Midi Player Tool Kit for Unity

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Class List

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Namespace Documentation

MidiPlayerTK Namespace Reference

Classes

class MidiExternalPlayer

[MPTK PRO] - Script associated to the prefab MidiExternalPlayer.. Play a midi file from a path on the local deskop or from a web site. There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

class MidiFileLoader

Script associated to the prefab MidiFileLoader. No sequencer, no synthetizer, no music playing capabilities. Usefull to load all or part of the Midi events from a Midi and process, transform, write them to what you want. List of Midi file must be defined with Midi Player Setup (see Unity menu MPTK).

class MidiFilePlayer

Script associated to the prefab MidiFilePlayer. Simply, play a Midi file. Midi files must be defined from the Unity menu MPTK in the Unity editor. There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

class MidiFileWriter

[MPTK PRO] - Write a midi file from differents sources based on NAudio frawemork. See full example TestMidiWriter.cs with a light sequencer.

class MidiInReader

[MPTK PRO] - Script associated to the prefab MidiInReader. Read Midi events from a Midi keyboard connected your device (Windows 10 or MacOS). See example of use in TestMidiInputScripting.cs There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

class MidiListPlayer

[MPTK PRO] - Script for the prefab MidiListPlayer. Play a list of pre-selected midi file from the dedicated inspector. List of Midi files must exists in MidiDB. See Midi Player Setup (Unity menu MPTK).

class MidiLoad

Internal class for loading a Midi file. No sequencer, no synthetizer, no music playing capabilities. Usefull to load all the Midi events from a Midi and process, transform, write them to want you want.

class MidiPlayerGlobal

Singleton class to manage all global features of MPTK.

class MidiSpatializer

[MPTK PRO] - Script associated to the prefab MidiSpatializer. It's quite light because the major job is done with MidiSynth There is no specific API for this prefab. Scripting is necessary to defined position of channel or instrument in your 3D env.

class MidiStreamPlayer

Play generated notes. Any Midi file is necessary rather create music from your own algorithm with MPTK_PlayEvent(). Duration can be set in the MPTKEvent, but a note can also be stopped with MPTK_StopEvent().

class MidiSynth

class MPTKChordBuilder

[MPTK PRO] Chord builder class for MPTK. Usage to generate Midi Music with MidiStreamPlayer - V2.82 new

class MPTKChordLib

[MPTK PRO] - Load library of chord from ChordLib.csv in folder Resources/GeneratorTemplate.csv - V2.82 new

class MPTKEvent

Midi Event class for MPTK. Use this class to generate Midi Music with MidiStreamPlayer or to read midi events from a Midi file with MidiLoad or to receive midi events from MidiFilePlayer OnEventNotesMidi. With this class, you can: play and stop a note, change instrument (preset, patch, ...), change some control as modulation

class MPTKRangeLib

[MPTK PRO] - Load library of scale from GammeDefinition.csv in folder Resources/GeneratorTemplate.csv - V2.82 new

Enumerations

enum MPTKCommand : byte { NoteOff = 0x80, NoteOn = 0x90, KeyAfterTouch = 0xA0, ControlChange = 0xB0, PatchChange = 0xC0, ChannelAfterTouch = 0xD0, PitchWheelChange = 0xE0, Sysex = 0xF0, Eox = 0xF7, TimingClock = 0xF8, StartSequence = 0xFA, ContinueSequence = 0xFB, StopSequence = 0xFC, AutoSensing = 0xFE, MetaEvent = 0xFF }

MIDI command codes. Defined the action to be done with the message: note on/off, change instrument, ... Depending of the command selected, others properties must be set; Value, Channel, ...

enum MPTKController : byte { BankSelect = 0, Modulation = 1, BreathController = 2, FootController = 4, MainVolume = 7, Pan = 10, Expression = 11, BankSelectLsb = 32, Sustain = 64, Portamento = 65, Sostenuto = 66, SoftPedal = 67, LegatoFootswitch = 68, ResetAllControllers = 121, AllNotesOff = 123, AllSoundOff = 120 }

MidiController enumeration http://www.midi.org/techspecs/midimessages.php#3

enum MPTKMeta : byte { TrackSequenceNumber = 0x00, TextEvent = 0x01, Copyright = 0x02, SequenceTrackName = 0x03, TrackInstrumentName = 0x04, Lyric = 0x05, Marker = 0x06, CuePoint = 0x07, ProgramName = 0x08, DeviceName = 0x09, MidiChannel = 0x20, MidiPort = 0x21, EndTrack = 0x2F, SetTempo = 0x51, SmpteOffset = 0x54, TimeSignmature = 0x58, KeySignature = 0x59, SequencerSpecific = 0x7F }

MIDI MetaEvent Type

Enumeration Type Documentation

enum MPTKCommand : byte [strong]

MIDI command codes. Defined the action to be done with the message: note on/off, change instrument, ... Depending of the command selected, others properties must be set; Value, Channel, ...

Enumerator:

NoteOff	Note Off
NoteOn	Note On. Value contains the note to play between 0 and 127.
KeyAfterTouch	Key After-touch
ControlChange	Control change. Controller contains iendtify the controller to change (Modulation, Pan, Bank Select ...). Value will contains the value of the controller between 0 and 127.
PatchChange	Patch change. Value contains patch/preset/instrument value between 0 and 127.
ChannelAfterTouch	Channel after-touch
PitchWheelChange	Pitch wheel change

Sysex	Sysex message
Eox	Eox (comes at end of a sysex message)
TimingClock	Timing clock (used when synchronization is required)
StartSequence	Start sequence
ContinueSequence	Continue sequence
StopSequence	Stop sequence
AutoSensing	Auto-Sensing
MetaEvent	Meta-event

enum MPTKController : byte `[strong]`

MidiController enumeration http://www.midi.org/techspecs/midimessages.php#3

Enumerator:

BankSelect	Bank Select (MSB)
Modulation	Modulation (MSB)
BreathController	Breath Controller
FootController	Foot controller (MSB)

MainVolume	Main volume
Pan	Pan
Expression	Expression
BankSelectLsb	Bank Select LSB ** not implemented **
Sustain	Sustain
Portamento	Portamento On/Off
Sostenuto	Sostenuto On/Off
SoftPedal	Soft Pedal On/Off
LegatoFootswitch	Legato Footswitch
ResetAllControllers	Reset all controllers
AllNotesOff	All notes off
AllSoundOff	All sound off

enum MPTKMeta : byte `[strong]`

MIDI MetaEvent Type

Enumerator:

TrackSequenceNumber	Track sequence number

TextEvent	Text event
Copyright	Copyright
SequenceTrackName	Sequence track name
TrackInstrumentName	Track instrument name
Lyric	Lyric
Marker	Marker
CuePoint	Cue point
ProgramName	Program (patch) name
DeviceName	Device (port) name
MidiChannel	MIDI Channel (not official?)
MidiPort	MIDI Port (not official?)
EndTrack	End track
SetTempo	Set tempo
SmpteOffset	SMPTE offset
TimeSignmature	Time signature

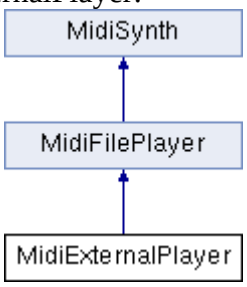
KeySignature	Key signature
SequencerSpecific	Sequencer specific

Class Documentation

MidiExternalPlayer

[MPTK PRO] - Script associated to the prefab MidiExternalPlayer.. Play a midi file from a path on the local deskop or from a web site. There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

Inheritance diagram for MidiExternalPlayer:



Public Member Functions

new MidiLoad MPTK_Load ()
Not applicable for external

new void MPTK_Next ()
Not applicable for external

override void MPTK_Play ()
Play the midi file defined in MPTK_MidiName

new void MPTK_Previous ()
Not applicable for external

Properties

new int MPTK_MidiIndex `[get, set]`
Not applicable for external

new string MPTK_MidiName `[get, set]`
Full path to Midi file or URL to play. Must start with file:// or http:// or https://.

Additional Inherited Members

Detailed Description

[MPTK PRO] - Script associated to the prefab MidiExternalPlayer.. Play a midi file from a path on the local deskop or from a web site. There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

```
 // Example of script. See TestMidiExternalPlayer.cs for a more detailed usage.
 // Need for a reference to the Prefab (to be set in the hierarchy or can be done by
script)
 MidiExternalPlayer midiExternalPlayer;

 if (midiExternalPlayer==null)
    Debug.LogError("TestMidiExternalPlayer: there is no MidiExternalPlayer Prefab set
in Inspector.");

 midiExternalPlayer.MPTK_MidiName =
"http://www.midiworld.com/midis/other/c2/bolero.mid";
 midiExternalPlayer.MPTK_Play();
!
```

Member Function Documentation

new MidiLoad MPTK_Load ()

Not applicable for external

new void MPTK_Next ()

Not applicable for external

override void MPTK_Play () `[virtual]`

Play the midi file defined in MPTK_MidiName

Reimplemented from MidiFilePlayer.

new void MPTK_Previous ()

Not applicable for external

Property Documentation

new int MPTK_MidiIndex `[get], [set]`

Not applicable for external

new string MPTK_MidiName `[get], [set]`

Full path to Midi file or URL to play. Must start with file:// or http:// or https://.

MidiFileLoader

Script associated to the prefab MidiFileLoader. No sequencer, no synthetizer, no music playing capabilities. Usefull to load all or part of the Midi events from a Midi and process, transform, write them to what you want. List of Midi file must be defined with Midi Player Setup (see Unity menu MPTK).
Inherits MonoBehaviour.

Public Member Functions

void MPTK_Load (byte[] midiBytesToLoad=null)
Load the midi file defined with MPTK_MidiName or MPTK_MidiIndex or from a array of bytes

void MPTK_Next ()
Read next Midi from the list of midi defined in MPTK (see Unity menu Midi)

MPTKEvent.EnumLength MPTK_NoteLength (MPTKEvent note)
Return note length as https://en.wikipedia.org/wiki/Note_value

void MPTK_Previous ()
Read previous Midi from the list of midi defined in MPTK (see Unity menu Midi)

List< MPTKEvent > MPTK_ReadMidiEvents (long fromTicks=0, long toTicks=long.MaxValue)
Read the list of midi events available in the Midi from a ticks position to an end position.

Public Attributes

int MPTK_DeltaTicksPerQuarterNote
From Midi Header: Delta Ticks Per Quarter Note. Represent the duration time in "ticks" which make up a quarter-note. For instance, if 96, then a duration of an eighth-note in the file would be 48.

TimeSpan MPTK_Duration
Duration of the midi. This duration is not constant depending of midi event change tempo inside the midi file.

bool MPTK_EnableChangeTempo

Should accept change tempo from Midi Events ?

double MPTK_InitialTempo

Initial tempo found in the Midi

bool MPTK_KeepNoteOff

Should keep note off event Events ?

bool MPTK_LogEvents

Log midi events

int MPTK_MicrosecondsPerQuarterNote

From the SetTempo event: The tempo is given in micro seconds per quarter beat. To convert this to BPM we needs to use the following equation:BPM = 60,000,000/[tt tt tt] Warning: this value can change during the playing when a change tempo event is find. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_No32ndNotesInQuarterNote

From TimeSignature event: This value specifies the number of 1/32nds of a note happen every MIDI quarter note. It is usually 8 which means that a quarter note happens every quarter note. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberBeatsMeasure

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberQuarterBeat

From TimeSignature event: number of quarter notes in a beat. Equal 2 Power TimeSigDenominator. http://www.deluge.co/?q=midi-tempo-bpm

TimeSpan MPTK_RealDuration

Real Duration of the midi calculated with the midi change tempo events find inside the midi file.

long MPTK_TickLast

Last tick position in Midi: Time of the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

int MPTK_TicksInMetronomeClick

From TimeSignature event: The standard MIDI clock ticks every 24 times every quarter note (crotchet) so a [cc] value of 24 would mean that the metronome clicks once every quarter note. A [cc] value of 6 would mean that the metronome clicks once every 1/8th of a note (quaver). http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigDenominator

From TimeSignature event: The denominator specifies the number of quarter notes in a beat. 2 represents a quarter-note, 3 represents an eighth-note, etc. . http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigNumerator

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. In MIDI the denominator value is stored in a special format. i.e. the real denominator = 2^[dd] http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TrackCount

Count of track read in the Midi file

Properties

int MPTK_MidiIndex `[get, set]`

Index Midi. Find the Index of Midi file from the popup in MidiFileLoader inspector. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK. return -1 if not found

string MPTK_MidiName `[get, set]`

Midi name to load. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

Detailed Description

Script associated to the prefab MidiFileLoader. No sequencer, no synthetizer, no music playing capabilities. Usefull to load all or part of the Midi events from a Midi and process, transform, write them to what you want. List of Midi file must be defined with Midi Player Setup (see Unity menu MPTK).

```
 // Example of script. See TestMidiFileLoad.cs for a more detailed usage.
 // Need of a reference to the Prefab (to be set in the hierarchy)
 MidiFileLoader MidiLoader;

 if (MidiLoader==null)
    Debug.LogError("TestMidiFileLoad: there is no MidiFileLoader Prefab set in
Inspector.");

 // Defined index (from the Midi list defined in MPTK)
 MidiLoader.MPTK_MidiIndex = midiindex;

 // Load Midi event from the Midi file
 MidiLoader.MPTK_Load();

 // Get the list of events from start to end (in ticks)
 List<MPTKEvent> events = MidiLoader.MPTK_ReadMidiEvents(StartTicks, EndTicks);
!
```

Member Function Documentation

void MPTK_Load (byte[] *midiBytesToLoad* = `null`)

Load the midi file defined with MPTK_MidiName or MPTK_MidiIndex or from a array of bytes

Parameters

midiBytesToLoad	

void MPTK_Next ()

Read next Midi from the list of midi defined in MPTK (see Unity menu Midi)

MPTKEvent.EnumLength MPTK_NoteLength (MPTKEvent *note*)

Return note length as https://en.wikipedia.org/wiki/Note_value

Parameters

note	

Returns

MPTKEvent.EnumLength

void MPTK_Previous ()

Read previous Midi from the list of midi defined in MPTK (see Unity menu Midi)

List<MPTKEvent> MPTK_ReadMidiEvents (long *fromTicks* = `0`, long *toTicks* = `long.MaxValue`)

Read the list of midi events available in the Midi from a ticks position to an end position.

