatic unaccented passing tones (**embel) 70
chromatic upper neighbors (**embel) 70
ciphers (stuck notes) 445
citation, electronic 35
cittern 194
clarinet, piccolo, soprano, alto, bass 195
Classical period (**Zeit) 178
classify numerical data tokens (**recode**) 389-393
clavecin 194,197
clavichord 194,197
cleave command 240-244

clefs 185-186
 Clift, S. 1
 clock ticks (**midi**) 341
 clock ticks, MIDI (**record**) 395
 closed beams, representation of (**kern) 97
cmp command (UNIX) 102
cnt file extension 237
 codas, through-composed expansions (**thru**) 446
 Cole, H. 520
 col legno bowing (**fret) 78,81
 coloratura soprano voice 194
 colored staff lines 214
 command documentation 225
 command line syntax 225
 command line, example 226
 command line, options 226
 command line, problems with shell metacharacters 281
 command line, use of boldface 225
 command line, use of dash character 226
 command line, use of ellipses 225
 command line, use of italics 225
 command line, use of square brackets 225
 command, **assemble** 232-234
 command, **census** 235-236
 command, **cents** 237-239
 command, **cleave** 240-244
 command, **context** 245-253
 command, **correl** 254-260
 command, **deg** 261-264
 command, **degree** 265-268
 command, **diss** 1
 command, **encode** 1,269-279
 command, **extract** 280-285
 command, **fields** 286-289
 command, **fill** 290-293
 command, **freq** 294-296
 command, **hint** 297-302
 command, **humdrum** 303-309
 command, **humsed** 310-313
 command, **humver** 314
 command, **infot** 315-320
 command, **iv** 321-322
 command, **kern** 323-327
 command, **key** 328-331
 command, **melac** 332-333
 command, **metpos** 334-338
 command, **midi** 1,339-343
 command, **midreset** 344
 command, **mint** 345-351
 command, **nf** 352-353
 command, **num** 354-358
 command, **patt** 359-364
 command, **pattern** 365-368,506
 command, **pc** 369-372
 command, **pcset** 373-375
 command, **perform** 1,376-380
 command, **pf** 381-382
 command, **pitch** 383-386
 command, **proof** 387-388
 command, **recode** 389-393
 command, **record** 1,394-396
 command, **regexp** 397-398
 command, **reihe** 399-403
 command, **rend** 404-407
 command, **rid** 408-410,501
 command, **scramble** 411-414
 command, **semits** 415-417
 command, **simil** 1,418-424
 command, **smf** 1,425-426
 command, **solf** 427-430
 command, **solfg** 431-433
 command, **strophe** 215-216,434-440
 command, **sync** 1,441-444
 command, **tacet** 1,377,445
 command, **thru** 188,210,215,219,436,438,446-450
 command, **timebase** 98,451-452
 command, **tonh** 453-456
 command, **trans** 457-461
 command, **urhythm** 462-464
 command, **veritas** 33,465-466
 command, **vox** 467-468
 command, **xdelta** 469-475
 command, **yank** 210,476-480
 command, **ydelta** 481-483
 command, arguments 225
 command, options 225
 comments 9,303
 comments, eliminate (**rid**) 408-410
 comments, eliminate null (**rid**) 408-410
 commission, reference records 31
 commissioned works 26
 common practice music, representation of (**kern) 96-106
 common system barlines 43-45
 compare two numerical spines (**correl**) 254
 compare two numerical spines, (**correl**) 260
 complementary character classes 498,504
 composer's dates, reference records 29
 composer's name 26
 composer's name, reference records 28
 composer's nationality, reference records 29
 compound meter 34
 concert program 189
 concertina 195
 concertino 187
 concurrent events 9
 concurrent numeric differences 481-483
 conductor's name, reference records 30
 consonance, representation of (**diss) 64-65
 consonants, representation of (**IPA) 91
 context dependency (**kern) 101
 context, regular expressions 496,503
context command 245-253,315,320
 contrabass 194
 contrabassoon 195
 contrafagotto 195
 contralto voice 193
 control-D 228,397
 control-Z 228,397
 controller card, reset MIDI (**midreset**) 344

INDEX

Cope, D. 520
copyright date, reference records 32
copyright information 32-34
copyright message, reference records 32
copyright owner, reference records 32
copyright, country of 32
copyright, date 32
copyright, illegal 28
copyright, intellectual property 28
copyright, licensed 28
copyright, original document 28
copyright, original document owner 33
copyright, original year 33
copyright, owners 32
copyright, public domain 28
copyright, shareware 28,32
copyright, tampering with statements of 28
cor file extension 255
cor anglais 195
core pitch/duration representation (**kern) 96-106
cornemuse 195
comet 195
cornett 195
cornetto 195
corporate composers, reference records 29
correl command 254-260
correl representation 49-50
correlation coefficient (**correl) 49-50
correlation, calculate (**correl**) 254-260
correlations, representation of (**correl) 49-50
counter-tenor course 77
counter-tenor voice 194
country of composition, reference records 31
country of copyright, reference records 32
courses, representation of 77
Croatian language 36,204
crossing hands 35
crumhorn — see instrument, krumhorn 196
curved lines 97
cut command (UNIX) 280
cut, see (**extract**)
cyclic rotation of row (**reihe**) 399-403
cymbals 197
cymbals, crash 197
cymbals, finger 197
cymbals, ride 197
cymbals, splash 197
Czech language 36,204
Czerny edition (**thru**) 447

Damerau-Levenshtein metric 1,419,424
damping string (**fret) 78,81
dance scholars 7
Danish language 36,204
Dannenberg, R. 520
“Das Wandern” from *Die Schöne Müllerin* 24,434,436
data accuracy and error detection 521-522
data columns — see spines
data encoding (**encode**) 269-279
data records 9-10,303
data records, eliminate (**rid**) 408-410
data records, eliminate null (**rid**) 408-410
data records, number of 236
data tokens, numbering of (**num**) 354-358
date encoded, reference records 35
date of composition, reference records 31
date of first performance, reference records 30
date of first publication, reference records 32
date of performance, reference records 30
date, representation of (**date) 51-55
date representation 51-55
Dawkins, K. 1
dB, representation of (**dB) 56-57
dB representation 56-57
De Falla, M. 189
Debussy, C. 146
decibels, representation of (**dB) 56-57
decimal strophe numbers (**strophe**) 437
dedication, reference records 31
deep structure (**regexp**) 492
default fret tuning (**fret) 78
default key-velocity (**perform**) 379
default tempo (**perform**) 379
deg command 261-264
deg file extension 261
deg representation 58-60
degree, representation of scale (**deg) 58-60
degree, representation of scale (**degree) 61-63
degree, scale 261-268,427-430
degree command 265-268
degree representation 61-63
deletion (**d**), **humsed** 310
delimiters, subtoken (**cleave -d**) 241
delimiters, subtoken (**context -d**) 247
Delone, R. 520
Den Haag 31
Deng Xiao Tie 27
Density 21.5 248-249,251-252
density, determine textural 467-468
density, representation of textural (**vox#) 174-175
dgr file extension 265
diatonic interval 297-302,345-351
diatonic offset (**trans**) 457
diatonic pitch 261-268,427-430
diatonic transposition (**trans**) 457-461
Die Schöne Müllerin 24,434,436
dièse 431
diff command (UNIX) 102
differentiation 469-475
differing renditions (**strophe**) 434

D

d deletion (**humsed**) 310
Da Capos 188
Da Capos, expansion of (**thru**) 446-450
Dagomba dance 8
Dal Segnos 188

- diphthongs, representation of (**IPA) 91
 direction of bowing (**fret) 79,81
 direction of strumming (**fret) 79,81
 "Dirge-Canons" from *In Memoriam Dylan Thomas* 402
diss command 1
diss representation 64-65
 dissonance, representation of (**diss) 64-65
 dissonance, sensory 1
do (solfège) 431
 document modification description, reference records 33
 dollars-sign in command line 230
 Dorian mode 459
 dotted staff line 214
 double barlines 43
 double barlines, ending without (**proof**) 387
 double barlines, material following (**proof**) 387
 double barlines, number of (**kern) 236
 double barlines, representation of (**kern) 99
 double barlines, with pauses 43
 double beams, representation of (**kern) 97
 double quotes in command line 230
 double-flats, representation of (**kern) 96
 double-flats, representation of **deg 264
 double-flats, representation of **degree 268
 double-sharps, representation of (**kern) 96
 double-sharps, representation of **deg 264
 double-sharps, representation of **degree 268
 double-stops, create from separate spines 242
 Dowling, G. 424,520
 down-bows, representation of (**kern) 97
 down-stems, representation of (**kern) 97
 dramatic soprano voice 194
 drum, bass 197
 drum, snare 197
 drum, tom-tom 197
 dulcimer 194
 dulcimer, tablature representation 76
 duple meter 34
 duplicate section labels (**thru**) 448
dur representation 66-68
 duration names, American 98
 duration tokens, incoherent (**proof**) 387
 duration, eliminating fine details 451
 duration, time-base 220
 durationless notes, representation of (**kern) 98
 durations, records spanning equivalent 451-452
 durations, representation of (**dur) 66-68
 durations, representation of (**kern) 97
 durations, representation of (**recip) 134-136
 durations, representation of dotted (**kern) 98
 durations, representation of doubly-dotted (**kern) 98
 Dutch language 36
- edition release date, reference records 32
 editions, composite documents (**thru**) 446
 editor, stream (**humsed**) 310-313
 editorial footnote (**kern) 99
 editorial interpretation (**kern) 99
 editorial intervention (**kern) 99
 editorial signifier, "sic" (**kern) 99
 editorial signifier, *musica ficta* (**kern) 99
 editorial signifier, invisible symbol (**kern) 99
 egrep command (UNIX) 492
 electric bass guitar 194
 electric guitar 194
 electric piano, Fender-Rhodes 197
 electronic citation 35
 electronic citation, example of 35
 electronic documents, illegal 28
 electronic edition 28
 electronic edition version, reference records 33
 electronic editor, reference records 33
 electronic publisher checksum numbers 34-35,465-466
 electronic publisher, reference records 32
 elided phrases, representation of (**kern) 97
 elided slurs, representation of (**kern) 97
 eliminate duplicate barlines (**humsed**) 243
 elision 97,101
 Elliot, R. 523
embel representation 69-72
 embellishments, 2-3 retardation 70
 embellishments, 4-3 suspension 70
 embellishments, 7-6 suspension 70
 embellishments, 7-9 retardation 70
 embellishments, 9-8 suspension 70
 embellishments, accented lower neighbor 70
 embellishments, accented passing tone 70
 embellishments, accented upper neighbor 70
 embellishments, anticipation 70
 embellishments, appoggiatura 70
 embellishments, arpeggio tone 70
 embellishments, changing tone 70
 embellishments, chromatic lower neighbor 70
 embellishments, chromatic unaccented passing tone 70
 embellishments, chromatic upper neighbor 70
 embellishments, escape tone 70
 embellishments, lower neighbor tone 70
 embellishments, pedal point 70
 embellishments, repeated tone 70
 embellishments, representation of (**embel) 69-72
 embellishments, retardation 70
 embellishments, suspension 70
 embellishments, unaccented passing tone 70
 embellishments, upper neighbor tone 70
 emotional states 8
 empty files 304
encode command 1,269-279
 encoder of document, reference records 33
 encoding status, reference records 33
 end delimiter (for extracting material) 476
 end-of-file, control-D 228,397
 end-of-file, control-Z 228,397
eng, representation of phonetic (**IPA) 92

