Tone

-frequency: float
-amplitude: float

+ Tone(frequency: float, amplitude: float)
+ getAmplitude(): float
+ getFrequency(): float
+ getInputStream(format: AudioFormat): InputStream
+ getAudioInputStream(time: float): AudioInputStream
+ *getSample(time: double) : double*

WavePlay

+ display(waveFile: String)
+ display(audio: AudioInputStream)
+ downsample(tone: Tone, type; String, freq: double): Tone
+ downsample(wavFile: String, freq: double): AudioInputStream,
+ playFile(waveFile: String)
+ playFile(tone: Tone, time: int)
+ saveWav(converted: AudioInputStream, newFile: String)

<<creates>>
<<uses>>

SineTone

+ SineTone(frequency: float, amplitude: float)
+ getSample(time: double): double

SquareTone

+ SquareTone(frequency: float, amplitude: float)
+ getSample(time: double): double

SawtoothTone

+ SawtoothTone(frequency: float, amplitude: float)
+ getSample(time: double): double

TriangleTone

+ TriangleTone(frequency: float, amplitude: float)
+ getSample(time: double): double

AudioInputStream

ToneInputStream

- bitScale: int
- index: int
- outFormat

+ read()

java.io.InputStream

<<uses>>

Complex

-real: double
-imaginary: double

+Complex(real: double, double)
+add(other: Complex)
+minus(other: Complex)
+multiply(other: Complex)
+multiply(scalar: double)
+getReal(): double
+getImaginary(): double
+magnitude(): double

AudioProcessor

- index: int
- prev: byte[]
- format: AudioFormat
- bitScale: int

+ AudioProcessor(in: InputStream, format: AudioFormat)
- collapse(b: byte[], off: int, len: int): float[]
- expand(b: byte[], off: int, len: int, data: float[])
+ read(b: byte[], off: int, len: int): int
+ getAudioStream(samples: int): AudioInputStream
- processAudio(audioData[]: float)

<<creates>>

UserInterface

+ existing()
+ generate()
+ main()
+downsampleFile(wavfile: String)
+downsampleTone(tone: Tone, type: String)
+delayTone(tone:Tone, time:int)
+delayFile(wavFile: string)
+volumeTone(tone: Tone, time: int)
+volumeFile(wavFile: String, time:int)

<<uses>>

VolumeControl

- scaleFactor

+ VolumeControl(in: InputStream, format: AudioFormat, scaleFactor: float)
+ VolumeControl(in: AudioInputStream, scaleFactor: float)
+ processAudio(audioData: float[])
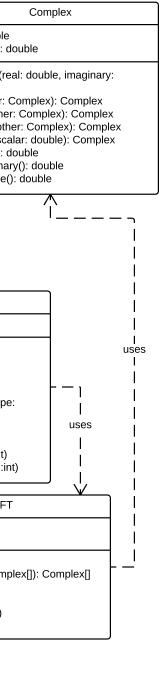
ConvolveProcessor

- convolveVector: float[]
- pastData: Queue<float>

- convolve()
- processAudio(audioData: float[])

uses

DFT

+computeFFT(x: Complex[]):
+tryStuff(): byte[]
+getPeak()
+sort(array: double[])

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```

- convolve()
- processAudio(audioData: float[])