Parameters

fromTicks	ticks start
toTicks	ticks end

Returns

Member Data Documentation

int MPTK_DeltaTicksPerQuarterNote

From Midi Header: Delta Ticks Per Quarter Note. Represent the duration time in "ticks" which make up a quarter-note. For instance, if 96, then a duration of an eighth-note in the file would be 48.

TimeSpan MPTK_Duration

Duration of the midi. This duration is not constant depending of midi event change tempo inside the midi file.

bool MPTK_EnableChangeTempo

Should accept change tempo from Midi Events ?

double MPTK_InitialTempo

Initial tempo found in the Midi

bool MPTK_KeepNoteOff

Should keep note off event Events ?

bool MPTK_LogEvents

Log midi events

int MPTK_MicrosecondsPerQuarterNote

From the SetTempo event: The tempo is given in micro seconds per quarter beat. To convert this to BPM we needs to use the following equation:BPM = 60,000,000/[tt tt tt] Warning: this value can change during the playing when a change tempo event is find. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_No32ndNotesInQuarterNote

From TimeSignature event: This value specifies the number of 1/32nds of a note happen every MIDI quarter note. It is usually 8 which means that a quarter note happens every quarter note. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberBeatsMeasure

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberQuarterBeat

From TimeSignature event: number of quarter notes in a beat. Equal 2 Power TimeSigDenominator. http://www.deluge.co/?q=midi-tempo-bpm

TimeSpan MPTK_RealDuration

Real Duration of the midi calculated with the midi change tempo events find inside the midi file.

long MPTK_TickLast

Last tick position in Midi: Time of the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

int MPTK_TicksInMetronomeClick

From TimeSignature event: The standard MIDI clock ticks every 24 times every quarter note (crotchet) so a [cc] value of 24 would mean that the metronome clicks once every quarter note. A [cc] value of 6 would mean that the metronome clicks once every 1/8th of a note (quaver). http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigDenominator

From TimeSignature event: The denominator specifies the number of quarter notes in a beat. 2 represents a quarter-note, 3 represents an eighth-note, etc. . http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigNumerator

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. In MIDI the denominator value is stored in a special format. i.e. the real denominator = 2^[dd] http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TrackCount

Count of track read in the Midi file

Property Documentation

int MPTK_MidiIndex `[get], [set]`

Index Midi. Find the Index of Midi file from the popup in MidiFileLoader inspector. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK. return -1 if not found

```
 midiFileLoader.MPTK_MidiIndex = 1;
!
```

Parameters

index	

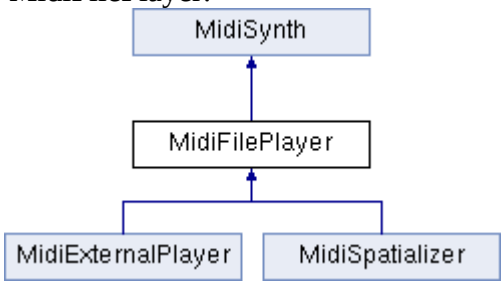
string MPTK_MidiName `[get], [set]`

Midi name to load. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

MidiFilePlayer

Script associated to the prefab MidiFilePlayer. Simply, play a Midi file. Midi files must be defined from the Unity menu MPTK in the Unity editor. There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

Inheritance diagram for MidiFilePlayer:



Public Member Functions

MidiLoad MPTK_Load ()

Load the midi file defined with MPTK_MidiName or MPTK_MidiIndex. It's an optional action before playing a midi file witk MPTK_Play()

Use this method to get all Midi events before start playing.

void MPTK_Next ()

Play next Midi from the list of midi defined in MPTK (see Unity menu Midi)

MPTKEvent.EnumLength MPTK_NoteLength (MPTKEvent note)

Return note length as https://en.wikipedia.org/wiki/Note_value

void MPTK_Pause (float timeToPauseMS=-1f)

Pause the current playing

virtual void MPTK_Play ()
Play the midi file defined with MPTK_MidiName or MPTK_MidiIndex

void MPTK_PlayNextOrPrevious (int offset)
[MPTK PRO] - Play next or previous Midi from the MidiDB list.

void MPTK_Previous ()
Play previous Midi from the list of midi defined in MPTK (see Unity menu Midi)

void MPTK_RePlay ()
Restart playing of the current midi file

void MPTK_SearchMidiToPlay (string name)
[MPTK PRO] - Find a Midi in the Unity resources folder MidiDB which contains the name (case sensitive) Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

void MPTK_Stop ()
Stop playing

void MPTK_UnPause ()
UnPause the current playing

Public Attributes

bool MPTK_PauseOnFocusLoss
Should the Midi playing must be paused when the application lost the focus?

bool MPTK_StartPlayAtFirstNote
Should the midi start playing at the first note found ?

EventEndMidiClass OnEventEndPlayMidi
Define unity event to trigger at end of playing the midi.

EventNotesMidiClass OnEventNotesMidi
Define unity event to trigger when notes available from the Midi file.

EventStartMidiClass OnEventStartPlayMidi
Define unity event to trigger at start of playing the Midi.

Properties

int MPTK_DeltaTicksPerQuarterNote `[get]`
Delta Ticks Per Quarter Note. Indicate the duration time in "ticks" which make up a quarter-note. For instance, if 96, then a duration of an eighth-note in the file would be 48.

TimeSpan MPTK_Duration `[get]`
Duration (TimeSpan) of the midi.

float MPTK_DurationMS `[get]`

Duration (milliseconds) of the midi.

bool MPTK_IsPaused `[get]`

Is Midi file playing is paused ?

bool MPTK_IsPlaying `[get]`

Is Midi file is playing ?

bool MPTK_KeepNoteOff `[get, set]`

Should keep note off event Events from the Midi file ?

bool MPTK_LogEvents `[get, set]`

Log midi events

bool MPTK_Loop `[get, set]`

Should automatically restart playing when Midi reaches the end ? The midi doesn't need to be reload.

List< TrackMidiEvent >? MPTK_MidiEvents `[get]`

[DEPRECATED] Get all the raw midi events available in the midi file. Use rather the class MidiLoad.

int MPTK_MidiIndex `[get, set]`

Index Midi. Find the Index of Midi file (same values ad from the popup in MidiFilePlayer inspector). Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK. return -1 if not found

MidiLoad MPTK_MidiLoaded `[get]`

Get detailed information about the midi playing. This readonly properties is available only when a Midi is playing.

Rather use the method MPTK_Load() to get information about a Midi before playing. V2.82.

virtual string MPTK_MidiName `[get, set]`

Midi name to play. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

bool MPTK_PlayOnStart `[get, set]`

Should the Midi start playing when application starts ?

TimeSpan MPTK_PlayTime `[get]`

Time from the start of playing the current midi

double? MPTK_Position `[get, set]`

Set or Get midi position of midi playing (in millisecond). If the Midi contains change of tempo, the position could not reflect the real time since the beginning. Use MPTK_TickCurrent to change the position in tick which is independent of the tempo and the speed.

double MPTK_PulseLenght `[get]`

Lenght in millisecond of a quarter

int MPTK_Quantization `[get, set]`

Level of quantization :

float MPTK_Speed `[get, set]`

Speed of playing. Between 0.1 (10%) to 10 (1000%).

Set to 1 for normal speed.

double MPTK_Tempo `[get]`

Get the current tempo from the Midi file (independent from MPTK_Speed). Return QuarterPerMinuteValue similar to BPM (Beat Per Measure)

long? MPTK_TickCurrent `[get, set]`

Set or get the current tick position in Midi which is independent of the tempo and the speed. Use MPTK_Position to change the position in milliseconds.

long? MPTK_TickLast `[get]`

Last tick position in Midi: Value of the tick for the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

Additional Inherited Members

Detailed Description

Script associated to the prefab MidiFilePlayer. Simply, play a Midi file. Midi files must be defined from the Unity menu MPTK in the Unity editor. There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

```
 // Example of script. See TestMidiFilePlayerScripting.cs for a more detailed usage.
 // Need of a reference to the Prefab (to be set in the hierarchy or from the script)
 MidiFilePlayer midiFilePlayer;

 if (midiExternalPlayer==null)
    midiFilePlayer = FindObjectOfType<MidiFilePlayer>();
 if (midiExternalPlayer==null)
    Debug.LogError("TestMidiExternalPlayer: there is no MidiFilePlayer Prefab set in
Inspector.");

 // Random select for the Midi
 int index = UnityEngine.Random.Range(0, MidiPlayerGlobal.MPTK_ListMidi.Count);
 midiFilePlayer.MPTK_MidiIndex = index;

 // Play!
 midiFilePlayer.MPTK_Play();

!
```

Member Function Documentation

MidiLoad MPTK_Load ()

Load the midi file defined with MPTK_MidiName or MPTK_MidiIndex. It's an optional action before playing a midi file witk MPTK_Play()

Use this method to get all Midi events before start playing.

```
 private void GetMidiInfo()
 {
    MidiLoad midiloaded = midiFilePlayer.MPTK_Load();
    if (midiloaded != null)
    {
       infoMidi = "Duration: " + midiloaded.MPTK_Duration.TotalSeconds + "
seconds\n";
       infoMidi += "Tempo: " + midiloaded.MPTK_InitialTempo + "\n";
       List<MPTKEvent> listEvents = midiloaded.MPTK_ReadMidiEvents();
       infoMidi += "Count Midi Events: " + listEvents.Count + "\n";
       Debug.Log(infoMidi);
    }
 }
!
```

Returns

MidiLoad to access all the properties of the midi loaded

void MPTK_Next ()

Play next Midi from the list of midi defined in MPTK (see Unity menu Midi)

MPTKEvent.EnumLength MPTK_NoteLength (MPTKEvent *note*)

Return note length as https://en.wikipedia.org/wiki/Note_value

Parameters

note	

Returns

MPTKEvent.EnumLength

void MPTK_Pause (float *timeToPauseMS* = `-1f`)

Pause the current playing

Parameters

timeToPauseMS	time to pause in milliseconds. default or < 0 : indefinitely

virtual void MPTK_Play () `[virtual]`

Play the midi file defined with MPTK_MidiName or MPTK_MidiIndex

Reimplemented in MidiExternalPlayer.

void MPTK_PlayNextOrPrevious (int *offset*)

[MPTK PRO] - Play next or previous Midi from the MidiDB list.

Parameters

offset	Forward or backward count in the list. 1:the next, -1:the previous

void MPTK_Previous ()

Play previous Midi from the list of midi defined in MPTK (see Unity menu Midi)

void MPTK_RePlay ()

Restart playing of the current midi file

void MPTK_SearchMidiToPlay (string *name*)

[MPTK PRO] - Find a Midi in the Unity resources folder MidiDB which contains the name (case sensitive) Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

```
 midiFilePlayer.MPTK_SearchMidiToPlay("Adagio");
 midiFilePlayer.MPTK_Play();
!
```

void MPTK_Stop ()

Stop playing

void MPTK_UnPause ()

UnPause the current playing

Member Data Documentation

bool MPTK_PauseOnFocusLoss

Should the Midi playing must be paused when the application lost the focus?

bool MPTK_StartPlayAtFirstNote

Should the midi start playing at the first note found ?

EventEndMidiClass OnEventEndPlayMidi

Define unity event to trigger at end of playing the midi.

```
 MidiFilePlayer midiFilePlayer = FindObjectOfType<MidiFilePlayer>();
          ...
 if (!midiFilePlayer.OnEventEndPlayMidi.HasEvent())
 {
    // No listener defined, set now by script. EndPlay will be called.
    midiFilePlayer.OnEventEndPlayMidi.AddListener(EndPlay);
 }
          ...
 public void EndPlay(string midiname, EventEndMidiEnum reason)
 {
    Debug.LogFormat("End playing midi {0} reason:{1}", midiname, reason);
 }
!
```

EventNotesMidiClass OnEventNotesMidi

Define unity event to trigger when notes available from the Midi file.

```
 MidiFilePlayer midiFilePlayer = FindObjectOfType<MidiFilePlayer>();
          ...
 if (!midiFilePlayer.OnEventNotesMidi.HasEvent())
 {
    // No listener defined, set now by script. NotesToPlay will be called for each
new notes read from Midi file
    midiFilePlayer.OnEventNotesMidi.AddListener(NotesToPlay);
 }
          ...
 public void NotesToPlay(List<MPTKEvent> notes)
 {
    Debug.Log(notes.Count);
    foreach (MPTKEvent midievent in notes)
    {
          ...
    }
 }
!
```

EventStartMidiClass OnEventStartPlayMidi

Define unity event to trigger at start of playing the Midi.

```
! MidiFilePlayer midiFilePlayer = FindObjectOfType<MidiFilePlayer>();
          ...
 if (!midiFilePlayer.OnEventStartPlayMidi.HasEvent())
 {
    // No listener defined, set now by script. StartPlay will be called.
    midiFilePlayer.OnEventStartPlayMidi.AddListener(StartPlay);
 }
```

```
        ...
 public void StartPlay(string midiname)
 {
    Debug.LogFormat("Start playing midi {0}", midiname);
 }
!
```

Property Documentation

int MPTK_DeltaTicksPerQuarterNote `[get]`

Delta Ticks Per Quarter Note. Indicate the duration time in "ticks" which make up a quarter-note. For instance, if 96, then a duration of an eighth-note in the file would be 48.