E

Ecole Notre Dame 34
ed command (UNIX) 492

INDEX

- english horn 195
English language 36,204
English language code 30
enhanced mode, Windows (**perform**) 379
ennunciation (*ennun) 162
ensemble 187
environment variable `AWK_VER` 398
era, representation of (**Zeit) 176-179
Erickson, R. 520
Es ist ein' Ros' entsprungen 481
ESC terminate **perform** 377,379
escape character () 230
escape character, regular expressions 493,503
escape tone (**embel) 70
esh, representation of phonetic (**IPA) 92
estimation of key (**key**) 328-331
Estonian language 36
eth, representation of phonetic (**IPA) 92
ethnomusicology 7
ex command (UNIX) 492
examples of regular expressions 499
exclamation marks 10
exclusive interpretations 10,303
exclusive interpretations, eliminate (**rid**) 408-410
expansion lists 188-189,219,436
expansion lists, definition of (**thru**) 447
expansion lists, duplicate labels (**thru**) 450
expansion lists, labelled (**thru**) 447
expansion lists, tandem interpretation 446
expansion lists, unlabelled (**thru**) 447
experimental stimulus 189
experimental subject 189
expr command (UNIX) 492
extended regular expression syntax 310
extended regular expressions 501,505
extended regular expressions, portability 311
extract -t, see **fields** command 286-289
extract specified bars (**yank**) 476-480
extract specified measures (**yank**) 476-480
extract specified passage (**yank**) 476-480
extract specified phrases (**yank**) 476-480
extract specified records (**yank**) 476-480
extract specified sections (**yank**) 476-480
extract strophic Humdrum data (**strophe**) 434-440
extract command 280-285
extract, field mode 280
extract, field-trace mode 280-281,286
extract, interpretation mode 280
extract, spine-path mode 280-281
extraction of parts (**extract**) 280-285
- Fantini, D. 521
female voice 193
Fender-Rhodes electric piano 197
- field mode (**extract**) 280
field-trace mode (**extract**) 280-281
fields command 286-289
- fife 195
figured bass, not used in **harm 86
file extension .cnt 237
file extension .cor 255
file extension .deg 261
file extension .dgr 265
file extension .frq 294
file extension .hmd 339,394
file extension .iv 321,373
file extension .krn 324
file extension .mac 332
file extension .met 335
file extension .mnt 298,345
file extension .nf 352,373
file extension .pc 369
file extension .pch 453
file extension .pcs 373
file extension .pf 381
file extension .pit 383
file extension .sem 415
file extension .sim 419
file extension .slg 431
file extension .sol 428
file extension .syn 442
file extension .tb 452
file extension .tr 458
file extension .urr 463
file extension .vox 467
file number, reference records 33
file, placement of reference records 35
file-read (**r**), **humsed** 310
file-write (**w**), **humsed** 310,312
files, amalgamate (**assemble**) 232-234
files, empty 304
files, general information (**census**) 235-236
files, general information (**veritas**) 465-466
files, verification of 465-466
fill command 290-293
`find_reg.awk` file 480
`findpair.awk` file 480
fingering, index finger (**fret) 79,81
fingering, little finger (**fret) 79,81
fingering, middle finger (**fret) 79,81
fingering, representation of fret (**fret) 79,81
fingering, representation of plucking finger (**fret) 79,81
fingering, ring finger (**fret) 79,81
fingering, thumb (**fret) 79,81
finite state machine, implemented as (**record**) 396
Finnish language 36,204
first publisher, reference records 32
five-line staff 214
fixed template mode (**simil**) 418
Flemish language 36

F

- F clef 185
fa (solfège) 431
fagotto 195
falsetto voice 194

Flottorp, G. 524
 flugelhorn 196
 flute; soprano, alto, bass 195
 footfalls 11
 form, fuga 34
 form, minuet and trio 189
 form, passacaglia 34
 form, reference records 34
 form, rondo 34,189
 form, rounded binary 34,188
 form, sonata-allegro 34,178,189
 formants, vowels (**IPA) 94
 format, abbreviated 188-189
 format, through-composed 188-189
 Forte, A. 124,321-322,352-353,373-375,381-382,520
 fortepiano 194,197
 forward string search (/), **perform** 377
 four-line staff 185,214
 frame, creation of contextual (**context**) 245
 French language 36,204
 French language code 30
 French lute tablatures 76
 French pitch notation (**solfg**) 431-433
 French pitch, representation of (**solfg) 145-148
freq command 294-296
freq representation 73-75
 frequency spectrum, representation of (**spect) 152-153
 frequency, fundamental 294-296
 frequency, representation of (**freq) 73-75
 frequency, translate to (**freq**) 294-296
 fret fingering, representation of (**fret) 79,81
 fret position, representation of (**fret) 79,81
 fret positions 76,81,190
 fret representation 76-84
 fretted tablatures, representation of (**fret) 76-84,190-191
frq file extension 294
Fuga 20 BWV 889b 13
 fuga, form 34
 full score, **assemble** 232-234
 functional harmony, representation of (**harm) 85-90
 fundamental frequency (**freq**) 294

G

g global substitution (**humsed**) 311
 G clef 185
 Gaelic language 36
 generate numbers (**num**) 354-358
 genre, barbershop quartet 34
 genre, opera 34
 genre, reference records 34
 genre, slendro 34
 genre, string quartet 34
 German language 36,204
 German language code 30

German lute tablatures 76
 German pitch notation (**tonh**) 453-456
 German pitch, representation of (**Tonh) 167-170
 Ghahraman, D. 320,524
 gittern 194
 Glasberg, B. 522
 global accidentals 202
 global comments 9,303
 global comments, eliminate (**rid**) 408-410
 global comments, eliminate null (**rid**) 408-410
 global comments, field-trace information 286
 global substitution (**g**), **humsed** 311
 Glockenspiel 197
 gong 197
 Gould, G. 188
 grace notes, representation of (**kern) 98
 great mean course 77
 Greek language 36
 green staff line 214
 Greenwood, D. 520
 grep command (UNIX) 26,34,397,492
 gres command (UNIX) 492
 groupettos, representation of (**kern) 98
 Guido d'Arezzo 27
 guitar 194
 guitar, 12-string tablature representation 76
 guitar, 6-string tablature representation 76
 guitar, bass; tablature representation 76
 guitar, riffs 7
Gute Nacht 31

H

Hall, P. 424,520
 hammer-on articulation (**fret) 80-81
 Hammond, organ 197
 Handel, G.F. 7
Happy Birthday 12
 harm representation 85-90
 harmonic intervals 184
 harmonic minor scale assumed (**deg**) 261
 harmonic minor scale assumed (**degree**) 265
 harmonic minor, use of (**harm) 85
 harmonic number 192
 harmonica 195
 harmonics 192
 harmonics, artificial (**fret) 78,81
 harmonics, natural (**fret) 78,81
 harmony, alternate (**harm) 87
 harmony, bi-tonal (**harm) 87
 harmony, explicit (**harm) 87
 harmony, functional (**harm) 87
 harmony, implicit (**harm) 87
 harmony, key areas (**harm) 86
 harmony, modulations (**harm) 86
 harmony, polytonal (**harm) 87
 harmony, representation of functional (**harm) 85-90

