Music Format and Structures

This describes the Music Format (.music) used in dulcimer-trainer. The format is music event data which is generated by a Python script.

Each line has the following format : a time and an action, separated by a full colon

The time is the elapsed time in millibars as an 8 digit number. The first five being the bar, the last three the position within the bar. However, this is offset by 10000, hence bar 1 beat 1 is at 10001000 – comprised of the 10000 offset, the bar number (1) and the first beat, which is 000 “millibars” into the song. This file is sorted on the times.

Action Assignments

Any line with a “:=” in is an assignment. The left hand side, stripped of spaces, is the value to assign, the right hand side, stripped of spaces, is the value. These are by convention stored at time 01xxxxxx. An assignment line looks like this *01000001:tempo:=120*

Assignment Values

|  |  |  |
| --- | --- | --- |
| Name | Default | Description |
| type | dulcimer | Instrument being played. Default is dulcimer with 6 and 6.5 fret |
| tuning | d3,a3,d4 | Tuning of Dulcimer. The fourth string is assumed to be the same as the third (“d4” in this example). |
| beats | 4 | Number of beats in each bar |
| tempo | 120 | Beats per minute. |
| syncopation | 50 | Syncopation on the up strum, as a percentage of each beat. |
| name | <filename> | Name of the song, default is the filename without extension l/c |
| translator | Paul Robson | Name of the person transcribing the song. |
| author | “” | Name of the author of the song |

Note events

These are (for Dulcimers) 8 digit values of the form aabbcc, where aa is the bass string, bb the middle string and cc the melody strings. A digital value here represents a fret position. The value of 99 is used for the note not being sounded. Fret numbers are always as if there was a chromatic fretting. These are converted back to a diatonic fret position, including the use of n.m syntax for display purposes.

Additionally, these may be followed by a semicolon and a chord name. This indicates a displayed chord above the tab and *may* cause the creation of a ChordEvent record.

Lyric events

A string of the format “abcdefgh” sets the lyric for the bar defined by the time.

Structures

NoteEvent

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| time | integer | Event time in this bar (e.g. the time mod 1000) |
| name$ | string | Name of chord to be displayed or empty string if none. |
| chromatic[s] | integer | Chromatic position (imaginary) for each Fret. So a real 0,1,2,3 fret will actually be 0,2,4,5 – the chromatic offset. If not strummed this will be 99. |

ChordEvent Structures

A chord event structure is generated for each ChordEvent when the chord is either the first one, or it has changed. This array is used to track chord changes.

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| time | integer | Position (bar# \* 1000 + millibars) having lost the additional 10,000 |
| name$ | string | Name of chord to be displayed or empty string if none. |
| chromatic[s] | integer | Chromatic position for each fret. |

Bar Structure

|  |  |  |
| --- | --- | --- |
| Name | Type | Description |
| barNumber | integer | Number of this bar |
| noteCount | integer | Number of note events in this bar |
| notes[noteCount] | NoteEvent | Actual note events |
| lyric$ | string | Lyrics in this bar, if any (empty string is no lyrics) |
| baseID | integer | Base ID for this bar (may use baseID to baseID + 999) |

Song Structure

|  |  |  |  |
| --- | --- | --- | --- |
| Name | Type | Default | Description |
| strings | integer | 3 | number of strings |
| tempo | integer | 120 | default tempo |
| beats | integer | 4 | default beats per bar |
| syncopation | integer | 50 | syncopation |
| type$ | string | dulcimer | instrument type |
| tuning$ | string | D3,A3,D4 | tuning to use. |
| stringBase[s] | integer |  | the note numbers for each unfretted string, lowest first (converted tuning$) |
| name$ | string |  | Name of song |
| author$ | string |  | Song writer(s) |
| translator$ | string |  | Translator |
| barCount | integer |  | Number of bars |
| bars[barCount] | Bar |  | Bars in the song |
| chordCount | integer |  | Number of chord events |
| chordEvents[] | ChordEvent |  | Chord events, one exists for each chord entry change, used for current/next chord displays. |