TimeSpan MPTK_Duration `[get]`

Duration (TimeSpan) of the midi.

float MPTK_DurationMS `[get]`

Duration (milliseconds) of the midi.

bool MPTK_IsPaused `[get]`

Is Midi file playing is paused ?

bool MPTK_IsPlaying `[get]`

Is Midi file is playing ?

bool MPTK_KeepNoteOff `[get]`, `[set]`

Should keep note off event Events from the Midi file ?

bool MPTK_LogEvents `[get]`, `[set]`

Log midi events

bool MPTK_Loop `[get], [set]`

Should automatically restart playing when Midi reaches the end ? The midi doesn't need to be reload.

List<TrackMidiEvent>? MPTK_MidiEvents `[get]`

[DEPRECATED] Get all the raw midi events available in the midi file. Use rather the class MidiLoad.

```
 MidiLoad MidiLoaded = new MidiLoad();
 MidiLoaded.MPTK_Load(midiindex);
 List<MPTKEvent> events = MidiLoaded.MPTK_ReadMidiEvents();
!
```

int MPTK_MidiIndex `[get], [set]`

Index Midi. Find the Index of Midi file (same values ad from the popup in MidiFilePlayer inspector). Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK. return -1 if not found

```
 midiFilePlayer.MPTK_MidiIndex = 33;
 midiFilePlayer.MPTK_Play();
!
```

///

Parameters

index	

MidiLoad MPTK_MidiLoaded `[get]`

Get detailed information about the midi playing. This readonly properties is available only when a Midi is playing.

Rather use the method MPTK_Load() to get information about a Midi before playing. V2.82.

virtual string MPTK_MidiName `[get], [set]`

Midi name to play. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

```
 midiFilePlayer.MPTK_MidiName = "Albinoni - Adagio";
 midiFilePlayer.MPTK_Play();
!
```

bool MPTK_PlayOnStart `[get], [set]`

Should the Midi start playing when application starts ?

TimeSpan MPTK_PlayTime `[get]`

Time from the start of playing the current midi

double? MPTK_Position `[get]`, `[set]`

Set or Get midi position of midi playing (in millisecond). If the Midi contains change of tempo, the position could not reflect the real time since the beginning. Use MPTK_TickCurrent to change the position in tick which is independent of the tempo and the speed.

```
 double currentPosition = Math.Round(midiFilePlayer.MPTK_Position / 1000d, 2);
 double newPosition =
Math.Round(GUILayout.HorizontalSlider((float)currentPosition, 0f,
(float)midiFilePlayer.MPTK_Duration.TotalSeconds, GUILayout.Width(buttonWidth)),
2);
 if (newPosition != currentPosition)
 {
    Debug.Log("New position " + currentPosition + " --> " + newPosition );
    midiFilePlayer.MPTK_Position = newPosition * 1000d;
  }
!
```

double MPTK_PulseLenght `[get]`

Lenght in millisecond of a quarter

int MPTK_Quantization `[get]`, `[set]`

Level of quantization :

0 = None
1 = Quarter Note
2 = Eighth Note
3 = 16th Note
4 = 32th Note
5 = 64th Note

float MPTK_Speed `[get]`, `[set]`

Speed of playing. Between 0.1 (10%) to 10 (1000%).

Set to 1 for normal speed.

double MPTK_Tempo `[get]`

Get the current tempo from the Midi file (independent from MPTK_Speed). Return QuarterPerMinuteValue similar to BPM (Beat Per Measure)

long? MPTK_TickCurrent `[get], [set]`

Set or get the current tick position in Midi which is independent of the tempo and the speed. Use MPTK_Position to change the position in milliseconds.

long? MPTK_TickLast `[get]`

Last tick position in Midi: Value of the tick for the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

MidiFileWriter

[MPTK PRO] - Write a midi file from differents sources based on NAudio frawemork. See full example TestMidiWriter.cs with a light sequencer.

Public Member Functions

MidiFileWriter ()
Create an empty MidiFileWriter

MidiFileWriter (int deltaTicksPerQuarterNote, int midiFileType)
Create a MidiFileWriter with an empty Midi Event list

void MPTK_AddEvent (int track, MidiEvent midievent)
Add a generic Midi event

void MPTK_AddNote (int track, long absoluteTime, int channel, int note, int velocity, int duration)
Add a note event. the corresponding Noteoff is automatically created.

void MPTK_CreateTrack (int count)
Create tracks

void MPTK_EndTrack (int trackNumber)
Close the track (mandatory for a well formed midi file)

bool MPTK_LoadFromFile (string filename)
Load a Midi file from OS system file (could be dependant of the OS)

bool MPTK_LoadFromMidiDB (int indexMidiDb)
Create a MidiFileWriter from a Midi found in MPTK MidiDB

bool MPTK_LoadFromMPTK (List< TrackMidiEvent > MidiSorted)

Create a MidiFileWriter from a MPTK list of midi events. A midi file must be loaded before from a MidiFilePlayer gameobject (as in example) or from a call to MidiFileWriter.MPTK_LoadFromFile(filename).

bool MPTK_WriteToFile (string filename)

Write Midi file to an OS folder

bool MPTK_WriteToMidiDB (string filename)

Write Midi file to MidiDB. To be used only in edit mode not in a standalone application.

Static Public Member Functions

static int MPTK_GetMicrosecondsPerQuaterNote (int bpm)

Convert BPM to duration or a quarter in microsecond

Properties

int? MPTK_DeltaTicksPerQuarterNote `[get]`

Get the DeltaTicksPerQuarterNote of the loaded midi

int? MPTK_MidiFileType `[get]`

Get the midi file type of the loaded midi (0,1,2)

int? MPTK_TrackCount `[get]`

Get the track count of the loaded midi

Detailed Description

[MPTK PRO] - Write a midi file from differents sources based on NAudio frawemork. See full example TestMidiWriter.cs with a light sequencer.

Constructor & Destructor Documentation

MidiFileWriter ()

Create an empty MidiFileWriter

MidiFileWriter (int *deltaTicksPerQuarterNote*, int *midiFileType*)

Create a MidiFileWriter with an empty Midi Event list

Parameters

deltaTicksPerQuarterNote	
midiFileType	

Member Function Documentation

void MPTK_AddEvent (int *track*, MidiEvent *midievent*)

Add a generic Midi event

Parameters

track	
midievent	

void MPTK_AddNote (int *track*, long *absoluteTime*, int *channel*, int *note*, int *velocity*, int *duration*)

Add a note event. the corresponding Noteoff is automatically created.

Parameters

track	
absoluteTime	
channel	
note	
velocity	
duration	

void MPTK_CreateTrack (int *count*)

Create tracks

Parameters

count	number of tracks to create

void MPTK_EndTrack (int *trackNumber*)

Close the track (mandatory for a well formed midi file)

Parameters

trackNumber	Track number to close

static int MPTK_GetMicrosecondsPerQuaterNote (int *bpm*) `[static]`

Convert BPM to duration or a quarter in microsecond

Parameters

bpm	beat per measure

Returns

bool MPTK_LoadFromFile (string *filename*)

Load a Midi file from OS system file (could be dependant of the OS)

Parameters

filename	

Returns

bool MPTK_LoadFromMidiDB (int *indexMidiDb*)

Create a MidiFileWriter from a Midi found in MPTK MidiDB

Parameters

indexMidiDb	

bool MPTK_LoadFromMPTK (List< TrackMidiEvent > *MidiSorted*)

Create a MidiFileWriter from a MPTK list of midi events. A midi file must be loaded before from a MidiFilePlayer gameobject (as in example) or from a call to MidiFileWriter.MPTK_LoadFromFile(filename).

Parameters

MidiSorted	

bool MPTK_WriteToFile (string *filename*)

Write Midi file to an OS folder

Parameters

filename	filename of the midi file

Returns

bool MPTK_WriteToMidiDB (string *filename*)

Write Midi file to MidiDB. To be used only in edit mode not in a standalone application.

Parameters

filename	filename of the midi file without any folder and any extension

Returns

Property Documentation

int? MPTK_DeltaTicksPerQuarterNote `[get]`

Get the DeltaTicksPerQuarterNote of the loaded midi

int? MPTK_MidiFileType `[get]`

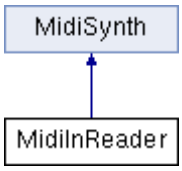
Get the midi file type of the loaded midi (0,1,2)

int? MPTK_TrackCount `[get]`

Get the track count of the loaded midi

MidiInReader

[MPTK PRO] - Script associated to the prefab MidiInReader. Read Midi events from a Midi keyboard connected your device (Windows 10 or MacOS). See example of use in TestMidiInputScripting.cs
There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.
Inheritance diagram for MidiInReader:



Public Attributes

bool MPTK_LogEvents
Log midi events

bool MPTK_ReadMidiInput
Read Midi input

EventMidiClass OnEventInputMidi
Define unity event to trigger when note available from the Midi file.

Additional Inherited Members

Detailed Description

[MPTK PRO] - Script associated to the prefab MidiInReader. Read Midi events from a Midi keyboard connected your device (Windows 10 or MacOS). See example of use in TestMidiInputScripting.cs There is no need to writing a script. For a simple usage, all the job can be done in the prefab inspector.

```
 // Example of script. See TestMidiInputScripting.cs for a more detailed usage.
 // Need for a reference to the Prefab (can also be set from the hierarchy)
 MidiInReader midiIn = FindObjectOfType<MidiInReader>();

 if (midiIn == null)
     Debug.Log("Can't find a MidiInReader Prefab in the Hierarchy. No events will be
read");

 // There is two methods to trigger event: in inpector from the Unity editor or by
script
 midiIn.OnEventInputMidi.AddListener((MPTKEvent evt) =>
 {
     // your processing here
     Debug.Log(evt.ToString());
 });
!
```

Member Data Documentation

bool MPTK_LogEvents

Log midi events

bool MPTK_ReadMidiInput

Read Midi input

EventMidiClass OnEventInputMidi

Define unity event to trigger when note available from the Midi file.

```
 MidiInReader midiFilePlayer = FindObjectOfType<MidiInReader>();
         ...
 if (!midiFilePlayer.OnEventInputMidi.HasEvent())
 {
    // No listener defined, set now by script. NotesToPlay will be called for each
new notes read from Midi file
    midiFilePlayer.OnEventInputMidi.AddListener(NotesToPlay);
 }
         ...
 public void NotesToPlay(MPTKEvent notes)
 {
    Debug.Log(notes.Value);
    foreach (MPTKEvent midievent in notes)
    {
```

```
            ...
        }
    }
!
```

MidiListPlayer

[MPTK PRO] - Script for the prefab MidiListPlayer. Play a list of pre-selected midi file from the dedicated inspector. List of Midi files must exists in MidiDB. See Midi Player Setup (Unity menu MPTK).
Inherits MonoBehaviour.

Classes

class MPTK_MidiPlayItem
Define a midi to be added in the list

Public Member Functions

void MPTK_AddMidi (string name, float start=0, float end=0)
Add a Midi name to the list. Use the exact name defined in Unity resources (folder MidiDB) without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

MPTK_MidiPlayItem MPTK_GetAt (int index)
Get description of a play item at position.

void MPTK_NewList ()
Create an empty list

void MPTK_Next ()
Play next Midi in list

void MPTK_Pause ()
Pause the current playing

void MPTK_Play ()
Play the midi in list at MPTK_PlayIndex position

void MPTK_Previous ()
Play previous Midi in list

void MPTK_ReIndexMidi ()
Recalculate the index of the midi from the list.

void MPTK_RemoveMidi (string name)
Remove a Midi name from the list. Use the exact name defined in Unity resources folder MidiDB without any path or extension.

void MPTK_RemoveMidiAt (int index)
Remove a Midi at position from the list..

void MPTK_RePlay ()
Restart playing the current midi file

void MPTK_Stop ()
Stop playing

void MPTK_UnPause ()
Pause the current playing

Public Attributes

MidiListPlayerStatus MPTK_MidiFilePlayer_1
First MidiFilePlayer to play the Midi

MidiListPlayerStatus MPTK_MidiFilePlayer_2
Second MidiFilePlayer to play the Midi

float MPTK_OverlayTimeMS
Duration of overlay between playing two midi

List< MPTK_MidiPlayItem > MPTK_PlayList
Play list

EventEndMidiClass OnEventEndPlayMidi
Define unity event to trigger at end

EventStartMidiClass OnEventStartPlayMidi
Define unity event to trigger at start

Properties

TimeSpan MPTK_Duration `[get]`
Duration of the midi. This duration can change during the playing when Change Tempo Event are processed.

bool MPTK_IsPaused `[get]`
Is Midi file playing is paused ?

bool MPTK_IsPlaying `[get]`
Is Midi file is playing ?

bool MPTK_Loop `[get, set]`
Should automatically restart when Midi reach the end ?

int? MPTK_PlayIndex `[get, set]`

Play a specific Midi in the list.

bool MPTK_PlayOnStart `[get, set]`

Should the Midi start playing when application start ?

double MPTK_Position `[get, set]`

Set or Get midi position time from 0 to lenght time of midi playing (in millisecond). No effect if the Midi is not playing.

long MPTK_TickCurrent `[get, set]`

Current tick position in Midi: Time of the current midi event expressed in number of "ticks". MPTK_TickCurrent / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

long MPTK_TickLast `[get]`

Last tick position in Midi: Value of the tick for the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

float MPTK_Volume `[get, set]`

Volume of midi playing. Must be >=0 and <= 1

Detailed Description

[MPTK PRO] - Script for the prefab MidiListPlayer. Play a list of pre-selected midi file from the dedicated inspector. List of Midi files must exists in MidiDB. See Midi Player Setup (Unity menu MPTK).