INDEX

- harmony, secondary dominants (****harm**) 86-87
harp 194
harpsichord 194,197
Harris, M. 524
hautbois 196
Hebrew language 36
Heise, G.A. 522
Heldentenor voice 194
help screens, Humdrum 230
Hendrix, J. 7
hertz (**freq**) 294
heterophony 34
Hewlett, W. 2,520-521
hexadecimal number 445
hichiriki 196
Hill, M. 12
Hill, P. 12
Hindi language 36,204
hint command 297-302
historical musicology 7
hmd file extension 339,394
Hoboken catalogue 32
Holst, G. 67,135
honorifics, encoding of names 27
horn 195
Horwood, F. 521
Howard, R. 2
humdrum command 303-309
Humdrum commands 225
Humdrum, MIDI commands 225
Humdrum, asterisks 10
Humdrum, basic commands 225
Humdrum, carriage returns 10
Humdrum, comments 9
Humdrum, data encoding (**encode**) 269-279
Humdrum, data records 9-10
Humdrum, data tokens 11
Humdrum, exclamation marks 10
Humdrum, exclusive interpretations 10
Humdrum, general file information 235-236,465-466
Humdrum, global comments 9
Humdrum, interpretation keyword 11
Humdrum, interpretations 9
Humdrum, local comments 9
Humdrum, multiple-stops 13
Humdrum, newlines 10
Humdrum, null tokens 10-11
Humdrum, period character 10
Humdrum, record separator 12
Humdrum, records 9
Humdrum, specialized commands 225
Humdrum, spine paths 15
Humdrum, spine-path terminator 11
Humdrum, spines 10
Humdrum, subtoken 13
Humdrum, subtoken separator 13
Humdrum, syntax 8-26,303-309
Humdrum, tabs 10
Humdrum, tandem interpretations 10
Humdrum, token/spine separator 12
- Humdrum, toolkit 8
Humdrum Toolkit version (**humver**) 314
Humdrum-extended regular expressions 501-502,505
humsed command 310-313,315,318
humver command 314
Hungarian Rhapsody No. 8 35
Hungarian language 36
hurdy-gurdy 194
Huron, D. 173,424,464,521,523-524
hypothesis testing 7

I

- i** insertion (**humsed**) 310
Icelandic language 36
idiophone instruments 199
illegal electronic documents 28
implied intervals, arising from multiple-stops 472
imprint information 32
index finger (****fret**) 79,81
information measure (**infot**) 315-320
information theory (**infot**) 315-320
information, self-information (**infot**) 315
Indian tabla bols 8
infot command 315-320
inner intervals 473
inner intervals, elimination of 473
insertion (**i**), **humsed** 310
instrument class 199
instrument, 'cello 194
instrument, Bratsche 195
instrument, Fender-Rhodes electric piano 197
instrument, Glockenspiel 197
instrument, Irish bagpipe 195
instrument, Scottish bagpipe 195
instrument, ūd 195
instrument, accordion 195,197
instrument, archlute 194
instrument, bagpipe — French 195
instrument, bagpipe — Irish 195
instrument, bagpipe — Scottish 195
instrument, banjo 194
instrument, bassoon 195
instrument, bell 197
instrument, biwa 194
instrument, calliope 195
instrument, carillon 197
instrument, castanets 197
instrument, celesta 197
instrument, cembalo 194,197
instrument, ch'in 194
instrument, chalumeau 195
instrument, chimes 197
instrument, cittem 194
instrument, clarinet — piccolo, soprano, alto, bass 195
instrument, clavecin 194,197
instrument, clavichord 194,197

INDEX

- instrument, concertina 195
instrument, contrabass 194
instrument, contrabassoon 195
instrument, contrafagotto 195
instrument, cor anglais 195
instrument, cornemuse 195
instrument, cornet 195
instrument, cornett 195
instrument, cornetto 195
instrument, crumhorn — see instrument, krumhorn 196
instrument, cymbal — crash 197
instrument, cymbal — finger 197
instrument, cymbal — ride 197
instrument, cymbal — splash 197
instrument, cymbals 197
instrument, drum — bass 197
instrument, drum — snare 197
instrument, drum — tom-tom 197
instrument, dulcimer 194
instrument, electric bass guitar 194
instrument, electric guitar 194
instrument, electric piano — Fender-Rhodes 197
instrument, english horn 195
instrument, fagotto 195
instrument, fife 195
instrument, flugelhorn 196
instrument, flute — soprano, alto, bass 195
instrument, fortepiano 194,197
instrument, gittern 194
instrument, gong 197
instrument, guitar 194
instrument, harmonica 195
instrument, harp 194
instrument, harpsichord 194,197
instrument, hautbois 196
instrument, hichiriki 196
instrument, horn 195
instrument, hurdy-gurdy 194
instrument, kōmun'go 194
instrument, kit 194
instrument, kokyū 194
instrument, koto 194
instrument, krumhorn — soprano, alto, tenor, bass 196
instrument, lute 194
instrument, mandolin 194
instrument, maracas 197
instrument, marimba 197
instrument, nōkan 196
instrument, oboe 196
instrument, oboe d'amore 196
instrument, ocarina 196
instrument, organ — Hammond 197
instrument, organ — pipe 196-197
instrument, organ — portative 196-197
instrument, organ — reed 196-197
instrument, panpipe 196
instrument, pianoforte 194,197
instrument, piatti 197
instrument, piccolo 196
instrument, pipa 194
instrument, pipe organ 196-197
instrument, portative organ 196-197
instrument, psaltery 194
— instrument, qin 194
instrument, racket 196
instrument, rebec 194
instrument, recorder — sopranino, soprano, alto, tenor, bass 195
instrument, reed organ 196-197
instrument, sarod 194
instrument, sarrusophone 196
instrument, saxhorn — soprano, alto, tenor, baritone, bass, contrabass 196
instrument, saxophone — sopranino, soprano, alto, tenor, baritone, bass, contrabass 196
instrument, shakuhachi 196
instrument, shamisen 195
instrument, shawm — soprano, alto, tenor 195
instrument, sheng 196
instrument, sho 196
instrument, sitar 195
instrument, steel-drum 197
instrument, synthesizer 198
instrument, tablā 197
instrument, tambūrā 195
instrument, tambourine 197
instrument, tanbur 195
instrument, theorbo 195
instrument, timpani 197
instrument, timpanny 197
instrument, triangle 197
instrument, trombone — tenor, bass 196
instrument, trumpet 196
instrument, tuba 196
instrument, ukulele 195
instrument, vīnā 195
instrument, vibraphone 197
instrument, viola 195
instrument, viola d'amore 195
instrument, viola da gamba — treble, tenor, bass 195
instrument, violin 195
instrument, violoncello 194
instrument, xylophone 197
instrument, zūrnā 196
instrument, zither 195
instrumentation 26
instrumentation, reference records 34
instruments 193-198
instruments, "voice" 199
instruments, brass 199
instruments, classification of 199
instruments, idiophone 199
instruments, keyboard 199
instruments, names of 193-198
instruments, number of 187
instruments, percussion 199
instruments, string 199
instruments, transposing 221
instruments, woodwind 199
integrate data types (**cleave**) 243

INDEX

interface, MIDI card 269,376,394,396
International Phonetic Alphabet, representation of 91-95
interpretation keyword 11
interpretation mode (**extract**) 280
interpretation, tandem — *ITr 460
interpretation, tandem — *I 34
interpretation, tandem — *Tr 459-460
interpretation, tandem — *[a-gA-G] [--+] * : 461
interpretation, tandem — *k [] 461
interpretation, tandem — key 461
interpretation, tandem — key signature 461
interpretation, tandem — transposition 459-460
interpretations 9,303
interpretations, eliminate (**rid**) 408-410
interpretations, eliminate exclusive (**rid**) 408-410
interpretations, eliminate null (**rid**) 408-410
interpretations, eliminate null tandem (**rid**) 408-410
interpretations, eliminate tandem (**rid**) 408-410
interpretations, number of 236
interval vector 373-375
interval vector (**iv**) 321-322
intervals, arising from multiple-stops 472
intervals, doubly-augmented (**harm) 86-87
intervals, doubly-diminished (**harm) 86-87
intervals, elimination of inner 473
intervals, harmonic 184
intervals, harmonic (**hint**) 297-302
intervals, harmonic (**ydelta**) 481-483
intervals, inner 473
intervals, melodic (**mint**) 345-351
intervals, melodic (**xdelta**) 469-475
intervals, permuted 473
intervals, permuted harmonic 184
intervals, pitch 297-302,321-322,345-351,469-475,481-483
Inuitiuk language 12
Inventio 1 BWV 772 107
Inventio 8 BWV 779 256
inversion of row (**reihe**) 399-403
inverted mordents, representation of (**fret) 80-81
inverted mordents, representation of (**kern) 97
inverted mordents, semitone (**fret) 80-81
inverted mordents, whole tone (**fret) 80-81
inverted turns, representation of (**fret) 80-81
invisible staff line 214
invisible symbol, editorial signifier (**kern) 99
ipa file extension 92
IPA representation 91-95
irregular durations, representation of (**kern) 98
irregular meter indications 206
irregular meters 26,34
Ishizaki, M. 1
isolate data, **extract** 280
Italian language 29,36,204
Italiano, language 29
iv command 321-322
iv file extension 321,373

J

— Japanese language 27,36,204
Japanese language code 30
Javanese language 36
Javanese-Indonesian names 27
Johnson-Laird, P. 1,171,173,462,464,522
joining sections (**thru**) 449
Josquin des Prez 27

K

Kameoka, A. 1,64-65,522
kern command 323-327
kern regular expressions, examples of 500
kern representation 96-106
Kernighan, B. 519-520
Kessler, E. 328,331,522
key context (**harm) 85
key context, undefine (**harm) 85
key indication, missing (**proof**) 387
key signatures, global accidentals 202
key signatures, missing (**proof**) 387
key signatures, pitch-class 202
key signatures, pitch-height 202
key signatures, precautionary 202-203
key signatures, tandem interpretation 15,202-203
key tandem interpretation 200-201
key, atonal 200
key, estimate of (**key**) 328-331
key, major 200
key, minor 200
key, tandem interpretation 461
key, undefined 200
key, unknown 200
key command 328-331
keyboard instruments 199
keyboard synthesizer 198
keys, tandem interpretation 15
keywords in character classes 499
Kipp, N. 523
Kirshenbaum, E. 91,95
kit 194
Klangfarbenmelodie 367
Klavierstück opus posthumous 168,400
Kliewer, V. 520
Kochan, S. 522
Köchel catalogue 32
kokyū 194
kōmun'go 194
Korean language 36
koto 194
Krumhansl, C. 328,331,522
krumhorn; soprano, alto, tenor, bass 196
krn file extension 99,324
Kuriyagawa, M. 1,64-65,522

