

# Map Samples to Root Key

This how-to shows how to map sample zones automatically to the root key that matches the analyzed pitch of the sample. Such helper functions can be useful during the production of large scale sample libraries.

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## Prerequisites

- A Program with sample zones.
- The samples have a distinct pitch.

## Mapping Samples to the Root Key

The example below assumes you have a program with sample zones that are not mapped to the root key yet.

1. Add a Lua Script module to your program.
2. Copy the following code to the Lua Script module.

```
channelNames = { [0] = "All", "Left", "Right" }

defineParameter( "Channel", nil, 0, channelNames)
defineParameter( "Start", nil, false, function() if Start then onStart() end end)
defineParameter( "Cancel", nil, false)

function onPitchAnalysisFinished(audioFile, channelNum)
    print("Progress: 100%")
    print(channelNames[channelNum].." channel(s) of "..audioFile.fileName.." analyzed.")
end

function onStart()
    zones = this.parent:findZones(true)
    for i, zone in ipairs(zones) do
        local samplePath = zone:getParameter("SampleOsc.FileName")
        print("File: "..samplePath)
        local afile = AudioFile.open(samplePath)
        afile:analyzePitch(onPitchAnalysisFinished, Channel)
        while afile:getPitchAnalysisProgress(Channel) < 1 do
            if Cancel then
                afile:cancelPitchAnalysis(Channel)
                break
            end
            local progressPercent = 100 * afile:getPitchAnalysisProgress(Channel)
            print(string.format("Progress: %2d%%", progressPercent))
            wait(2000)
        end
        if Cancel then
            Cancel = false
            print("Canceled!")
            break
        end
        local pitch = afile:getPitch(0, -1, Channel)

        pitch = math.floor(pitch+0.5)

        print("Analyzed Pitch: "..pitch)

        zone:setParameter("SampleOsc.Rootkey", pitch)
        zone.keyLow = pitch
        zone.keyHigh = pitch

    end
    print("Done!")
    Start = false
end
```

3. Go to the Parameter List and activate "Start".
4. Open the Mapping editor.

The sample zones will be mapped automatically to the matching root key.

## Example VST Preset

The parameters Start, Cancel and Channel can be accessed from the macro page of the example VST preset.

- [Map Samples to Root Key.vstpreset](#)

The example VST preset requires the factory content of HALion.