Member Function Documentation

void MPTK_AddMidi (string *name*, float *start* = 0, float *end* = 0)

Add a Midi name to the list. Use the exact name defined in Unity resources (folder MidiDB) without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

```
midiListPlayer.MPTK_AddMidi("Albinoni - Adagio");
midiListPlayer.MPTK_AddMidi("Conan The Barbarian", 10000, 20000);
!
```

Parameters

name	midi filename as defined in resources
start	starting time of playing (ms). Default: start of the midi
end	endding time of playing (ms). Default: end of midi

MPTK_MidiPlayItem MPTK_GetAt (int *index*)

Get description of a play item at position.

```
 midiListPlayer.MPTK_GetAt(1);
!
```

void MPTK_NewList ()

Create an empty list

void MPTK_Next ()

Play next Midi in list

void MPTK_Pause ()

Pause the current playing

void MPTK_Play ()

Play the midi in list at MPTK_PlayIndex position

void MPTK_Previous ()

Play previous Midi in list

void MPTK_ReIndexMidi ()

Recalculate the index of the midi from the list.

void MPTK_RemoveMidi (string *name*)

Remove a Midi name from the list. Use the exact name defined in Unity resources folder MidiDB without any path or extension.

```
 midiListPlayer.MPTK_RemoveMidi("Albinoni - Adagio");
!
```

void MPTK_RemoveMidiAt (int *index*)

Remove a Midi at position from the list..

```
 midiListPlayer.MPTK_RemoveMidiAt(1);
!
```

void MPTK_RePlay ()

Restart playing the current midi file

void MPTK_Stop ()

Stop playing

void MPTK_UnPause ()

Pause the current playing

Member Data Documentation

MidiListPlayerStatus MPTK_MidiFilePlayer_1

First MidiFilePlayer to play the Midi

MidiListPlayerStatus MPTK_MidiFilePlayer_2

Second MidiFilePlayer to play the Midi

float MPTK_OverlayTimeMS

Duration of overlay between playing two midi

List<MPTK_MidiPlayItem> MPTK_PlayList

Play list

EventEndMidiClass OnEventEndPlayMidi

Define unity event to trigger at end

EventStartMidiClass OnEventStartPlayMidi

Define unity event to trigger at start

Property Documentation

TimeSpan MPTK_Duration `[get]`

Duration of the midi. This duration can change during the playing when Change Tempo Event are processed.

bool MPTK_IsPaused `[get]`

Is Midi file playing is paused ?

bool MPTK_IsPlaying `[get]`

Is Midi file is playing ?

bool MPTK_Loop `[get]`, `[set]`

Should automatically restart when Midi reach the end ?

int? MPTK_PlayIndex `[get]`, `[set]`

Play a specific Midi in the list.

bool MPTK_PlayOnStart `[get]`, `[set]`

Should the Midi start playing when application start ?

double MPTK_Position `[get]`, `[set]`

Set or Get midi position time from 0 to lenght time of midi playing (in millisecond). No effect if the Midi is not playing.

```
 // Be carefull when modifying position on fly from GUI.
 // Each change generates 0.2s of pause, avoid little and frequent position
change.
 // Below change is applied only above 2 decimals.
 double currentPosition = Math.Round(midiFilePlayer.MPTK_Position / 1000d, 2);
 double newPosition =
Math.Round(GUILayout.HorizontalSlider((float)currentPosition, 0f,
(float)midiFilePlayer.MPTK_RealDuration.TotalSeconds,
GUILayout.Width(buttonWidth)), 2);
 if (newPosition != currentPosition)
 {
    Debug.Log("New position " + currentPosition + " --> " + newPosition );
    midiFilePlayer.MPTK_Position = newPosition * 1000d;
  }
!
```

long MPTK_TickCurrent `[get]`, `[set]`

Current tick position in Midi: Time of the current midi event expressed in number of "ticks". MPTK_TickCurrent / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

long MPTK_TickLast `[get]`

Last tick position in Midi: Value of the tick for the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

float MPTK_Volume `[get]`, `[set]`

Volume of midi playing. Must be >=0 and <= 1

MidiListPlayer.MPTK_MidiPlayItem

Define a midi to be added in the list

Public Attributes

float EndFrom

Time (ms) position where to end playing the midi file

int Index

Position of the Midi in the list. Use method MPTK_ReIndexMidi() recalculate the index.

string MidiName

Midi Name. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

bool Selected

Select or unselect this Midi to be played in the list ...)

float StartFrom

Time (ms) position where to start playing the midi file

bool UIAction

Select or unselect this Midi in the Inspector to apply actions (reorder, delete, ...) NO MORE USED

Detailed Description

Define a midi to be added in the list

Member Data Documentation

float EndFrom

Time (ms) position where to end playing the midi file

int Index

Position of the Midi in the list. Use method MPTK_ReIndexMidi() recalculate the index.

string MidiName

Midi Name. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

bool Selected

Select or unselect this Midi to be played in the list ...)

float StartFrom

Time (ms) position where to start playing the midi file

bool UIAction

Select or unselect this Midi in the Inspector to apply actions (reorder, delete, ...) NO MORE USED

MidiLoad

Internal class for loading a Midi file. No sequencer, no synthetizer, no music playing capabilities. Usefull to load all the Midi events from a Midi and process, transform, write them to want you want.

Public Member Functions

double MPTK_ConvertTickToTime (long tick)

Convert the tick duration to a real time duration in millisecond regarding the current tempo.

long MPTK_ConvertTimeToTick (double time)

Convert a real time duration in millisecond to a number of tick regarding the current tempo.

bool MPTK_Load (byte[] datamidi, bool strict=false)

Load Midi from an array of bytes

bool MPTK_Load (int index, bool strict=false)

Load Midi from midi MPTK referential (Unity resource). The index of the Midi file can be found in the windo "Midi File Setup". Display with menu MPTK / Midi File Setup

bool MPTK_Load (string midiname, bool strict=false)

Load Midi from a Midi file from Unity resources. The Midi file must be present in Unity MidiDB ressource folder.

bool MPTK_LoadFile (string filename, bool strict=false)

Load Midi from a local file

List< MPTKEvent > MPTK_ReadMidiEvents (long fromTicks=0, long toTicks=long.MaxValue)

Read the list of midi events available in the Midi from a ticks position to an end position.

Public Attributes

int MPTK_DeltaTicksPerQuarterNote

Read from Midi Header: Delta Ticks Per Quarter Note. Represent the duration time in "ticks" which make up a quarter-note. For instance, if 96, then a duration of an eighth-note in the file would be 48. Also named Division.

TimeSpan MPTK_Duration
Duration (TimeSpan) of the midi.

float MPTK_DurationMS
Duration (milliseconds) of the midi.

double MPTK_InitialTempo
Initial tempo found in the Midi

int MPTK_MicrosecondsPerQuarterNote
Read from the SetTempo event: The tempo is given in micro seconds per quarter beat. To convert this to BPM we needs to use the following equation:BPM = 60,000,000/[tt tt tt] Warning: this value can change during the playing when a change tempo event is find. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_No32ndNotesInQuarterNote
From TimeSignature event: This value specifies the number of 1/32nds of a note happen every MIDI quarter note. It is usually 8 which means that a quarter note happens every quarter note. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberBeatsMeasure
From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberQuarterBeat
From TimeSignature event: number of quarter notes in a beat. Equal 2 Power TimeSigDenominator. http://www.deluge.co/?q=midi-tempo-bpm

long MPTK_TickCurrent
Current tick position in Midi: Time of the current midi event expressed in number of "ticks". MPTK_TickCurrent / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

long MPTK_TickFirstNote
Tick for the first note found

long MPTK_TickLast
Last tick position in Midi: Time of the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

int MPTK_TicksInMetronomeClick
From TimeSignature event: The standard MIDI clock ticks every 24 times every quarter note (crotchet) so a [cc] value of 24 would mean that the metronome clicks once every quarter note. A [cc] value of 6 would mean that the metronome clicks once every 1/8th of a note (quaver). http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigDenominator

From TimeSignature event: The denominator specifies the number of quarter notes in a beat. 2 represents a quarter-note, 3 represents an eighth-note, etc. . http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigNumerator

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. In MIDI the denominator value is stored in a special format. i.e. the real denominator = 2^[dd] http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TrackCount

Count of track read in the Midi file

Properties

double MPTK_CurrentTempo `[get]`

Initial tempo found in the Midi

Detailed Description

Internal class for loading a Midi file. No sequencer, no synthetizer, no music playing capabilities. Usefull to load all the Midi events from a Midi and process, transform, write them to want you want.

Member Function Documentation

double MPTK_ConvertTickToTime (long *tick*)

Convert the tick duration to a real time duration in millisecond regarding the current tempo.

Parameters

tick	duration in ticks

Returns

duration in milliseconds

long MPTK_ConvertTimeToTick (double *time*)

Convert a real time duration in millisecond to a number of tick regarding the current tempo.

Parameters

time	duration in milliseconds

Returns

duration in ticks

bool MPTK_Load (byte[] *datamidi*, bool *strict* = `false`)

Load Midi from an array of bytes

Parameters

datamidi	byte arry midi
strict	If true will error on non-paired note events, default:false

Returns

true if loaded

bool MPTK_Load (int *index*, bool *strict* = `false`)

Load Midi from midi MPTK referential (Unity resource). The index of the Midi file can be found in the windo "Midi File Setup". Display with menu MPTK / Midi File Setup

```
public MidiLoad MidiLoaded;
// .....
MidiLoaded = new MidiLoad();
MidiLoaded.MPTK_Load(14) // index for "Beattles - Michelle"
Debug.Log("Duration:" + MidiLoaded.MPTK_Duration);
!
```

Parameters

index	
strict	If true will error on non-paired note events, default:false

Returns

true if loaded

bool MPTK_Load (string *midiname*, bool *strict* = `false`)

Load Midi from a Midi file from Unity resources. The Midi file must be present in Unity MidiDB ressource folder.

```
public MidiLoad MidiLoaded;
// .....
MidiLoaded = new MidiLoad();
MidiLoaded.MPTK_Load("Beattles - Michelle")
Debug.Log("Duration:" + MidiLoaded.MPTK_Duration);
!
```

Parameters

midiname	Midi file name without path and extension
strict	if true, check strict compliance with the Midi norm

Returns

true if loaded

bool MPTK_LoadFile (string *filename*, bool *strict* = `false`)

Load Midi from a local file

Parameters

filename	Midi path and filename to load
strict	if true struct respect of the midi norm is checked

Returns

List<MPTKEvent> MPTK_ReadMidiEvents (long *fromTicks* = `0`, long *toTicks* = `long.MaxValue`)

Read the list of midi events available in the Midi from a ticks position to an end position.

Parameters

fromTicks	ticks start
toTicks	ticks end

Returns

Member Data Documentation

int MPTK_DeltaTicksPerQuarterNote

Read from Midi Header: Delta Ticks Per Quarter Note. Represent the duration time in "ticks" which make up a quarter-note. For instance, if 96, then a duration of an eighth-note in the file would be 48. Also named Division.

TimeSpan MPTK_Duration

Duration (TimeSpan) of the midi.

float MPTK_DurationMS

Duration (milliseconds) of the midi.

double MPTK_InitialTempo

Initial tempo found in the Midi

int MPTK_MicrosecondsPerQuarterNote

Read from the SetTempo event: The tempo is given in micro seconds per quarter beat. To convert this to BPM we needs to use the following equation:BPM = 60,000,000/[tt tt tt] Warning: this value can change during the playing when a change tempo event is find. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_No32ndNotesInQuarterNote

From TimeSignature event: This value specifies the number of 1/32nds of a note happen every MIDI quarter note. It is usually 8 which means that a quarter note happens every quarter note. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberBeatsMeasure

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_NumberQuarterBeat

From TimeSignature event: number of quarter notes in a beat. Equal 2 Power TimeSigDenominator. http://www.deluge.co/?q=midi-tempo-bpm

long MPTK_TickCurrent

Current tick position in Midi: Time of the current midi event expressed in number of "ticks". MPTK_TickCurrent / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

long MPTK_TickFirstNote

Tick for the first note found

long MPTK_TickLast

Last tick position in Midi: Time of the last midi event in sequence expressed in number of "ticks". MPTK_TickLast / MPTK_DeltaTicksPerQuarterNote equal the duration time of a quarter-note regardless the defined tempo.

int MPTK_TicksInMetronomeClick

From TimeSignature event: The standard MIDI clock ticks every 24 times every quarter note (crotchet) so a [cc] value of 24 would mean that the metronome clicks once every quarter note. A [cc] value of 6 would mean that the metronome clicks once every 1/8th of a note (quaver). http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigDenominator

From TimeSignature event: The denominator specifies the number of quarter notes in a beat. 2 represents a quarter-note, 3 represents an eighth-note, etc. . http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TimeSigNumerator

From TimeSignature event: The numerator counts the number of beats in a measure. For example a numerator of 4 means that each bar contains four beats. This is important to know because usually the first beat of each bar has extra emphasis. In MIDI the denominator value is stored in a special format. i.e. the real denominator = 2^[dd] http://www.deluge.co/?q=midi-tempo-bpm

int MPTK_TrackCount

Count of track read in the Midi file

Property Documentation

double MPTK_CurrentTempo `[get]`

Initial tempo found in the Midi

MidiPlayerGlobal

Singleton class to manage all global features of MPTK.
Inherits MonoBehaviour.