Kurkela, K. 522

L

Landowska, W. 188

la (solfège) 431

language code, English 30

language code, French 30

language code, German 30

language code, Japanese 30

language of original text, reference records 29

language text, representation of (**text) 160-164

language, Albanian 35

language, Arabic 35

language, Armenian 35

language, Azeri 35

language, Bengali 36,204

language, Bulgarian 36

language, Cambodian 36

language, Cantonese 36

language, Croatian 36,204

language, Czech 36,204

language, Danish 36,204

language, Dutch 36

language, English 36,204

language, Estonian 36

language, Finnish 36,204

language, Flemish 36

language, French 36,204

language, Gaelic 36

language, German 36,204

language, Greek 36

language, Hebrew 36

language, Hindi 36,204

language, Hungarian 36

language, Icelandic 36

language, Italian 36,204

language, Japanese 36,204

language, Javanese 36

language, Korean 36

language, Latin 36,204

language, Latvian 36

language, Lithuanian 36

language, Malayalam 36

language, Mandarin 36,204

language, Mongolian 36

language, Norwegian 36,204

language, Polish 36,205

language, Portugese 36,205

language, Romanian 36,205

language, Russian 36,205

language, Serbian 36,205

language, Slovak 36

language, Slovenian 36

language, Spanish 36,205

language, Swahili 36,205

language, Swedish 36,205

language, Tamil 36

language, Thai 36

language, Tibetan 36

language, Turkish 37

language, Ukranian 37

language, Urdu 37,205

language, Vietnamese 37

language, Welsh 37

language, Xhosa 37,205

language, Zulu 37,205

languages, tandem interpretation 204-205

last segment in input (**yank -r \$**) 476

lateral vibrato (**fret) 80-81

Latin language 36,204

Latvian language 36

leading-tone, doubling of 7

leading-tone, encoding of (**deg**) 261

leading-tone, encoding of (**degree**) 265

Le sacre du printemps 30

Lee, C.S. 156,441,444,522

let ring (**fret) 78,81

Levelt, W.J.M. 523

Liberace 27

librarians, music 7

librettist, reference records 29

libretto, representation of (**text) 160-164

linear correlation (**correl) 49-50

link all pitches in a measure 245

Liszt, Franz 35

literals, regular expressions 492,503

Lithuanian language 36

local comments 9,303

local comments, eliminate (**rid**) 408-410

local comments, eliminate null (**rid**) 408-410

local comments, field-trace information 286

logical OR, regular expressions 497,504

longest match-max priority, regular expressions 496

Longuet-Higgins, H.C. 156,441,444,522

lower neighbor tones (**embel) 70

lowered roots (**harm) 85,87

lowered seventh degree (**deg**) 261

lowered seventh degree (**degree**) 265

lute 194

lute, French tablatures 76

lute, German tablatures 76

lute, tablature representation 76

lyric soprano voice 194

lyric tenor voice 194

lyricist, reference records 29

lyrics, representation of (**text) 160-164

M

m-dependency analysis (**infot**) 315

mac file extension 332

Madonna 27,29

Malayalam language 36

INDEX

male voice 193
man command (UNIX) 231
Mandarin language 36,204
mandolin 194
mandoline, tablature representation 76,78,81
mandore, tablature representation 76
manual, on-line 231
manuscript acknowledgement, reference records 32
manuscript location, reference records 32
manuscript source, reference records 32
maracas 197
marimba 197
Martinů, B. 189
Mashinter, K. 1
m-dependency analysis (**infot**) 315
measure durations, incoherent (**proof**) 387
measure numbers 44
measure numbers, alternate 44
measure numbers, consistency of (**proof**) 387
measure, information (**infot**) 315-320
measure, link all pitches in 245
measures numbers, incrementing (**record**) 394
measures, extract specified (**yank**) 476-480
measures, numbering of (**num**) 354-358
measures, renumbering of (**num**) 354-358
mediant, encoding of (**solfá**) 427
medius finger (**fret) 79,81
melac command 332-333
melac representation 107-109
melodic accent (**melac**) 332-333
melodic accent, representation of (**melac) 107-109
melodic interval, representation of (**mint) 116-118
melodic, arch 7
Mendelssohn, Felix 27
met file extension 335
metacharacters in regular expressions 498,501
meter signature, tandem interpretation 15
meter signatures 206-207
meter signatures, missing (**proof**) 387
meter, irregular 34
meter, metric position (**metpos**) 334-338
meter, unannounced changes of (**proof**) 387
meters 206-207
meters, ametric 206
meters, irregular 206
meters, unknown 206
metpos command 334-338
metpos representation 110-112
metric accent, determine (**metpos**) 334-338
metric classification, reference records 34
metric hierarchy, (**urhythm**) 462
metric position, determine (**metpos**) 334-338
metric position, representation of (**metpos) 110-112
metric syncopation 7
metric syncopation (**synco**) 441-444
metronome markings (**perform**) 379
metronome setting 217-218
mezzo soprano voice 193
mi (solfège) 431
Microsoft Windows (**perform**) 379
MIDI 339-344,376-380,394-396,425-426,445
MIDI card address 379,395,445
MIDI card, MPU-410 compatible 269,376,394,396
MIDI channel 208
MIDI channel (**midi**) 341
MIDI clock ticks (**record**) 395
midi command 1,339-343
MIDI default clock ticks (**midi**) 341
MIDI key velocity (**midi**) 342
MIDI multiple-stops (**midi**) 341
MIDI playback 376-377,394
MIDI quantizing (**record**) 395
MIDI synthesizer 376-377,394
MIDI tools 1
MIDI, all-notes-off 445
MIDI, controller card 344
MIDI, data encoding from (**encode**) 269-279
MIDI, format 0 files 426
MIDI, library functions 344,380,396,426,445
MIDI, performance 30
MIDI, record input 394-396
MIDI, representation of (**MIDI) 113-115
MIDI, reset 344,445
MIDI, sound output 376-380,425-426
MIDI representation 113-115
midreset command 344
Mikrokosmos No. 121 335
Miller, G.A. 522
min-max repetition, regular expressions 495,503
minimalist, style 34
minor scale — harmonic minor assumed (**deg**) 261
minor scale — harmonic minor assumed (**degree**) 265
minor, use of harmonic (**harm) 85
mint command 345-351
mint representation 116-118
minuet and trio 189
Miranda, E. 524
missing strophes 437
mnt file extension 298,345
mode insensitivity (**solfá) 142
mode insensitivity (**solfá**) 427
mode, Aeolian 458
mode, Dorian 459
modification description, reference records 33
modulations (**harm) 86
Moles, A. 315,320,522
Mongolian language 36
Moore, B. 522
mordents ornament (**fret) 80-81
mordents, representation of (**kern) 97
mordents, representation of inverted (**kern) 97
mordents, semitone (**fret) 80-81
mordents, whole tone (**fret) 80-81
Mortice Kern Systems, Inc. 2,522
movement number, reference records 31
Mozart, W.A. 7
MPU-410 compatible MIDI card 269,376,394,396
multiple-stops 13
multiple-stops (**rend**) 406
multiple-stops (**ydelta**) 483

multiple-stops (**record**) 395
 multiple-stops, MIDI (**midi**) 341
 multiple-stops, create from separate spines 241-242
 multiple-stops, create from successive records (**context**) 247
 multiple-stops, implied intervals 472
 multiple-stops, incoherent durations (**proof**) 387
 multiple-stops, number of 236
 Music Quest, Inc. 344,380,396,426,445
musica ficta, editorial signifier (**kern) 99
 musicals 31
 Muzak 29

N

Nettheim, N. 522
 Newcomb, S. 522-523
 Newcomb, V. 523
 name, composer's 26
 named strophe label 215-216
 names, Javanese-Indonesian 27
 names, aliases 27
 names, anonymous 27
 names, corporate 27
 names, family name 27
 names, honorifics 27
 names, initials 27
 names, of popular groups 27
 names, stage names 27
 nasals, representation of (**IPA) 91
 nationality, reference records 29
 natural harmonics (**fret) 78,81
 naturals (**kern) 96
 neighbor tones, lower (**embel) 70
 neighbor tones, upper (**embel) 70
 nested parentheses, regular expressions 504
 nested phrases, representation of (**kern) 97
 nested slurs, representation of (**kern) 97
 newlines 10
 next measure (+), **perform** 378
 next measure (=), **perform** 378
nf command 352-353
nf file extension 352,373
 no clef 185
 nōkan 196
 nominal duration, representation of (**recip) 134-136
 non-Humdrum output (**thru**) 449
 non-Humdrum output, possible (**extract**) 281,283
 non-Humdrum output, problem of (**cleave**) 244
 non-Western fretted instruments 76
 non-chordal tones, representation of (**embel) 69-72
 non-numeric strophe labels (**strophe**) 437
 non-pitch-related signifiers (**tonh -x**) 456
 Noorden, L. van 523
 North Indian tabla bols 8
 normal form, determine (**nf**) 352-353
 Norwegian language 36,204

note, highest (**kern) 236
 note, longest (**kern) 236
 note, lowest (**kern) 236
 note, reference records 35
 note, shortest (**kern) 236
 "note," prototype (**urhythm**) 462
 notes, number of (**kern) 236
 notes, number of concurrent (**kern) 236
 notes, numbering of (**num**) 354-358
 notes, representation of (**kern) 96
 null comments, eliminate (**rid**) 408-410
 null data records, eliminate (**rid**) 408-410
 null global comments, eliminate (**rid**) 408-410
 null interpretations, eliminate (**rid**) 408-410
 null interpretations, eliminate tandem (**rid**) 408-410
 null local comments, eliminate (**rid**) 408-410
 null records, eliminate data (**rid**) 408-410
 null string as delimiter (**cleave**) 241
 null tandem interpretations, eliminate (**rid**) 408-410
 null tokens 10,303
 null tokens, **fill** with data 290-293
 null tokens, number of 236
 null tokens, padding output with (**context**) 246
num command 354-358
 number (**num**) 354-358
 number of concurrent instruments 187
 number, reference records 31
 number.awk file 480
 numerical differences 469-475,481-483
 numerical strophe label 215-216

O

oboe 196
 oboe d'amore 196
 ocarina 196
 octave number, encoding of (**degree**) 265
 offset values (**xdelta**) 469
 offset values, elimination of 469,473
 on-line manual 231
 one-line staff 214
 open beams, representation of (**kern) 97
 open strings, representation of 76,81
 opera, genre 34
 operas 31
 Opolko, F. 523
 opus number, reference records 31
 OR, regular expressions 497,504
 orchestrator, reference records 29
 order, representation of sequential (**ordo) 119-120
 ordinal range specification 476
 ordo representation 119-120
 organ, Hammond 197
 organ, pipe 196-197
 organ, portative 196-197
 organ, reed 196-197
 original copyright year, reference records 33

INDEX

- original document owner, reference records 33
original document, reference records 32
original language, reference information 27
ornaments, Wagnerian turns (**fret) 80-81
ornaments, incoherent (**proof**) 387
ornaments, inverted mordents (**fret) 80-81
ornaments, inverted turns (**fret) 80-81
ornaments, mordents (**fret) 80-81
ornaments, representation of (**kern) 96-97
ornaments, representation of generic (**kern) 97
ornaments, representation of inverted mordents (**kern) 97
ornaments, representation of inverted turns (**kern) 97
ornaments, representation of mordents (**kern) 97
ornaments, representation of trills (**kern) 97
ornaments, representation of turns (**kern) 97
ornaments, trills (**fret) 80-81
ornaments, turns (**fret) 80-81
Orpen, K. 1,424,523
Othello 34
orthographic information 96
ossia passages, *strophe 24,434
ossia strophe label 215
“other,” prototype (**urhythm**) 463
Ottman, R.W. 523
oud, tablature representation 76
Overill, R.E. 523
overlay 209
overlay, text 164,209
- P**
- p** panic MIDI reset (**perform**) 377
P power panic MIDI reset (**perform**) 377
panic (power) MIDI reset (**P**), **perform** 377
panic MIDI reset (**p**), **perform** 377
panpipe 196
parenthese (**fill**) 290
parentheses, regular expressions 494,504
Parncutt, R. 521,523
part extraction (**extract**) 280-285
partial beams, representation of (**kern) 97
passacaglia, form 34
Passacaglia on DSCH 27
passage, extract specified (**yank**) 476-480
passing tone, unaccented (**embel) 70
paste command (UNIX) 232
Pathetique Sonata 30
patt command 359-364,368
pattern matching (**patt**) 359-364
pattern matching (**pattern**) 365-368
pattern matching (**regexp**) 397-398
pattern, search for (**patt**) 359-364
pattern, search for (**pattern**) 365-368
pattern command 364-368,506
pauses, representation of (**kern) 97,99
pc command 369-372
pc file extension 369
pc representation 121-124
pch file extension 453
pc set command 373-375
pcset representation 125-129
Pearson’s correlation coefficient (**correl) 49-50
Pearson’s correlation coefficient (**correl**) 254
pedal point (**embel) 70
pelog tuning 132
Perahia, M. 448
percussion instruments 199
perform command 1,376-380
perform terminate (**ESC**) 377
perform, proper termination of 379
performance information 30
performance practice 98
performance, different versions (**thru**) 446
performer’s name, reference records 30
period of time, representation of (**Zeit) 176-179
period, Baroque 34
period, reference records 34
permuted intervals 473
pf command 381-382
pf file extension 381
pg command (UNIX) 492
phonemes, modifiers (**IPA) 91
phonemes, representation of (**IPA) 91
phonetics, consonants (**IPA) 91
phonetics, diphthongs (**IPA) 91
phonetics, eng (**IPA) 92
phonetics, esh (**IPA) 92
phonetics, eth (**IPA) 92
phonetics, formant (**IPA) 94
phonetics, nasals (**IPA) 91
phonetics, representation of (**IPA) 91-95
phonetics, schwa (**IPA) 92
phonetics, thorn (**IPA) 92
phonetics, vowels (**IPA) 91
phonetics, yogh (**IPA) 92
phrase marks, incoherent (**proof**) 387
phrases, extract specified (**yank**) 476-480
phrases, number of notes in (**num**) 357
phrases, numbering of (**num**) 354-358
phrases, pair first and last notes in 245
phrases, representation of (**kern) 96-97
phrases, representation of elided (**kern) 97,101
phrases, representation of nested (**kern) 97
piano fingerings 8
piano, Fender-Rhodes electric 197
pianoforte 194,197
piatti 197
piccolo 196
pick-up passages, extraction of 478
Pinying, Chinese transliteration 27,204
pipa 194
pipe organ 196-197
pipe, UNIX 229
pipeline, UNIX 229
pit file extension 383

- pitch bending (**fret) 80-81
 pitch tokens, incoherent (**proof**) 387
 pitch, ANSI standard 383
 pitch, French (**solfg**) 431-433
 pitch, German (**tonh**) 453-456
 pitch, **kern 96
 pitch, cents 237-239
 pitch, deg 261-264
 pitch, degree 265-268
 pitch, freq 294-296
 pitch, kern 323-327
 pitch, midi 339-343
 pitch, pcset 373-375
 pitch, pitch 383-386
 pitch, semits 415-417
 pitch, solfa 427-430
 pitch, absolute 96
 pitch, accent (**melac**) 332-333
 pitch, bending of (**fret) 80-81
 pitch, contour accent (**melac**) 332-333
 pitch, diatonic (deg) 261-264
 pitch, diatonic (degree) 265-268
 pitch, diatonic (solfa) 427-430
 pitch, interval 297-302,321-322,345-351,469-475,481-483
 pitch, normal form 373-375
 pitch, pitch-class pc 369-372
 pitch, representation of (**pitch) 130-133
 pitch, transposition (**trans**) 457-461
 pitch-class 369-372
 pitch-class set 373-375
 pitch-class sets, representation of (**pcset) 125-129
 pitch-class, sequential partitioning 245,252
 pitch-classes, representation of (**pc) 121-124
pitch command 383-386
 pitch representation 130-133
 pitches, concurrent 297-302,481-483
 pitches, determine number of concurrent 467-468
 pitches, number of concurrent (**vox#) 174-175
 pitches, sequential 345-351,469-475
 pizzicato, plucked (**fret) 78,81
 pizzicato, representation of (**kern) 97
 place of first publication, reference records 32
 place of performance, reference records 30
 placement of reference records 35
The Planets 67,135
 play MIDI 376
 playback, MIDI 376-377,394
 Plomp, R. 523
 plucked pizzicato (**fret) 78,81
 plucked ponticello (**fret) 78,81
 plucked string (**fret) 78,81
 plucked sul tasto (**fret) 78,81
 plucked tremolo (**fret) 78,81
 Polish language 36,205
 pollex finger (**fret) 79,81
 ponticello bowing (**fret) 78,81
 ponticello, plucked (**fret) 78,81
 popular title, reference records 30
 portability, extended regular expressions 311
 portable organ 196-197
 Portuguese language 36,205
 position of staves within a system 213,215-216
 - POSIX standard 33,465
 power panic MIDI reset (P), **perform** 377
 Praetorius 481
 Prather, R. 523
 pre-defined representations 12
 precautionary accidentals, missing (**proof**) 387
 precision (cents -p) 237-238
 precision (correl -p) 255
 precision (freq -p) 294
 precision (semits -p) 415
 precision, default (cents) 238
 precision, default (correl) 255
 precision, default (freq) 295
 precision, default (semits) 416
 Prelude to *Tristan und Isolde* 117
 prime form, determine (**pf**) 381-382
 prime row (**reihe**) 399-403
 Prime, T. 1
 probabilities, long term (**infot**) 315
 programming language 8
 proof listening (**perform**) 376-380
proof command 387-388
 psaltery 194
 psychomusicology 7
 publication status, reference records 32
 publisher's catalogue number, reference records 32
 publisher, reference records 32
 pull-off articulation (**fret) 80-81

Q

- qin 194
 quadruple meter 34
 quantizing, MIDI (**record**) 395
 question mark, undefined value (**correl**) 260
 question-mark in command line 230
 quintuple meter 34
 quintuplet durations, representation of (**kern) 98
 quintus finger (**fret) 79,81
 quotation marks in command line 230

R

- r** file-read (**humsed**) 310
 Racinsky, T. 1
 racket 196
 Rahn, J. 124,322,353,375,382,523
 raised roots (**harm) 85,87
 raised seventh degree (deg) 261
 raised seventh degree (degree) 265
 randomize order of data records (**scramble**) 411-414