Static Public Member Functions

static float MPTK_DistanceToListener (Transform trf)

Calculate distance with the AudioListener.

static int MPTK_FindMidi (string name)

Find index of a Midi by name. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

static bool MPTK_IsReady (float delay=0.5f)

Check if SoudFont is loaded. Add a default wait time because Unity AudioSource need a delay to be really ready to play. Hummm, like a diesel motor ?

static void MPTK_LoadLiveSF (string pathSF, int defaultBank=-1, int drumBank=-1, bool restartPlayer=true)
[MPTK PRO] - Load a SoundFont on the fly when application is running. SoundFont is loaded from a local file or from the web. If some Midis are playing they are restarted.

static void MPTK_Quit ()
Stop all Midi Synthesizer dans Midi Sequencer and exit application

static void MPTK_SelectBankDrum (int nbank)
Change current bank on fly

static void MPTK_SelectBankInstrument (int nbank)
Change default current bank on fly

static void MPTK_SelectSoundFont (string name, bool restartPlayer=true)
[MPTK PRO] - Changing the current Soundfont on fly. If some Midis are playing they are restarted.

static void MPTK_Stop ()
Stop all Midi Synthesizer dans Midi Sequencer

Public Attributes

string MPTK_LiveSoundFont
[MPTK PRO] - Full path to SoundFont file (.sf2) or URL to load. Defined in the MidiPlayerGlobal editor inspector. Must start with file:// or http:// or https://.

Static Public Attributes

static int MPTK_CountWaveLoaded
Count of wave loaded

static List< MPTKListItem > MPTK_ListBank
Get the list of banks available

static List< MPTKListItem > MPTK_ListDrum
Get the list of presets available

static List< MPTKListItem > MPTK_ListMidi
List of midi(s) available

static List< MPTKListItem > MPTK_ListPreset
Get the list of presets available for instruments for the selected bank

static List< MPTKListItem > MPTK_ListPresetDrum
Get the list of presets available for instrument

static bool MPTK_SoundFontLoaded = false
True if soundfont is loaded

Properties

static int MPTK_CountPresetLoaded `[get]`

Count of preset loaded

static List< string > MPTK_ListSoundFont `[get]`

List of Soundfont(s) available

static bool? MPTK_LoadSoundFontAtStartup `[get, set]`

If true load soundfont when startup

static bool? MPTK_LoadWaveAtStartup `[get, set]`

If true load all waves when application is started else load when need when playing (default)

static string MPTK_PathToResources `[get]`

This path could change depending your project. Change the path before any actions in MPTK. DEPRECATED, WILL BE REMOVED.

static TimeSpan MPTK_TimeToLoadSoundFont `[get]`

Load time for the current SoundFont

static TimeSpan MPTK_TimeToLoadWave `[get]`

Load time for the wave

static UnityEvent? OnEventPresetLoaded `[get, set]`

Event triggered at end of loading a soundfont. Warning: when defined by script, this event is not triggered at first load of MPTK because MidiPlayerGlobal is loaded before any other gamecomponent. Set this event in the Inspector of MidiPlayerGlobal to get at first load this information.

Detailed Description

Singleton class to manage all global features of MPTK.

Member Function Documentation

static float MPTK_DistanceToListener (Transform *trf*) `[static]`

Calculate distance with the AudioListener.

Parameters

trf	Transform of the object to calculate the distance.

Returns

static int MPTK_FindMidi (string *name*) [static]

Find index of a Midi by name. Use the exact name defined in Unity resources folder MidiDB without any path or extension. Tips: Add Midi files to your project with the Unity menu MPTK or add it directly in the ressource folder and open Midi File Setup to automatically integrate Midi in MPTK.

Parameters

name	name of the midi without path nor extension

Returns

-1 if not found else return the index of the midi.

static bool MPTK_IsReady (float *delay* = 0.5f) [static]

Check if SoudFont is loaded. Add a default wait time because Unity AudioSource need a delay to be really ready to play. Hummm, like a diesel motor ?

Parameters

delay	

Returns

static void MPTK_LoadLiveSF (string *pathSF*, int *defaultBank* = -1, int *drumBank* = -1, bool *restartPlayer* = true) [static]

[MPTK PRO] - Load a SoundFont on the fly when application is running. SoundFont is loaded from a local file or from the web. If some Midis are playing they are restarted.

Parameters

pathSF	Full path to Midi file or URL to play. must start with file:// or http:// or https://.
defaultBank	default bank to use for instrument, default is the first
drumBank	bank to use for drum kit, default is the last
restartPlayer	Restart MidiFilePlayer

static void MPTK_Quit () [static]

Stop all Midi Synthesizer dans Midi Sequencer and exit application

static void MPTK_SelectBankDrum (int *nbank*) [static]

Change current bank on fly

Parameters

nbank	Number of the SoundFont Bank to load for drum.

static void MPTK_SelectBankInstrument (int *nbank*) [static]

Change default current bank on fly

Parameters

nbank	Number of the SoundFont Bank to load for instrument.

static void MPTK_SelectSoundFont (string *name*, bool *restartPlayer* = true) [static]

[MPTK PRO] - Changing the current Soundfont on fly. If some Midis are playing they are restarted.

Parameters

name	SoundFont name
restartPlayer	if a midi is playing, restart the current playing midi

static void MPTK_Stop () [static]

Stop all Midi Synthesizer dans Midi Sequencer

Member Data Documentation

int MPTK_CountWaveLoaded [static]

Count of wave loaded

List<MPTKListItem> MPTK_ListBank [static]

Get the list of banks available

List<MPTKListItem> MPTK_ListDrum [static]

Get the list of presets available

List<MPTKListItem> MPTK_ListMidi [static]

List of midi(s) available

List<MPTKListItem> MPTK_ListPreset [static]

Get the list of presets available for instruments for the selected bank

List<MPTKListItem> MPTK_ListPresetDrum `[static]`

Get the list of presets available for instrument

string MPTK_LiveSoundFont

[MPTK PRO] - Full path to SoundFont file (.sf2) or URL to load. Defined in the MidiPlayerGlobal editor inspector. Must start with file:// or http:// or https://.

bool MPTK_SoundFontLoaded = false `[static]`

True if soundfont is loaded

Property Documentation

int MPTK_CountPresetLoaded `[static]`, `[get]`

Count of preset loaded

List<string> MPTK_ListSoundFont `[static]`, `[get]`

List of Soundfont(s) available

bool? MPTK_LoadSoundFontAtStartup `[static]`, `[get]`, `[set]`

If true load soundfont when startup

bool? MPTK_LoadWaveAtStartup `[static]`, `[get]`, `[set]`

If true load all waves when application is started else load when need when playing (default)

string MPTK_PathToResources `[static]`, `[get]`

This path could change depending your project. Change the path before any actions in MPTK. DEPRECATED, WILL BE REMOVED.

TimeSpan MPTK_TimeToLoadSoundFont `[static]`, `[get]`

Load time for the current SoundFont

TimeSpan MPTK_TimeToLoadWave `[static]`, `[get]`

Load time for the wave

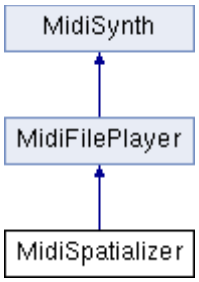
UnityEvent? OnEventPresetLoaded `[static]`, `[get]`, `[set]`

Event triggered at end of loading a soundfont. Warning: when defined by script, this event is not triggered at first load of MPTK because MidiPlayerGlobal is loaded before any other gamecomponent. Set this event in the Inspector of MidiPlayerGlobal to get at first load this information.

MidiSpatializer

[MPTK PRO] - Script associated to the prefab MidiSpatializer. It's quite light because the major job is done with MidiSynth There is no specific API for this prefab. Scripting is necessary to defined position of channel or instrument in your 3D env.

Inheritance diagram for MidiSpatializer:



Additional Inherited Members

Detailed Description

[MPTK PRO] - Script associated to the prefab MidiSpatializer. It's quite light because the major job is done with MidiSynth There is no specific API for this prefab. Scripting is necessary to defined position of channel or instrument in your 3D env.

```
        public void ArrangeInLine(bool fromUI)
        {
            isPositionByInstrument = false;
            //Debug.Log($"ArrangeInLine {midiFilePlayer.MPTK_DedicatedChannel}");
            if (!fromUI)
```

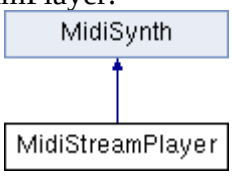
```
            {
                // Useful if called at start for each TestSpatializerFly instanciated
                TestSpatializerFly tsf =
midiFilePlayer.gameObject.GetComponent<TestSpatializerFly>();
                tsf.PosSynth = new Vector3((midiFilePlayer.MPTK_DedicatedChannel *
118) - 950, tsf.PosSynth.y, 0f);
            }
            else
            {
                // Exec from the UI, applied to each MidiFilePlayer (MidiSynth)
                foreach (MidiFilePlayer mfp in MidiFilePlayer.SpatialSynths)
                {
                    TestSpatializerFly tsf =
mfp.gameObject.GetComponent<TestSpatializerFly>();
                    tsf.PosSynth = new Vector3((mfp.MPTK_DedicatedChannel * 118) -
950, tsf.PosSynth.y, 0f);
                }
            }
        }
```

See full example in TestSpatializerFly.cs Available with V2.83.

MidiStreamPlayer

Play generated notes. Any Midi file is necessary rather create music from your own algorithm with MPTK_PlayEvent(). Duration can be set in the MPTKEvent, but a note can also be stopped with MPTK_StopEvent().

Inheritance diagram for MidiStreamPlayer:



Public Member Functions

MPTKChordBuilder MPTK_PlayChordFromLib (MPTKChordBuilder chord)

[MPTK PRO] Play a chord from the chord library. See file ChordLib.csv in folder Resources/GeneratorTemplate. The Tonic is used to buid the chord

MPTKChordBuilder MPTK_PlayChordFromRange (MPTKChordBuilder chord)

[MPTK PRO] Play a chord from the current selected range (MPTK_RangeSelected), Tonic and Degree defined in parameter MPTKChord chord. Major range is selected if no range defined. See file GammeDefinition.csv in folder Resources/GeneratorTemplate

void MPTK_PlayEvent (List< MPTKEvent > events)

Play a list of midi events with a thread so the call return immediately.

void MPTK_PlayEvent (MPTKEvent evnt)

Play one midi event with a thread so the call return immediately.

void MPTK_StopChord (MPTKChordBuilder chord)

Stop playing the chord. All samples associated to the chord are stopped by sending a noteoff.

void MPTK_StopEvent (MPTKEvent pnote)

Stop playing the note. All waves associated to the note are stop by sending a noteoff.

Properties

string? MPTK_RangeName `[get]`

Name of range selected

int MPTK_RangeSelected `[get, set]`

Current selected range

Additional Inherited Members

Detailed Description

Play generated notes. Any Midi file is necessary rather create music from your own algorithm with MPTK_PlayEvent(). Duration can be set in the MPTKEvent, but a note can also be stopped with MPTK_StopEvent().

Member Function Documentation

MPTKChordBuilder MPTK_PlayChordFromLib (MPTKChordBuilder *chord*)

[MPTK PRO] Play a chord from the chord library. See file ChordLib.csv in folder Resources/GeneratorTemplate. The Tonic is used to buid the chord

Parameters

chord	required: Tonic and FromLib on top of the classical Midi parameters

Returns

MPTKChordBuilder MPTK_PlayChordFromRange (MPTKChordBuilder *chord*)

[MPTK PRO] Play a chord from the current selected range (MPTK_RangeSelected), Tonic and Degree defined in parameter MPTKChord chord. Major range is selected if no range defined. See file GammeDefinition.csv in folder Resources/GeneratorTemplate

Parameters

chord	required: Tonic and Degree on top of the classical Midi parameters

Returns

void MPTK_PlayEvent (List< MPTKEvent > *events*)

Play a list of midi events with a thread so the call return immediately.

```
        private void PlayOneNote()
        {
            // Start playint a new note
```

```
            NotePlaying = new MPTKEvent()
            {
                Command = MPTKCommand.NoteOn,
                Value = CurrentNote,
                Channel = StreamChannel,
                Duration = Convert.ToInt64(NoteDuration * 1000f), // millisecond,
-1 to play undefinitely
                Velocity = Velocity, // Sound can vary depending on the velocity
                Delay = Convert.ToInt64(NoteDelay * 1000f),
            };
            midiStreamPlayer.MPTK_PlayEvent(NotePlaying);
        }
```

void MPTK_PlayEvent (MPTKEvent *evnt*)

Play one midi event with a thread so the call return immediately.

```
                midiStreamPlayer.MPTK_PlayEvent
                (
                    new MPTKEvent()
                    {
                        Channel = 9,
                        Duration = 999999,
                        Value = 48,
                        Velocity = 100
                    }
                );
```

void MPTK_StopChord (MPTKChordBuilder *chord*)

Stop playing the chord. All samples associated to the chord are stopped by sending a noteoff.