INDEX

- randomize order of data tokens (**scramble**) 411-414
rasgado strumming (**fret) 79,81
Rastall, R. 523
ré (solfège) 431
rebec 194
recip representation 134-136
reciprocal duration, representation of (**recip) 98,134-136
recitativo voice 194
recode command 389-393
record repetition, regular expressions 502,505
record-count metacharacter 365-366
record command 1,394-396
recorder; soprano, soprano, alto, tenor, bass 195
recording log 178
records, amalgamate (**context**) 245-253
records, congeal (**context**) 245
records, eliminate data (**rid**) 408-410
records, eliminate null data (**rid**) 408-410
records, extract specified (**yank**) 476-480
records, number of 236
records, number of data 236
records, randomize order (**scramble**) 411-414
records, spanning equivalent durations 451-452
red staff line 214
redundancy (**infot**) 318
reed organ 196-197
reference codes, several on a single record 27
reference information, files 26
reference information, original language 27
reference records 26-37
reference records, ASCII language setting 34
reference records, act number 31
reference records, alias/stage name 29
reference records, alternative title 30
reference records, analytic information 28,34
reference records, arranger 29
reference records, associated works 34
reference records, attributed composers 28
reference records, authorship information 28
reference records, checksum validation number 33,465-466
reference records, commission 31
reference records, composer's dates 29
reference records, composer's name 28
reference records, composer's nationality 29
reference records, conductor's name 30
reference records, copyright date 32
reference records, copyright information 28,32
reference records, copyright message 32
reference records, copyright owner 32
reference records, corporate composers 29
reference records, country of composition 31
reference records, country of copyright 32
reference records, date encoded 35
reference records, date of composition 31
reference records, date of first performance 30
reference records, date of first publication 32
reference records, date of performance 30
reference records, dedication 31
reference records, document modification description 33
reference records, edition release date 32
reference records, electronic edition version 33
reference records, electronic editor 33
reference records, encoder of document 33
reference records, encoding status 33
reference records, file number 33
reference records, first publisher 32
reference records, form 34
reference records, genre 34
reference records, imprint information 28,32
reference records, instrumentation 34
reference records, language of original text 29
reference records, librettist 29
reference records, lyricist 29
reference records, manuscript acknowledgement 32
reference records, manuscript location 32
reference records, manuscript source 32
reference records, metric classification 34
reference records, movement number 31
reference records, note 35
reference records, number 31
reference records, opus number 31
reference records, orchestrator 29
reference records, original copyright year 33
reference records, original document 32
reference records, original document owner 33
reference records, performance information 28,30
reference records, performer's name 30
reference records, period 34
reference records, place of first publication 32
reference records, place of performance 30
reference records, placement of 35
reference records, popular title 30
reference records, publication status 32
reference records, publisher 32
reference records, publisher's catalogue number 32
reference records, representation information 28,34
reference records, scene number 31
reference records, scholars' catalogue 32
reference records, style 34
reference records, suspected composer 28
reference records, suspected performer 30
reference records, title 30
reference records, title note 31
reference records, title of parent work 30
reference records, translated title 30
reference records, translator 29
reference records, user-defined signifiers 34
reference records, volume 31
reference records, warning 35
reference records, work identification information 28,30
refrains 188
refrains, through-composed expansions (**thru**) 446
regexp command 397-398
reggae, style 34
regular expression matching 359-368,397-398
regular expression tester (**regexp**) 397-398
regular expressions, Humdrum-extended 501-502,505
regular expressions, **kern 500

- regular expressions, accidentals 500
- regular expressions, anchors 496,503
- regular expressions, barlines 500
- regular expressions, basic 501,505
- regular expressions, character classes 497-498,504
- regular expressions, context 496,503
- regular expressions, diatonic pitch 500
- regular expressions, dotted durations 500
- regular expressions, durations 500
- regular expressions, escape character 493,503
- regular expressions, examples of 499
- regular expressions, extended 501,505
- regular expressions, extended syntax 310
- regular expressions, literals 492,503
- regular expressions, logical OR 311,497,504
- regular expressions, longest match priority 496
- regular expressions, min-max repetition 495,503
- regular expressions, nested parentheses 504
- regular expressions, one-or-more 311
- regular expressions, parentheses 494,504
- regular expressions, phrases 500
- regular expressions, record repetition 502,505
- regular expressions, repetition operators 493,503
- regular expressions, rests 500
- regular expressions, simplifying 102
- regular expressions, syntax 492
- regular expressions, wild cards 493,503
- regular expressions, zero-or-more 311
- rehearsal order 189
- reihe** command 399-403
- relative amplitude, representation of (**dB) 56-57
- relative scale degree, representation of (**deg) 58-60
- Renaissance period (**Zeit) 178
- rend** command 404-407
- renumbering (**num**) 354-358
- repeat measure (-), **perform** 378
- repeat measure (,), **perform** 378
- repeated measures, warning of (**proof**) 387
- repeated passages 436
- repeated signifiers (**kern) 101
- repeated tone (**embel) 70
- repeats, through-composed expansions (**thru**) 446
- repetition operators, regular expressions 493,503
- repetitions, expansion of (**thru**) 446-450
- representation information 34-35
- representation summary, (**IPA) 92
- representation summary, (**kern) 99
- representation, **IPA 91-95
- representation, **MIDI 113-115
- representation, **Tonh 167-170
- representation, **URrhythm 171-173
- representation, **Zeit 176-179
- representation, **cents 46-48
- representation, **correl 49-50
- representation, **dB 56-57
- representation, **date 51-55
- representation, **deg 58-60
- representation, **degree 61-63
- representation, **diss 64-65
- representation, **dur 66-68
- representation, **embel 69-72
- representation, **freq 73-75
- representation, **fret 76-84,190-191
- representation, **harm 85-90
- representation, **kern 96-106
- representation, **melac 107-109
- representation, **metpos 110-112
- representation, **mint 116-118
- representation, **ordo 119-120
- representation, **pc 121-124
- representation, **pcset 125-129
- representation, **pitch 130-133
- representation, **recip 134-136
- representation, **semits 137-139
- representation, **simil 140-141
- representation, **simxrf 419
- representation, **solffa 142-144
- representation, **solfq 145-148
- representation, **specC 149-151
- representation, **spect 152-153
- representation, **synco 154-156
- representation, **takt 157-159
- representation, **text 160-164
- representation, **time 165-166
- representation, **vox# 174-175
- representation, fret 190-191
- representation, hint 184
- representation, recip 206
- representation, strophic (**strophe**) 434-440
- representations, pre-defined 12
- reset MIDI 445
- reset MIDI card 344
- rests, number of (**kern) 236
- rests, numbering of (**num**) 354-358
- rests, representation of (**kern) 98
- retardation (**embel) 70
- retardation, 2-3 (**embel) 70
- retardation, 7-8 (**embel) 70
- retrieving files 26
- retrograde of row (**reihe**) 399-403
- retrograde-inversion of row (**reihe**) 399-403
- rhythmic prototype, representation of (**URrhythm) 171-173
- rhythmic prototypes, characterize 462-464
- Riemenschneider, A. 523
- rid** command 408-410,501
- ripieno 187
- Roland MPU-410 MIDI card 269,376,394,396
- Roman alphabet 27
- Roman numerals, use of (**harm) 85,87
- Romanian language 36,205
- Romanticism period (**Zeit) 178
- rondo form 189
- rondo, form 34
- round-off (**cents**) 238
- round-off (**freq**) 295
- round-off (**pc**) 370
- round-off (**semits**) 416
- rounded binary form 188
- rounded binary, form 34

INDEX

row cyclic rotation (**reihe**) 399-403
row inversion (**reihe**) 399-403
row retrograde (**reihe**) 399-403
row retrograde-inversion (**reihe**) 399-403
row transposition (**reihe**) 399-403
Rowell, L. 520
ruber staff line 214
Russian language 29,36,205
Irusski, language 29

S

s substitute (**humsed**) 310
Le sacre du printemps 30
Salve Regina 7
sample filename aeolian 458
sample filename bebop 312
sample filename berg 375
sample filename bigband 312
sample filename boulez 375
sample filename bwv779 257
sample filename chopin 340
sample filename density 249
sample filename dixieland 312
sample filename dorian 459
sample filename dvorak 476
sample filename faure 479
sample filename franck 477
sample filename fugue 479
sample filename ginastera 477
sample filename goldberg 478
sample filename guitar 458
sample filename haydn08 478
sample filename hendrix 282
sample filename hildegard 280
sample filename holst 282
sample filename igor 402-403
sample filename jellyroll 311
sample filename joplin 477
sample filename katsumi 240
sample filename koto 357
sample filename lassus 280
sample filename mahler 478
sample filename messiaen 479
sample filename milhaud 458
sample filename minuet 479
sample filename moonlight 458
sample filename mossolov 282
sample filename opus24 322,353,382
sample filename patrie 391-392
sample filename praetorius 482
sample filename ragtime 311
sample filename rebec 358
sample filename ricercar 479
sample filename sarod 358
sample filename sibelius 282
sample filename siegfrd.idl 340

sample filename sinfonia 479
sample filename song01 405
sample filename stamitz 480
- sample filename swing 312
sample filename verdi 477
sample filename waltz 479
sample filename webern 400-401,479
sample filename wieck 477
sample section label Coda 480
sample section label First Theme 478
sample section label bridge 478
sample section label coda 478
sample section label exposition 478
sample section label minuet 478
sample section label second ending 478
sample section label trio 478
Sandell, G. 1,524
sarod 194
sarrusophone 196
Sax, A. 178
saxhorn; soprano, alto, tenor, baritone, bass, contrabass 196
saxophone; sopranino, soprano, alto, tenor, baritone, bass, contrabass 196
scale degree, (**solfá**) 427-430
scale degree, absolute (**degree**) 265-268
scale degree, relative (**deg**) 261-264
scale degree, representation of (**deg) 58-60
scale degree, representation of (**degree) 61-63
scene number, reference records 31
scholars' catalogue, reference records 32
Schenkerian graphs 8
Schoenberg, A. 122
Schubert lyrics 7
Schubert, Franz 31
Schubert, Franz 24,31,434,436
Schumann, Robert 27
schwa, representation of phonetic (**IPA) 91-92
scordatura 190
scramble order of data records 411-414
scramble order of data tokens 411-414
scramble command 411-414
search for pattern (**patt**) 359-364
search for pattern (**pattern**) 365-368
search for pattern (**regexp**) 397-398
second derivative 469
second endings, through-composed expansions (**thru**) 446
section labels 188,210-211,219,436,478
section labels (**strophe**) 435
section labels, definition of (**thru**) 446
section labels, duplicate (**thru**) 448
section labels, extract according to 476
section labels, tandem interpretation 446
sections, definition of (**thru**) 446
sections, extract specified (**yank**) 476-480
sections, joining of (**thru**) 449
security, checksum validation number 34-35,465-466
sed command (UNIX) 310,492
Seewann, M. 524

- segregate signifiers (**rend**) 404-407
 self-information (**infot**) 315
 Selfridge-Field, E. 2,520-521
 sem file extension 415
 semantic information 96
 semitone mordents, representation of (**kern) 97
 semitone trills, representation of (**kern) 97
 semitones 415-417
 semitones, representation of (**semits) 137-139
semits command 415-417
 semits representation 137-139
 sequential events 9
 sequential numeric differences 469-475
 sequential order, representation of (**ordo) 119-120
 Serafini, S. 1
 Serbian language 36,205
 serial music 34
 set variants (**reihe**) 399-403
 seventh degree, lowered (**deg**) 261
 seventh degree, lowered (**degree**) 265
 seventh degree, raised (**deg**) 261
 seventh degree, raised (**degree**) 265
 seventh, added 70
 Shakespeare, William 34
 shakuhachi 196
 shamisen 195
 Shannon, C. 315,320
 shawm; soprano, alto, tenor 195
 shell metacharacters, problems in command line 281
 shell variables 230
 sheng 196
 sho 196
si (**solfège**) 431
sic strophe label 215
sic, editorial signifier (**kern) 99
 signifieds 8
 signifiers 8
 signifiers, canonical ordering of (**kern) 102-103
 signifiers, segregate (**rend**) 404-407
 signifiers, user-defined 34
 silence — **tacet** command 445
 silence signifier (**IPA) 91
 sim file extension 419
 simil.rc initialization file 419
simil command 1,418-424
 simil representation 140-141
 similarity, non-parametric (**simil**) 1,418-424
 similarity, parametric (**correl**) 254-260
 similarity, representation of (**correl) 49-50
 similarity, representation of (**simil) 140-141
 simple meter 34
 Simpson, J. 1,173,464,524
 simxrf representation 419
Sinfonia No. 13 for keyboard 350
 single quotes in command line 230
 single spine, encoding of (**encode**) 269
 sitar 195
 sitar, tablature representation 76
 slendro tuning 132
 slendro, genre 34
 slg file extension 431
 Slovak language 36
 Slovenian language 36
 slur marks, incoherent (**proof**) 387
 slurs, representation of (**kern) 96-97
 slurs, representation of elided (**kern) 97,101
 slurs, representation of nested (**kern) 97
 Smaill, A. 524
 small mean course 77
smf command 1,425-426
 snare drum 197
 Social Sciences and Humanities Research Council 2
sol file extension 428
sol (**solfège**) 431
solfège 431-433
solfège, representation of (**solfé) 145-148
solfa syllables (**solfa**) 427-430
solfa syllables, representation of (**solfa) 142-144
solfa command 427-430
solfa representation 142-144
solfé command 431-433
solfé representation 145-148
 solo 187
Sommermüd opus 48 (1933) 122
 sonata-allegro form 34,189
 soprano clef 185
 soprano voice 193
 sound recording log 178
 source language, reference information 27
 spaces, problem of trailing (**cleave**) 244
 Spanish language 36,205
specC representation 149-151
spect representation 152-153
 spectra, acoustical 8
 spectra, instrument 1
 spectral centroid, representation of (**specC) 149-151
 spectrum, representation of frequency (**spect)
 152-153
 speed of strumming (**fret) 79,81
 spiccato bowing (**fret) 78,81
 spine organization 305
 spine, split (**rend**) 404-407
 spine-path changes (**extract**) 281,284
 spine-path changes (**fill**) 290
 spine-path indicators 212,303
 spine-path mode (**extract**) 280-281
 spine-path terminator 11
 spines 10,212
 spines, add (**cleave**) 240
 spines, amalgamate (**assemble**) 232-234
 spines, amalgamate (**cleave**) 240-244
 spines, exchange (**cleave**) 240
 spines, extraction (**extract**) 280-285
 spines, join (**strophe**) 434
 spines, spine-path structure (**fields**) 286-289
 spines, split (**cleave**) 240
 spines, split (**strophe**) 434
 spines, strophe (**strophe**) 434
 split spine (**rend**) 404-407
 split tokens (**rend**) 404-407

INDEX

- square notation 8
staff number 213
staff, 0-line 214
staff, 1-line 214
staff, 4-line 185,214
staff, 5-line 214
staff, arrangement of lines 214
staff, colored lines 214
staff, dotted line 214
staff, invisible line 214
staff, number of lines 214
staff, position within a system 213
staff, red line 214
stage names 27
Stamitz, J. 189
standard mode, Windows (**perform**) 379
steel-drum 197
Steinweg, H. 178
stem-direction, representation of (**kern) 96-97
Stevens, S.S. 524
Stevenson, Ronald 27
stimulus, experimental 189
Stoll, G. 524
Stone, K. 524
Stradivari, A. 178
Straus, J. 124,322,353,375,382,524
Stravinsky, Igor 30,402
stream editor (**humsed**) 310-313
stress, indicators of syllable (**IPA) 91
string damping (**fret) 78,81
string instruments 199
string quartet, genre 34
string ringing (**fret) 78,81
strophe 215-216
strophe end indicator 215-216
strophe end indicator (*S/fin) 434,437
strophe interpretations on the same record 437
strophe interpretations, types of 437
strophe label, *ossia* 215
strophe label, *sic* 215
strophe label, named 215-216
strophe label, numerical 215-216
strophe labels, non-numeric (**strophe**) 437
strophe name label (*S/number) 437
strophe number label (*S/number) 437
strophe numbers, decimal (**strophe**) 437
strophe spines (**strophe**) 434
strophe, position within a system 215-216
strophe command 215-216,434-440
strophes, missing 437
strophic Humdrum data, extract (**strophe**) 434-440
strophic data 215
strophic passage initiator 215-216
strophic passage initiator (*strophe) 434,437
strophic passage terminator 215-216
strophic passage terminator (*S-) 434,437
structure, deep (**regexp**) 492
structure, surface (**regexp**) 492
strumming, direction of (**fret) 79,81
strumming, rasgado (**fret) 79,81
strumming, speed of (**fret) 79,81
style, Ecole Notre Dame 34
style, bebop 34
style, minimalist 34
style, reference records 34
style, reggae 34
subject, experimental 189
submediant, encoding of (**deg**) 261
submediant, encoding of (**degree**) 265
substitute (s), **humsed** 310
substitute with matched string (&), **humsed** 312
subtoken 13
subtoken separator 13
sul tasto bowing (**fret) 78,81
sul tasto, plucked (**fret) 78,81
surface structure (**regexp**) 492
suspected composer, reference records 28
suspected performer, reference records 30
suspend playback (<space>), **perform** 377
suspension (**embel) 70
suspension, 4-3 (**embel) 70
suspension, 7-6 (**embel) 70
suspension, 9-8 (**embel) 70
suspensions 7
Swahili language 36,205
Swedish language 36,205
syllable, stress (**IPA) 91
sync command 1,441-444
sync representation 154-156
syn file extension 442
syncopation 462-464
syncopation, measurement of (**sync**) 441-444
syncopation, representation of (**sync) 154-156
“syncopation,” prototype (**urhythm**) 462
syntax checker, Humdrum (**humdrum**) 303-309
syntax checker, for **kern (**proof**) 387-388
synthesizer 198
synthesizer, MIDI 376-377,394
system, position of staves 213,215-216

T

- tablā 197
tabla, North Indian bols 8
tablatures, absolute tuning 76,190
tablatures, relative tuning 76,190
tablatures, representation of fretted (**fret) 76-84,190-191
tabs 10
tacet command 1,377,445
take, recording log 178
takt representation 157-159
tambūrā 195
tambourine 197
tambours (**fret) 80-81
Tamil language 36
tampering with data, detection of 34,465-466