Parameters

chord	

void MPTK_StopEvent (MPTKEvent *pnote*)

Stop playing the note. All waves associated to the note are stop by sending a noteoff.

Parameters

pnote	

Property Documentation

string? MPTK_RangeName `[get]`

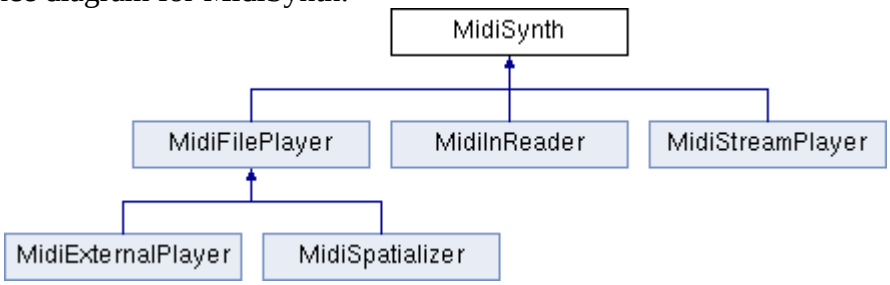
Name of range selected

int MPTK_RangeSelected `[get]`, `[set]`

Current selected range

MidiSynth

Inheritance diagram for MidiSynth:



Public Member Functions

int MPTK_ChannelBankGetIndex (int channel)

Get channel bank.

int MPTK_ChannelCount ()

Get channel count. The midi norm is 16, but MPTK can manage up to 32 channels.

bool MPTK_ChannelEnableGet (int channel)

Get channel state.

void MPTK_ChannelEnableSet (int channel, bool enable)

Enable or disable a channel.

int MPTK_ChannelNoteCount (int channel)

Get count of notes played since the beguinning of the Midi.

bool MPTK_ChannelPresetChange (int channel, int preset, int newbank=-1)

Change the preset and bank for the channel. When playing a Midi file, the preset is set by channel with the Midi message Patch Change. The bank is changed with a ControlChange Midi message.

The new value of the bank is local for the channel, the preset list is not updated. To change globally the bank, use instead the golbal methods: MidiPlayerGlobal.MPTK_SelectBankInstrument or MidiPlayerGlobal.MPTK_SelectBankDrum

int MPTK_ChannelPresetGetIndex (int channel)

Get channel preset indx.

string MPTK_ChannelPresetGetName (int channel)

Get channel current preset name.

float MPTK_ChannelVolumeGet (int channel)

Get the volume of the channel

void MPTK_ChannelVolumeSet (int channel, float volume)
Set the volume for a channel. New with V2.82, works only in Core mode.

void MPTK_ChorusSetDefault ()
[MPTK PRO] - Set Chorus Unity default value as defined with Unity.

void MPTK_ClearAllSound (bool destroyAudioSource=false)
Clear all sound by sending note off. That could take some seconds because release time for sample need to be played.

void MPTK_InitSynth (int channelCount=16)
Initialize the synthetizer: channel, voices, modulator. It's not usefull to call this method if you are using prefabs (MidiFilePlayer, MidiStreamPlayer, ...). Each gameObjects created from these prefabs have their own, autonomous and isolated synth.

void MPTK_ResetStat ()
Reset voices statistics

void MPTK_ReverbSetDefault ()
[MPTK PRO] - Set Reverb Unity default value as defined with Unity.

void MPTK_StartSequencerMidi ()
Start the Midi sequencer: each midi events are read and play in a dedicated thread. This thread is automatically stared by prefabs MidiFilePlayer, MidiListPlayer, MidiExternalPlayer.

void MPTK_StopSynth ()
Stop processing samples by the synth and the Midi sequencer.

void MPTK_WaitAllNotesOff ()
Wait until all notes are off. That could take some seconds because release time for sample need to be played. Therefor the method exit after a timeout of 3 seconds.

Public Attributes

bool MPTK_ApplySFChorus
[MPTK PRO] - Apply chorus effect as defined in the SoundFont. This effect is processed with the fluidsynth algo independently on each voices but with a small decrease of performace (10%).

bool MPTK_ApplySFFilter
[MPTK PRO] - Apply frequency low-pass filter as defined in the SoundFont. This effect is processed with the fluidsynth algo independently on each voices but with a small decrease of performace (40%).

bool MPTK_ApplySFReverb
[MPTK PRO] - Apply reverberation effect as defined in the SoundFont. This effect is processed with the fluidsynth algo independently on each voices but with a small decrease of performace (40%).

int MPTK_AutoCleanVoiceLimit

Free voices older than MPTK_AutoCleanVoiceLimit are removed when count is over than MPTK_AutoCleanVoiceTime

bool MPTK_CorePlayer

If true then Midi events are read and play from a dedicated thread. If false, MidiSynth will use AudioSource gameobjects to play sound. This properties must be defined before running the application from the inspector. The default is true. The non core mode player will be removed with the next major version (V3)

bool MPTK_DirectSendToPlayer

If true (default) then Midi events are sent automatically to the midi player. Set to false if you want to process events without playing sound. OnEventNotesMidi Unity Event can be used to process each notes.

bool MPTK_EnableChangeTempo

Should accept change tempo from Midi Events ?

bool MPTK_EnablePanChange

Should change pan from Midi Events or from SoundFont ? Pan is disabled when Spatialization is activated.

bool MPTK_EnablePresetDrum

Should accept change Preset for Drum canal 10 ? Disabled by default. Could sometimes create bad sound with midi files not really compliant with the Midi norm.

bool MPTK_KillByExclusiveClass = true

V2.83 Find the exclusive class of this voice. If set, kill all voices that match the exclusive class and are younger than the first voice process created by this noteon event.

bool MPTK_LogWave

Log for each wave to be played

bool MPTK_ReleaseSameNote = true

V2.83. If the same note is hit twice on the same channel, then the older voice process is advanced to the release stage. It's the default Midi processing.

uint MPTK_ReleaseTimeMin = 500000

[Only when CorePlayer=False] Define a minimum release time at noteoff in 100 iem nanoseconds. Default 50 ms is a good tradeoff. Below some unpleasant sound could be heard. Useless when MPTK_CorePlayer is true.

float MPTK_SFChorusAmplify

[MPTK PRO] - Chorus level is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

float MPTK_SFFilterFreqOffset = 0f

[MPTK PRO] - Frequency cutoff is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

float MPTK_SFReverbAmplify

[MPTK PRO] - Reverberation level is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

int MPTK_StatVoiceCountActive

Count of the active voices (playing) - Readonly

int MPTK_StatVoiceCountFree

Count of the free voices for reusing on need. Older than AutoCleanVoiceTime are removed when count is over than AutoCleanVoiceLimit - Readonly

int MPTK_StatVoicePlayed

Count of voice played since the start of the synth

float MPTK_StatVoiceRatioReused

Percentage of voice reused during the synth life. 0: any reuse, 100:all voice reused (unattainable, of course!)

bool MPTK_WeakDevice

Should play on a weak device (cheaper smartphone) ? Apply only with AudioSource mode (MPTK_CorePlayer=False) Playing Midi files with WeakDevice activated could cause some bad interpretation of Midi Event, consequently bad sound.

EventSynthClass OnEventSynthAwake

Unity event fired at awake of the synthesizer. Name of the gameobject component is passed as a parameter.

EventSynthClass OnEventSynthStarted

Unity event fired at start of the synthesizer. Name of the gameobject component is passed as a parameter.

Static Public Attributes

static MidiFilePlayer[] SpatialSynths

Contains each MidiSynth for each channel when the prefab MidiSpatializer is used and IsMidiChannelSpace=true. Warning: only one MidiSpatializer can be used in a hierarchy.

Properties

bool MPTK_ApplyUnityChorus `[get, set]`

[MPTK PRO] - Apply Chorus Unity effect to the AudioSource. The effect is applied to all voices.

bool MPTK_ApplyUnityReverb `[get, set]`

[MPTK PRO] - Apply Reverb Unity effect to the AudioSource. The effect is applied to all voices.

float MPTK_ChorusDelay `[get, set]`

[MPTK PRO] - Chorus delay in ms. 0.1 to 100. Default = 40 ms.

float MPTK_ChorusDepth `[get, set]`

[MPTK PRO] - Chorus modulation depth. 0 to 1. Default = 0.03.

float MPTK_ChorusDryMix `[get, set]`

[MPTK PRO] - Volume of original signal to pass to output. 0 to 1. Default = 0.5.

float MPTK_ChorusRate `[get, set]`

[MPTK PRO] - Chorus modulation rate in hz. 0 to 20. Default = 0.8 hz.

float MPTK_ChorusWetMix1 `[get, set]`

[MPTK PRO] - Volume of 1st chorus tap. 0 to 1. Default = 0.5.

float MPTK_ChorusWetMix2 `[get, set]`

[MPTK PRO] - Volume of 2nd chorus tap. This tap is 90 degrees out of phase of the first tap. 0 to 1. Default = 0.5.

float MPTK_ChorusWetMix3 `[get, set]`

[MPTK PRO] - Volume of 3rd chorus tap. This tap is 90 degrees out of phase of the second tap. 0 to 1. Default = 0.5.

int MPTK_DedicatedChannel `[get]`

Dedicated Channel for this MidiSynth when the prefab MidiSpatializer is used. The MidiSynth reader (from a midi file) has no channel because no voice is played, so DedicatedChannel is set to -1

int MPTK_IndexSynthBuffSize `[get, set]`

Set or Get sample rate output of the synth. -1:default, 0:24000, 1:36000, 2:48000, 3:60000, 4:72000, 5:84000, 6:96000. It's better to stop playing before changing on fly to avoid bad noise.

int MPTK_IndexSynthRate `[get, set]`

Set or Get sample rate output of the synth. -1:default, 0:24000, 1:36000, 2:48000, 3:60000, 4:72000, 5:84000, 6:96000. It's better to stop playing before changing on fly to avoid bad noise.

float MPTK_MaxDistance `[get, set]`

If MPTK_Spatialize is enabled, the volume of the audio source depends on the distance between the audio source and the listener. Beyong this distance, the volume is set to 0 and the midi player is paused. No effect if MPTK_Spatialize is disabled.

bool MPTK_PauseOnDistance `[get, set]`

[obsolete] replaced by MPTK_Spatialize"); V2.83

float MPTK_ReverbDecayHFRatio `[get, set]`

[MPTK PRO] - Decay HF Ratio : High-frequency to low-frequency decay time ratio. Ranges from 0.1 to 2.0.

float MPTK_ReverbDecayTime `[get, set]`

[MPTK PRO] - Reverberation decay time at low-frequencies in seconds. Ranges from 0.1 to 20. Default is 1.

float MPTK_ReverbDelay `[get, set]`

[MPTK PRO] - Late reverberation delay time relative to first reflection in seconds. Ranges from 0 to 0.1. Default is 0.04

float MPTK_ReverbDensity `[get, set]`

[MPTK PRO] - Reverberation density (modal density) in percent. Ranges from 0 to 1.

float MPTK_ReverbDiffusion `[get, set]`

[MPTK PRO] - Reverberation diffusion (echo density) in percent. Ranges from 0 to 1. Default is 1.

float MPTK_ReverbDryLevel `[get, set]`

[MPTK PRO] - Mix level of dry signal in output. Ranges from 0 to 1.

float MPTK_ReverbHFReference `[get, set]`

[MPTK PRO] - Reference high frequency in Hz. Ranges from 1000 to 20000. Default is 5000

float MPTK_ReverbLevel `[get, set]`

[MPTK PRO] - Late reverberation level relative to room effect. Ranges from 0 to 1.

float MPTK_ReverbLFReference `[get, set]`

[MPTK PRO] - Reference low-frequency in Hz. Ranges from 20 to 1000. Default is 250

float MPTK_ReverbReflectionDelay `[get, set]`

[MPTK PRO] - Late reverberation level relative to room effect. Ranges from -10000.0 to 2000.0. Default is 0.0.

float MPTK_ReverbReflectionLevel `[get, set]`

[MPTK PRO] - Early reflections level relative to room effect. Ranges from 0 to 1.

float MPTK_ReverbRoom `[get, set]`

[MPTK PRO] - Room effect level at low frequencies. Ranges from 0 to 1.

float MPTK_ReverbRoomHF `[get, set]`

[MPTK PRO] - Room effect high-frequency level. Ranges from 0 to 1.

float MPTK_ReverbRoomLF `[get, set]`

[MPTK PRO] - Room effect low-frequency level. Ranges from 0 to 1.

float MPTK_SFFilterQModOffset `[get, set]`

[MPTK PRO] - Quality Factor is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

bool MPTK_Spatialize `[get, set]`

Should the Spatialization effect must be enabled? See here how to setup spatialization with Unity https://paxstellar.fr/midi-file-player-detailed-view-2/#Foldout-Spatialization-Parameters

int MPTK_Transpose `[get, set]`

Transpose note from -24 to 24

float MPTK_Volume `[get, set]`

Volume of midi playing. Must be >=0 and <= 1

Detailed Description

[MPTK PRO] - class extention

Base class for Midi Synthesizer. Migrated from fluidsynth. It's not recommended to instanciate this class. Instead use MidiFilePlayer or MidiStreamPlayer.

Member Function Documentation

int MPTK_ChannelBankGetIndex (int *channel*)

Get channel bank.

Parameters

channel	must be between 0 and 15

int MPTK_ChannelCount ()

Get channel count. The midi norm is 16, but MPTK can manage up to 32 channels.

Parameters

channel	must be between 0 and 15

bool MPTK_ChannelEnableGet (int *channel*)

Get channel state.

Parameters

channel	must be between 0 and 15

void MPTK_ChannelEnableSet (int *channel*, bool *enable*)

Enable or disable a channel.

Parameters

channel	must be between 0 and 15
enable	true to enable

int MPTK_ChannelNoteCount (int *channel*)

Get count of notes played since the beguinning of the Midi.

Parameters

channel	must be between 0 and 15

bool MPTK_ChannelPresetChange (int *channel*, int *preset*, int *newbank* = -1)

Change the preset and bank for the channel. When playing a Midi file, the preset is set by channel with the Midi message Patch Change. The bank is changed with a ControlChange Midi message.

The new value of the bank is local for the channel, the preset list is not updated. To change globally the bank, use instead the golbal methods: MidiPlayerGlobal.MPTK_SelectBankInstrument or MidiPlayerGlobal.MPTK_SelectBankDrum

Parameters

channel	There is 16 channels available in the Midi norm.
preset	The count of presets is dependant of the soundfont selected
newbank	optionnal, use the default bank defined globally

Returns

true if preset change is done

int MPTK_ChannelPresetGetIndex (int *channel*)

Get channel preset indx.

Parameters

channel	must be between 0 and 15

string MPTK_ChannelPresetGetName (int *channel*)

Get channel current preset name.

Parameters

channel	must be between 0 and 15

float MPTK_ChannelVolumeGet (int *channel*)

Get the volume of the channel

Parameters

channel	must be between 0 and 15

Returns

void MPTK_ChannelVolumeSet (int *channel*, float *volume*)

Set the volume for a channel. New with V2.82, works only in Core mode.

Parameters

channel	must be between 0 and 15
volume	

void MPTK_ChorusSetDefault ()

[MPTK PRO] - Set Chorus Unity default value as defined with Unity.

void MPTK_ClearAllSound (bool *destroyAudioSource* = `false`)

Clear all sound by sending note off. That could take some seconds because release time for sample need to be played.

Parameters

destroyAudioSource	Destroy also audioSource (default:false). Apply only for non Core mode

```
  if (GUILayout.Button("Clear"))
     midiStreamPlayer.MPTK_ClearAllSound(true);
!
```

void MPTK_InitSynth (int *channelCount* = `16`)

Initialize the synthetizer: channel, voices, modulator. It's not usefull to call this method if you are using prefabs (MidiFilePlayer, MidiStreamPlayer, ...). Each gameObjects created from these prefabs have their own, autonomous and isolated synth.

Parameters

channelCount	Number of channel to create, default 16. Any other values are experimental!

void MPTK_ResetStat ()

Reset voices statistics

void MPTK_ReverbSetDefault ()

[MPTK PRO] - Set Reverb Unity default value as defined with Unity.

void MPTK_StartSequencerMidi ()

Start the Midi sequencer: each midi events are read and play in a dedicated thread. This thread is automatically stared by prefabs MidiFilePlayer, MidiListPlayer, MidiExternalPlayer.

void MPTK_StopSynth ()

Stop processing samples by the synth and the Midi sequencer.

void MPTK_WaitAllNotesOff ()

Wait until all notes are off. That could take some seconds because release time for sample need to be played. Therefor the method exit after a timeout of 3 seconds.

Returns

Member Data Documentation

bool MPTK_ApplySFChorus

[MPTK PRO] - Apply chorus effect as defined in the SoundFont. This effect is processed with the fluidsynth algo independently on each voices but with a small decrease of performace (10%).

bool MPTK_ApplySFFilter

[MPTK PRO] - Apply frequency low-pass filter as defined in the SoundFont. This effect is processed with the fluidsynth algo independently on each voices but with a small decrease of performace (40%).

bool MPTK_ApplySFReverb

[MPTK PRO] - Apply reverberation effect as defined in the SoundFont. This effect is processed with the fluidsynth algo independently on each voices but with a small decrease of performace (40%).

int MPTK_AutoCleanVoiceLimit

Free voices older than MPTK_AutoCleanVoiceLimit are removed when count is over than MPTK_AutoCleanVoiceTime

bool MPTK_CorePlayer

If true then Midi events are read and play from a dedicated thread. If false, MidiSynth will use AudioSource gameobjects to play sound. This properties must be defined before running the application from the inspector. The default is true. The non core mode player will be removed with the next major version (V3)

bool MPTK_DirectSendToPlayer

If true (default) then Midi events are sent automatically to the midi player. Set to false if you want to process events without playing sound. OnEventNotesMidi Unity Event can be used to process each notes.

bool MPTK_EnableChangeTempo

Should accept change tempo from Midi Events ?

bool MPTK_EnablePanChange

Should change pan from Midi Events or from SoundFont ? Pan is disabled when Spatialization is activated.

bool MPTK_EnablePresetDrum

Should accept change Preset for Drum canal 10 ? Disabled by default. Could sometimes create bad sound with midi files not really compliant with the Midi norm.

bool MPTK_KillByExclusiveClass = true

V2.83 Find the exclusive class of this voice. If set, kill all voices that match the exclusive class and are younger than the first voice process created by this noteon event.

bool MPTK_LogWave

Log for each wave to be played

bool MPTK_ReleaseSameNote = true

V2.83. If the same note is hit twice on the same channel, then the older voice process is advanced to the release stage. It's the default Midi processing.

uint MPTK_ReleaseTimeMin = 500000

[Only when CorePlayer=False] Define a minimum release time at noteoff in 100 iem nanoseconds. Default 50 ms is a good tradeoff. Below some unpleasant sound could be heard. Useless when MPTK_CorePlayer is true.

float MPTK_SFChorusAmplify

[MPTK PRO] - Chorus level is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

float MPTK_SFFilterFreqOffset = 0f

[MPTK PRO] - Frequency cutoff is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

float MPTK_SFReverbAmplify

[MPTK PRO] - Reverberation level is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

int MPTK_StatVoiceCountActive

Count of the active voices (playing) - Readonly

int MPTK_StatVoiceCountFree

Count of the free voices for reusing on need. Older than AutoCleanVoiceTime are removed when count is over than AutoCleanVoiceLimit - Readonly

int MPTK_StatVoicePlayed

Count of voice played since the start of the synth

float MPTK_StatVoiceRatioReused

Percentage of voice reused during the synth life. 0: any reuse, 100:all voice reused (unattainable, of course!)

bool MPTK_WeakDevice

Should play on a weak device (cheaper smartphone) ? Apply only with AudioSource mode (MPTK_CorePlayer=False) Playing Midi files with WeakDevice activated could cause some bad interpretation of Midi Event, consequently bad sound.

EventSynthClass OnEventSynthAwake

Unity event fired at awake of the synthesizer. Name of the gameobject component is passed as a parameter.

```
 ...
 if (!midiStreamPlayer.OnEventSynthAwake.HasEvent())
    midiStreamPlayer.OnEventSynthAwake.AddListener(StartLoadingSynth);
 ...
 public void StartLoadingSynth(string name)
 {
     Debug.LogFormat("Synth {0} loading", name);
 }
!
```

EventSynthClass OnEventSynthStarted

Unity event fired at start of the synthesizer. Name of the gameobject component is passed as a parameter.

```
 ...
 if (!midiStreamPlayer.OnEventStartSynth.HasEvent())
    midiStreamPlayer.OnEventStartSynth.AddListener(EndLoadingSynth);
 ...
 public void EndLoadingSynth(string name)
 {
    Debug.LogFormat("Synth {0} loaded", name);
    midiStreamPlayer.MPTK_PlayEvent(
       new MPTKEvent() { Command = MPTKCommand.PatchChange, Value =
CurrentPatchInstrument, Channel = StreamChannel});
 }
!
```

MidiFilePlayer [] SpatialSynths `[static]`

Contains each MidiSynth for each channel when the prefab MidiSpatializer is used and IsMidiChannelSpace=true. Warning: only one MidiSpatializer can be used in a hierarchy.

Property Documentation

bool MPTK_ApplyUnityChorus `[get]`, `[set]`

[MPTK PRO] - Apply Chorus Unity effect to the AudioSource. The effect is applied to all voices.

bool MPTK_ApplyUnityReverb `[get]`, `[set]`

[MPTK PRO] - Apply Reverb Unity effect to the AudioSource. The effect is applied to all voices.

float MPTK_ChorusDelay `[get], [set]`

[MPTK PRO] - Chorus delay in ms. 0.1 to 100. Default = 40 ms.

float MPTK_ChorusDepth `[get], [set]`

[MPTK PRO] - Chorus modulation depth. 0 to 1. Default = 0.03.

float MPTK_ChorusDryMix `[get], [set]`

[MPTK PRO] - Volume of original signal to pass to output. 0 to 1. Default = 0.5.

float MPTK_ChorusRate `[get], [set]`

[MPTK PRO] - Chorus modulation rate in hz. 0 to 20. Default = 0.8 hz.

float MPTK_ChorusWetMix1 `[get], [set]`

[MPTK PRO] - Volume of 1st chorus tap. 0 to 1. Default = 0.5.

float MPTK_ChorusWetMix2 `[get], [set]`

[MPTK PRO] - Volume of 2nd chorus tap. This tap is 90 degrees out of phase of the first tap. 0 to 1. Default = 0.5.

float MPTK_ChorusWetMix3 `[get], [set]`

[MPTK PRO] - Volume of 3rd chorus tap. This tap is 90 degrees out of phase of the second tap. 0 to 1. Default = 0.5.

int MPTK_DedicatedChannel `[get]`

Dedicated Channel for this MidiSynth when the prefab MidiSpatializer is used. The MidiSynth reader (from a midi file) has no channel because no voice is played, so DedicatedChannel is set to -1

int MPTK_IndexSynthBuffSize `[get], [set]`

Set or Get sample rate output of the synth. -1:default, 0:24000, 1:36000, 2:48000, 3:60000, 4:72000, 5:84000, 6:96000. It's better to stop playing before changing on fly to avoid bad noise.

int MPTK_IndexSynthRate `[get]`, `[set]`

Set or Get sample rate output of the synth. -1:default, 0:24000, 1:36000, 2:48000, 3:60000, 4:72000, 5:84000, 6:96000. It's better to stop playing before changing on fly to avoid bad noise.

float MPTK_MaxDistance `[get]`, `[set]`

If MPTK_Spatialize is enabled, the volume of the audio source depends on the distance between the audio source and the listener. Beyong this distance, the volume is set to 0 and the midi player is paused. No effect if MPTK_Spatialize is disabled.

bool MPTK_PauseOnDistance `[get]`, `[set]`

[obsolete] replaced by MPTK_Spatialize"); V2.83

float MPTK_ReverbDecayHFRatio `[get]`, `[set]`

[MPTK PRO] - Decay HF Ratio : High-frequency to low-frequency decay time ratio. Ranges from 0.1 to 2.0.

float MPTK_ReverbDecayTime `[get]`, `[set]`

[MPTK PRO] - Reverberation decay time at low-frequencies in seconds. Ranges from 0.1 to 20. Default is 1.

float MPTK_ReverbDelay `[get]`, `[set]`

[MPTK PRO] - Late reverberation delay time relative to first reflection in seconds. Ranges from 0 to 0.1. Default is 0.04

float MPTK_ReverbDensity `[get]`, `[set]`

[MPTK PRO] - Reverberation density (modal density) in percent. Ranges from 0 to 1.

float MPTK_ReverbDiffusion `[get]`, `[set]`

[MPTK PRO] - Reverberation diffusion (echo density) in percent. Ranges from 0 to 1. Default is 1.

float MPTK_ReverbDryLevel `[get], [set]`

[MPTK PRO] - Mix level of dry signal in output. Ranges from 0 to 1.

float MPTK_ReverbHFReference `[get], [set]`

[MPTK PRO] - Reference high frequency in Hz. Ranges from 1000 to 20000. Default is 5000

float MPTK_ReverbLevel `[get], [set]`

[MPTK PRO] - Late reverberation level relative to room effect. Ranges from 0 to 1.

float MPTK_ReverbLFReference `[get], [set]`

[MPTK PRO] - Reference low-frequency in Hz. Ranges from 20 to 1000. Default is 250

float MPTK_ReverbReflectionDelay `[get], [set]`

[MPTK PRO] - Late reverberation level relative to room effect. Ranges from -10000.0 to 2000.0. Default is 0.0.

float MPTK_ReverbReflectionLevel `[get], [set]`

[MPTK PRO] - Early reflections level relative to room effect. Ranges from 0 to 1.

float MPTK_ReverbRoom `[get], [set]`

[MPTK PRO] - Room effect level at low frequencies. Ranges from 0 to 1.

float MPTK_ReverbRoomHF `[get], [set]`

[MPTK PRO] - Room effect high-frequency level. Ranges from 0 to 1.

float MPTK_ReverbRoomLF `[get], [set]`

[MPTK PRO] - Room effect low-frequency level. Ranges from 0 to 1.

float MPTK_SFFilterQModOffset `[get], [set]`

[MPTK PRO] - Quality Factor is defined in the SoundFont for each notes. This parameter increase or decrease the default SoundFont value.

bool MPTK_Spatialize `[get], [set]`

Should the Spatialization effect must be enabled? See here how to setup spatialization with Unity https://paxstellar.fr/midi-file-player-detailed-view-2/#Foldout-Spatialization-Parameters

int MPTK_Transpose `[get], [set]`

Transpose note from -24 to 24

float MPTK_Volume `[get], [set]`

Volume of midi playing. Must be >=0 and <= 1

MPTKChordBuilder

[MPTK PRO] Chord builder class for MPTK. Usage to generate Midi Music with MidiStreamPlayer - V2.82 new

Public Member Functions

MPTKChordBuilder (bool log=false)

Create a default chord: tonic=C4, degree=1, count note=3.

void MPTK_BuildFromLib (int pindex)

[MPTK PRO] Build a chord from the current chord in the lib ChordLib.csv in folder Resources/GeneratorTemplate.csv

void MPTK_BuildFromRange (MPTKRangeLib range=null)

[MPTK PRO] Build a chord from the current selected range (MPTK_RangeSelected), Tonic and Degree are to be defined in parameter MPTKChord chord. Major range is selected if no range defined. After the call, Events contains all notes for the chord.