- tanbur 195
 tandem interpretation, *+ 212
 tandem interpretation, *- 212
 tandem interpretation, *> 188-189,210-211
 tandem interpretation, *AT: 76,190
 tandem interpretation, *Ch 208
 tandem interpretation, *FT: 78,190
 tandem interpretation, *H 192
 tandem interpretation, *IC 199
 tandem interpretation, *ICbras 199
 tandem interpretation, *ICidio 199
 tandem interpretation, *ICKlav 199
 tandem interpretation, *ICstr 199
 tandem interpretation, *ICvox 199
 tandem interpretation, *ICww 199
 tandem interpretation, *ITr 221,460
 tandem interpretation, *I 193-198
 tandem interpretation, *K 202-203
 tandem interpretation, *L 204-205
 tandem interpretation, *MM 206-207,217-218
 tandem interpretation, *RT: 77,190
 tandem interpretation, *S- 24,216,434,437
 tandem interpretation, *S/1 216
 tandem interpretation, *S/name 437
 tandem interpretation, *S/number 437
 tandem interpretation, *S/fin 24,216,434,437
 tandem interpretation, *S/name 216
 tandem interpretation, *Tr 221,459-460
 tandem interpretation, * [a-gA-g] [-+] *: 461
 tandem interpretation, *^ 212
 tandem interpretation, *a2 187
 tandem interpretation, *all 184
 tandem interpretation, *clef 185-186
 tandem interpretation, *conct 187
 tandem interpretation, *ennun 162
 tandem interpretation, *ensemb 187
 tandem interpretation, *k [] 461
 tandem interpretation, *k 202-203
 tandem interpretation, *ripien 187
 tandem interpretation, *solo 187
 tandem interpretation, *staff 213
 tandem interpretation, *strophe 24,215-216,434,437
 tandem interpretation, *tb 220
 tandem interpretation, *thru 219,448
 tandem interpretation, *ueber 209
 tandem interpretation, *unter 209
 tandem interpretation, *v 212
 tandem interpretation, *vibrato 162
 tandem interpretation, *x 212
 tandem interpretation, *|. 214
 tandem interpretation, expansion lists 446
 tandem interpretation, key 200-201,461
 tandem interpretation, key signature 202-203,461
 tandem interpretation, languages 204-205
 tandem interpretation, section labels 446
 tandem interpretation, transposition 459-460
 tandem interpretations 10,303
 tandem interpretations, eliminate (**rid**) 408-410
 tandem interpretations, eliminate null (**rid**) 408-410
 tb file extension 452
 tee - a command (UNIX) 229
 tee command (UNIX) 229
 television schedules 8
 Telugu notation 8
 tempo 217-218
 tempo indication, missing (**proof**) 387
 tempo, changing (**perform**) 378-379
 tempo, determining average (**midi**) 342
 tempo, tandem interpretation 15
 tenor clef 185
 tenor course 77
 tenor voice 193
 tenore robusto voice 194
 tenuto, representation of (**kern) 97
 Terhardt, E. 524
 terminate **perform (ESC)** 377
 test file \$HUMDRUM/regexp.txt 398
 text, representation of (**text) 160-164
 text representation 160-164
 texture, heterophony 34
 Thai language 36
 theorbo 195
 theorbo, tablature representation 76
 third-note durations, representation of (**kern) 98
 Thomas, R. 524
 Thomassen, J. 332-333,524
 Thomson, W. 520
 thorn, representation of phonetic (**IPA) 92
 through-composed data format 188-189,219,436
 through-composed data format (**thru**) 446-450
 "throw-away" representations 8
 thru command 188,210,215,219,436,438,446-450
 Tibetan language 36
 tied notes (**deg**) 262
 tied notes (**degree**) 266
 tied notes (**freq**) 295
 tied notes (**solfa**) 428
 tied notes (**tonh -x**) 456
 tied notes, incoherent (**proof**) 387
 ties, representation of (**kern) 96-97
 time signatures 206-207
 time, constant (**timebase**) 451-452
 time, representation of (**time) 165-166
 time, representation of span of (**Zeit) 176-179
 time-base 220
 time-base (**encode**) 269
 time-base, augmentation dots in 220
 time-base, use of **recip durations 220
 time representation 165-166
 timebase command 98,451-452
 timpani 197
 timpanny 197
 title note, reference records 31
 title of parent work, reference records 30
 title, alternative 30
 title, popular 30
 title, reference records 30
 tokens, amalgamate (**cleave**) 240-244
 tokens, number of 236
 tokens, number of multiple-stops in 236

INDEX

- tokens, number of null 236
tokens, numerical re-classification (**recode**) 389-393
tokens, randomize order (**scramble**) 411-414
tokens, split (**rend**) 404-407
tom-tom drum 197
tonal consonance, representation of (**diss) 64-65
tonal inflections in Chinese (**IPA) 91
tonality, bi-tonal harmony (**harm) 87
tonality, polytonal harmony (**harm) 87
tone row (**reihe**) 399-403
tonh command 453-456
Tonh representation 167-170
Tonhöhe, representation of (**Tonh) 167-170
tonic pitch, encoding of (**deg**) 261
tonic pitch, encoding of (**degree**) 265
tonic solfa syllables (**solfa**) 427-430
tonic solfa syllables, representation of (**solfa) 142-144
tr file extension 458
trailing spaces, problem of (**cleave**) 244
trans command 457-461
translated reference information 27
translated title, reference records 30
translator, reference records 29
transliteration (y), **humsed** 310
transliteration, Roman alphabet 27
transposing instruments 96,221,460
transposition 221
transposition (**trans**) 457-461
transposition of tone row (**reihe**) 399-403
transposition tandem interpretation 459-460
transposition, chromatic 221
transposition, chromatic (**trans**) 457-461
transposition, diatonic 221
transposition, diatonic (**trans**) 457-461
transverse vibrato (**fret) 80-81
treble clef 185
treble course 77
tremolo bowing (**fret) 78,81
tremolo, plucked (**fret) 78,81
triads, augmented (**harm) 85,87
triads, diminished (**harm) 85,87
triads, major (**harm) 85,87
triads, minor (**harm) 85,87
triangle 197
trills ornament (**fret) 80-81
trills, representation of (**kern) 97
trills, semitone (**fret) 80-81
trills, whole tone (**fret) 80-81
triple beams, representation of (**kern) 97
triple meter 34
triple-flats (**kern) 96
triple-sharps (**kern) 96
triplet durations, representation of (**kern) 98
Tristan und Isolde, Prelude to 117
trombone; tenor, bass 196
trumpet 196
tuba 196
tuning, absolute 76,190
tuning, pelog 132
tuning, quarter-tone fret positions (**fret) 78
tuning, relative 76,190
tuning, representation of cents deviation 76
turns ornament (**fret) 80-81
turns, representation of (**kern) 97
turns, representation of Wagnerian (**kern) 97
turns, representation of inverted (**kern) 97
- U**
- üd 195
ueber 209
Ukrainian language 37
ukulele 195
unaccented passing tone (**embel) 70
undefined key context (**harm) 85
undefined key tandem interpretation 200
undefined value, question mark (**correl**) 260
underlay 209
underlay, text 164,209
unessential notes, representation of (**embel) 69-72
University of Illinois 320
UNIX tee 229
UNIX pipe 229
UNIX pipeline 229
unknown key tandem interpretation 200
unknown meter indications 206
unmatched data (**correl**) 256
unpublished works 32
unter 209
up-bows, representation of (**kern) 97
up-stems, representation of (**kern) 97
upper neighbor tone (**embel) 70
urr file extension 463
Ur-rhythm theory (**urhythm**) 462-464
urhythm command 462-464
URrhythm representation 171-173
Urdu folk songs 7
Urdu language 37,205
user-defined signifiers, reference records 34
- V**
- van Noorden, L. 523
van Vianen, B. 524
Varèse, Edgar 248-249,251-252
variable template mode (**simil**) 419
vector, interval (iv) 321-322
verification of files 465-466
veritas command 33,465-466

INDEX

verses 188
verses (**strophe**) 434-440
verses, order of (**strophe**) 434
verses, strophic data 215
version labels, duplicate (**thru**) 450
version of Humdrum Toolkit (**humver**) 314
version of electronic edition 33
version, definition of (**thru**) 447
versions 188
versions, expansion of (**thru**) 446-450
vi command (UNIX) 492
Vianen, B. van 524
vibraphone 197
vibrato (**vibrato*) 162
vibrato, lateral (***fret*) 80-81
vibrato, transverse (***fret*) 80-81
Victoria, Tomas Luis de 7
Vietnamese language 37
vīnā 195
viol, tablature representation 76
viola 195
viola d'amore 195
viola da gamba; treble, tenor, bass 195
violin 195
violoncello 194
viridis staff line 214
voice, Heldentenor 194
voice, alto 194
voice, baritone 193
voice, bass 193
voice, basso cantante 194
voice, basso profondo 194
voice, castrato 194
voice, child's 193
voice, coloratura soprano 194
voice, contralto 193
voice, counter-tenor 194
voice, dramatic soprano 194
voice, falsetto 194
voice, female 193
voice, generic 193
voice, lyric soprano 194
voice, lyric tenor 194
voice, male 193
voice, mezzo soprano 193
voice, recitativo 194
voice, soprano 193
voice, tenor 193
voice, tenore robusto 194
voices 193-198
voices (**I*Cvox) 199
voices, names of 193-198
Voiles 146
volume, reference records 31
Vos, J. 524
vowel coloration 7
vowels, formants (**IPA) 94
vowels, representation of (**IPA) 91
vox# representation 174-175
vox command 467, 468

vox file extension 467
w file-write (**humsed**) 310,312

W

Wagner, R. 8,117
Wagnerian turns, representation of (**fret) 80-81
Wagnerian turns, representation of (**kern) 97
“Das Wandern” from *Die Schöne Müllerin* 24,434,43
Wapnick, J. 523
warning, reference records 35
warnings, suppression of (**proof**) 387
Waterloo 2
Weaver, W. 320
Webern, A. 168
Webern, Anton von 400
Weinberger, P. 519-520
Welsh language 37
whole-tone mordents, representation of (**kern) 97
whole-tone trills, representation of (**kern) 97
Wiggins, G. 524
wild cards, regular expressions 493,503
Windows (perform) 379
Windows enhanced mode (**perform**) 379
Windows standard mode (**perform**) 379
Winterreise 31
Wong, A. 320,524
Wood, P. 522
woodwind instruments 199
work identification information 30-31

X

xdelta command 469-475
Xhosa language 37,205
x_option.awk file
239,264,268,296,327,372,385,417,430,433,456
xylophone 197

Y

y transliteration (**humsed**) 310
yank command 210,368,476-480
Yates, J. 524
ydelta command 481-483
yogh, representation of phonetic (**IPA) 92

INDEX

Z

Zeit representation 176-179

zero-line staff 214

zither 195

Zulu language 37,205

zūrnā 196

Zwicker, E. 524

ISBN 0-936943-10-6