Public Attributes

long Arpeggio

Delay in millisecond between each notes in the chord (play an arpeggio).

int Channel

Midi channel fom 0 to 15 (9 for drum)

int Count

Count of notes to compose the chord. Between 2 and 20.

int Degree

Scale Degree. Between 1 and 7.

long Delay

Delay in millisecond before playing the chord.

long Duration

Duration of the chord in millisecond. Set -1 to play undefinitely.

List< MPTKEvent > Events

List of midi events played for this chord. This list is build when call to MPTK_PlayChord or MPTK_PlayChordFromLib is done else null.

int FromLib

Index of the chord in the libraries file ChordLib.csv in folder Resources/GeneratorTemplate.csv. To be used with MidiStreamPlayer.MPTK_PlayChordFromLib(MPTKChord chord)

int Tonic

Tonic (Root) for the chord. 48=C4, ... , 60=C5, 61=C5#, 62=D5, ... , 72=C6, ...

int Velocity

Velocity between 0 and 127

Detailed Description

[MPTK PRO] Chord builder class for MPTK. Usage to generate Midi Music with MidiStreamPlayer - V2.82 new

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Constructor & Destructor Documentation

MPTKChordBuilder (bool *log* = `false`)

Create a default chord: tonic=C4, degree=1, count note=3.

Parameters

log	True to display log

Member Function Documentation

void MPTK_BuildFromLib (int *pindex*)

[MPTK PRO] Build a chord from the current chord in the lib ChordLib.csv in folder Resources/GeneratorTemplate.csv

Parameters

pindex	position from 0 in ChordLib.csv

void MPTK_BuildFromRange (MPTKRangeLib *range* = `null`)

[MPTK PRO] Build a chord from the current selected range (MPTK_RangeSelected), Tonic and Degree are to be defined in parameter MPTKChord chord. Major range is selected if no range defined. After the call, Events contains all notes for the chord.

Parameters

range	

Member Data Documentation

long Arpeggio

Delay in millisecond between each notes in the chord (play an arpeggio).

int Channel

Midi channel fom 0 to 15 (9 for drum)

int Count

Count of notes to compose the chord. Between 2 and 20.

int Degree

Scale Degree. Between 1 and 7.

`I` Tonic First
`II` Supertonic Second
`III` Mediant Maj or min Third

`IV` Subdominant Fourth
`V` Dominant Fifth
`VI` Submediant Maj or min Sixth
`VII` Leading Tone/Subtonic Maj or min Seventh Good reading here:
https://lotusmusic.com/lm_chordnames.html

long Delay

Delay in millisecond before playing the chord.

long Duration

Duration of the chord in millisecond. Set -1 to play undefinitely.

List<MPTKEvent> Events

List of midi events played for this chord. This list is build when call to MPTK_PlayChord or MPTK_PlayChordFromLib is done else null.

int FromLib

Index of the chord in the libraries file ChordLib.csv in folder Resources/GeneratorTemplate.csv. To be used with MidiStreamPlayer.MPTK_PlayChordFromLib(MPTKChord chord)

int Tonic

Tonic (Root) for the chord. 48=C4, ... , 60=C5, 61=C5#, 62=D5, ... , 72=C6, ...

int Velocity

Velocity between 0 and 127

MPTKChordLib

[MPTK PRO] - Load library of chord from ChordLib.csv in folder Resources/GeneratorTemplate.csv - V2.82 new

Public Attributes

int Count

Count of notes in the chord

int Index
Position in the list

string Modifier3
Some indicator when available.

string Modifier7
string Name
Long name of the scale

Properties

static int ChordCount `[get]`
Count of chords availables

static List< MPTKChordLib > Chords `[get]`
List of chords availables.

int this[int index] `[get]`
Delta in 1/2 ton from the tonic, so first index=0 return 0 regardless the chord selected.

Detailed Description

[MPTK PRO] - Load library of chord from ChordLib.csv in folder Resources/GeneratorTemplate.csv - V2.82 new

---

Member Data Documentation

int Count

Count of notes in the chord

int Index

Position in the list

string Modifier3

Some indicator when available.

`M` = major
`m` = minor
`A` = augmented
`D` = diminished
`S` = Suspended
`empty` = undetermined

string Modifier7

Chord contains a 7iem
`7` = major
`empty` = undetermined

string Name

Long name of the scale

Property Documentation

int ChordCount `[static]`, `[get]`

Count of chords availables

List<MPTKChordLib> Chords `[static]`, `[get]`

List of chords availables.

int this[int index] `[get]`

Delta in 1/2 ton from the tonic, so first index=0 return 0 regardless the chord selected.

Parameters

index	Position in the scale. If exceed count of notes in the scale, the delta in 1/2 tons is taken from the next octave.

Returns

Delta in 1/2 ton from the tonic

MPTKEvent

Midi Event class for MPTK. Use this class to generate Midi Music with MidiStreamPlayer or to read midi events from a Midi file with MidiLoad or to receive midi events from MidiFilePlayer OnEventNotesMidi. With this class, you can: play and stop a note, change instrument (preset, patch,

...), change some control as modulation
Inherits ICloneable.

Public Types

enum EnumLength

Note length as https://en.wikipedia.org/wiki/Note_value

Public Member Functions

MPTKEvent (ulong data)

Create a MPTK Midi event from a midi input message

override string ToString ()

Build a string description of the Midi event. V2.83 removes

on each returns string

Public Attributes

int Channel

Midi channel fom 0 to 15 (9 for drum)

MPTKCommand Command

Midi Command code. Defined the type of message (Note On, Control Change, Patch Change...)

MPTKController Controller

Controller code. When the Command is ControlChange, contains the code fo the controller to change (Modulation, Pan, Bank Select ...). Value will contains the value of the controller.

long Delay

Delay before playing the note in millisecond. New with V2.82, works only in Core mode.

long Duration

Duration of the note in millisecond. Set -1 to play undefinitely.

string Info

Information hold by textual meta event when Command=MetaEvent

int Length

Duration of the note in Midi Tick. MidiFilePlayer.MPTK_NoteLength can be used to convert this duration. Not used for MidiStreamPlayer, length is set only when reading a Midi file. https://en.wikipedia.org/wiki/Note_value

MPTKMeta Meta

MetaEvent Code. When the Command is MetaEvent, contains the code of the meta event (Lyric, TimeSignature, ...). . Info will contains the value of the meta.

uint Source

Origine of the message. Midi ID if from Midi Input else zero. V2.83: rename source to Source et set public.

long Tick
Time in Midi Tick (part of a Beat) of the Event since the start of playing the midi file. This time is independent of the Tempo or Speed. Not used for MidiStreamPlayer.

long Track
Index of track.

int Value
Contains a value between 0 and 127 in relation with the Command. For:

int Velocity
Velocity between 0 and 127

List< fluid_voice > Voices
List of voices associated to this Event for playing a NoteOn event.

Detailed Description

Midi Event class for MPTK. Use this class to generate Midi Music with MidiStreamPlayer or to read midi events from a Midi file with MidiLoad or to receive midi events from MidiFilePlayer OnEventNotesMidi. With this class, you can: play and stop a note, change instrument (preset, patch, ...), change some control as modulation

```
!
! // Change instrument to Marimba for channel 0
! NotePlaying = new MPTKEvent() {
!         Command = MPTKCommand.NoteOn,
!         Value = 12, // generally Marimba but depend on the SoundFont selected
!         Channel = 0 }; // Instrument are defined by channel. So at any time, only 16
différents instruments can be used simultaneously.
! midiStreamPlayer.MPTK_PlayEvent(NotePlaying);
!
! // Play a C5 during one second with the Marimba instrument
! NotePlaying = new MPTKEvent() {
!         Command = MPTKCommand.NoteOn,
!         Value = 60, // play a C5 note
!         Channel = 0,
!         Duration = 1000, // one second
!         Velocity = 100 };
! midiStreamPlayer.MPTK_PlayEvent(NotePlaying);
!
```

Member Enumeration Documentation

enum EnumLength [strong]

Note length as https://en.wikipedia.org/wiki/Note_value

Constructor & Destructor Documentation

MPTKEvent (ulong *data*)

Create a MPTK Midi event from a midi input message

Parameters

data	

Member Function Documentation

override string ToString ()

Build a string description of the Midi event. V2.83 removes
on each returns string

Returns

Member Data Documentation

int Channel

Midi channel fom 0 to 15 (9 for drum)

MPTKCommand Command

Midi Command code. Defined the type of message (Note On, Control Change, Patch Change...)

MPTKController Controller

Controller code. When the Command is ControlChange, contains the code fo the controller to change (Modulation, Pan, Bank Select ...). Value will contains the value of the controller.

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long Duration

Duration of the note in millisecond. Set -1 to play undefinitely.

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Information hold by textual meta event when Command=MetaEvent

int Length

Duration of the note in Midi Tick. MidiFilePlayer.MPTK_NoteLength can be used to convert this duration. Not used for MidiStreamPlayer, length is set only when reading a Midi file. https://en.wikipedia.org/wiki/Note_value

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MetaEvent Code. When the Command is MetaEvent, contains the code of the meta event (Lyric, TimeSignature, ...). . Info will contains the value of the meta.

uint Source

Origine of the message. Midi ID if from Midi Input else zero. V2.83: rename source to Source et set public.

long Tick

Time in Midi Tick (part of a Beat) of the Event since the start of playing the midi file. This time is independent of the Tempo or Speed. Not used for MidiStreamPlayer.

long Track

Index of track.

int Value

Contains a value between 0 and 127 in relation with the Command. For:

`If` Command = NoteOn then Value contains midi note. 60=C5, 61=C5#, ..., 72=C6, ...
`If` Command = ControlChange then Value contains controller value, see MPTKController
`If` Command = PatchChange then Value contains patch/preset/instrument value. See the current SoundFont to find value associated to each instrument.

int Velocity

Velocity between 0 and 127

List<fluid_voice> Voices

List of voices associated to this Event for playing a NoteOn event.

MPTKRangeLib

[MPTK PRO] - Load library of scale from GammeDefinition.csv in folder Resources/GeneratorTemplate.csv - V2.82 new

Static Public Member Functions

static MPTKRangeLib Range (int index, bool log=false)

Get a scale from an index. SCares are read from GammeDefinition.csv in folder Resources/GeneratorTemplate.csv.

Public Attributes

int Count

Count of notes in the range

string Flag

Some indicator when available.

int Index

Position in the list (from the library)

bool Main

Common scale if true else exotic

string Name

Long name of the scale

string Short

Short name of the scale

Properties

static int RangeCount `[get]`

Count of scales availables in the library GammeDefinition.csv in folder Resources/GeneratorTemplate.csv

int this[int index] `[get]`

Delta in 1/2 ton from the tonic, so first position (index=0) always return 0 regardless the range selected.

Detailed Description

[MPTK PRO] - Load library of scale from GammeDefinition.csv in folder Resources/GeneratorTemplate.csv - V2.82 new

---

Member Function Documentation

static MPTKRangeLib Range (int *index*, bool *log* = `false`) `[static]`

Get a scale from an index. SCares are read from GammeDefinition.csv in folder Resources/GeneratorTemplate.csv.

Parameters

index	
log	

Returns

Member Data Documentation

int Count

Count of notes in the range

string Flag

Some indicator when available.

`M` = major scale
`m` = minor scale
`_` = undetermined

int Index

Position in the list (from the library)

bool Main

Common scale if true else exotic

string Name

Long name of the scale

string Short

Short name of the scale

Property Documentation

int RangeCount `[static]`, `[get]`

Count of scales availables in the library GammeDefinition.csv in folder Resources/GeneratorTemplate.csv

int this[int index] `[get]`

Delta in 1/2 ton from the tonic, so first position (index=0) always return 0 regardless the range selected.

Parameters

index	Position in the scale. If greater than count of notes in the scale, the delta in 1/2 tons is taken from the next octave.

Returns

Delta in 1/2 ton from the tonic

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