

# MuGen - The Music Generator

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## User manual

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MuGen is a program that based on the user input, music theory, guided randomization and AI creates MIDI music on the fly.

The MIDI music can be played outright with default MIDI instruments, or be further refined in your favorite MIDI editor like MuseScore, or in a DAW like FL Studio.

After starting the program, familiarize yourself with the different screen elements.

**You get context sensitive tooltips by hovering the mouse pointer over each element in the UI.**

## TUTORIAL

Let's dive right in! - Start the program - Set number of songs to 1 - Remove all checkmarks in the checkboxes - Set tempo: 160 - Set chord bars and prog length to 4 - Set prog notes to 1 - Set key to A - Set scale to Minor - Set song structure to VERSE\_CHORUS - Set chorus variation to MAJOR\_MINOR - Set verse progression to 1, 5, 6, 4 - Set chorus progression to 1,4,5 - Choose the 'chord melody' melody type - Click '**GENERATE SONGS**' - Click the name of the generated song to play it - or right click for more options!

The song should sound somewhat familiar! Try to click '**Randomize**' to create a new seed, then '**GENERATE ALBUM**' to create a new song.

When you have created a song you like, *without creating a new seed*, do the following, and for each step, '**GENERATE ALBUM**' again and listen to the difference. - Change the scale - Change the tempo - Change the key - Change the chorus variation to RELATIVE\_MAJOR\_MINOR - Try out different values for chord bars, proglength and prog notes - Check/uncheck the checkbox for extend - Check/uncheck the checkbox for 7ths - Change melody type to chordstrumming and strum type to part - ...Do what you want! Unleash your creativity!

You now have an idea of what MuGen can do.

## Some important concepts:

**Playing the generated song** Left click on the generated song name to play the song using the default system midi player. You can also play back the generated song using the internal midi player. Right click the song name for this and other options.

### Seed

The seed is a text string/number that forms the basis of the song creation process. It is a starting point for the randomization process. A useful application of this is that you can change settings without changing the seed and see how this affects the created song. If you find a seed that creates a song you like, you can change the tempo, scale and root note and recreate the same song with the new settings.

### Key and scale

The base key is the basis for the chord progression. The scale is which scale to use. Generally, only notes in the given scale will be used for the generation.

### Progression

A progression is how the music goes from one base chord to the next. The progressions are numbered from 1 to 7 (I-VII). The 1 is the root note (The note C in a C scale for example), the 3 is the third note (E in a C scale) and so on. The chords are played in Major and Minor according to the rules for the given scale, so in a C Major scale it plays 1 major (I), 2 minor (ii), 3 minor (iii), 4 major (IV), 5 major (V), 6 minor (vi) and 7 diminished (vii°).

Some very common progressions:

Song type	Progression
12-bar blues	1, 1, 1, 1, 4, 4, 1, 1, 5, 4, 1, 1
Best seller	1, 5, 6, 4

Song type	Progression
EDM	1, 5
Folk	1, 5
Jazz base	2, 5, 1
Jazz standad	1, 6, 2, 5
Love song	1, 6, 4, 5
Classical	1, 5, 6, 3, 4, 1, 4, 5
Sensitive	6, 4, 1, 5

## Jumps

You can specify the maximum number of jumps between notes to use for each part of the song. If the max number of jumps is 0, the melody will consist of the same note throughout. If the jump is 1, the melody will rise up and go down with a maximum of 1 step at a time etc. A low number will make for a tune that is easy to hum along with. A high number will sound more experimental.

## Structure

The song structure is how the song is organized. A Verse/Chorus structure would start with an optional intro, then progress to the verse, followed by the chorus, then the verse again followed by the chorus, then an optional outro. If you instead choose the verse/chorus/bridge structure, you would get a bridge before the last chorus as well. Please note that the verse and chorus progression does not have to be the same.

### \*\* Melody type \*\*

The melody type lets you choose how the melody is generated.

The options are:

*Scale based* - melody is generated by semi-randomly using every note in the scale, but tries to avoid dissonance. Gives more control of the result as this enables choice of song structure. *Chord based* - melody is generated by semi-randomly using the notes in the chord. This is very 90's but gives pleasing results. *Chordstrumming* - melody is generated by strumming the chord using strumming patterns.

*If choosing scale based*, you can also choose the song structure. The letters represent phrases (a string of notes) in the melody. AAAA means the same phrase is repeated indefinitely. ABAB means alternating between 2 different phrases. ABAC means switching between 3 phrases, first one phrase (A), then a second one (B), then the first one again (A) - then a new phrase (C) to finish it off. RANDOM means the phrases can be repeated in any order, whereas ABCD will create a new phrase where each phrase is different from the next.

There is also a checkbox for '*melody mutation*' - which will switch one or more notes within a phrase each time the phrase is played. This is only used for scale based melodies.

*If choosing chordstrumming*, you can also choose strum type. The options are:

*Song* - keep the same strumming pattern for the entire song. *Part* - create a new strumming pattern for each part of the song (verse, chorus etc.) *Chord* - create a new strumming pattern for each new chord - generally not recommended as this can lead to very unstructured melodies.

Please note that jumps (see above) are ignored when using chordstrumming!

## Variation

The program lets you specify which variation to use for the different parts of the structure. The verse will always be in the base key/scale. But you can vary the other parts relative to the verse. A common structure is to have a verse in minor, then switch to a major for the chorus. Another common technique is to switch to a relative minor if the song is in minor, or to the relative major if the song is in major. You can also specify a different chord progression for the different parts.

## Tempo

There are some common tempo intervals for different kinds of music - you use these as a starting point

Song type	Tempo
Hip Hop	60-120 BPM
Glitch Hop	105-115 BPM
Techno	120-155 BPM
Trap	130-150 BPM
House	115-130 BPM
Trance	130-145 BPM
Electro	128 BPM
Dubstep	70-100 BPM
Drum and Bass	160-180 BPM
Blues	60-90 BPM
Country	100-115 BPM
Daft Punk	110-133 BPM
Hardcore	180+ BPM
Ballad	40-90 BPM
Pop	90-150 BPM
Reggae	60-90 BPM
R&B	60-80 BPM
Rock	110-140 BPM
Metal	100-160 BPM

And remember - rules are made to be broken!

### Random key/scale/mode

If this is checked, the choice of 'Base key' and 'Base scale' will be greyed out, as this will be determined randomly each time you generate a new album.

### Random progressions

If this is checked, all the progression choices will be greyed out, as each progression will be determined randomly each time you generate a new album.

## Note viewer

The note viewer will show which note is playing on what channel every time you use MuGen to play back notes, progressions, or generated music.

## Expert settings

The expert settings are for the ones who need even more influence over the music generation. To show the expert settings, click the appropriate button.

## Note Embellish %

If you want MuGen to embellish your melody notes, you can set 'Note Embellish %' to the percentage chance of note embellishment.

## Note rest %

Set the change that some notes are not played. Use this to create more air and space in your music.

## Direction change %

This is a melody setting that decides how likely it is that the melody changes direction from one note to the next. A high number will lead to a melody that goes up and down all the time, a low number will keep the same direction longer.

## Max deviation

This specifies how far away from the root note a melody will be allowed to travel. A setting of 12 (steps) will allow a melody to play an octave above or below the current root note, while a setting of 24 will allow two whole octaves up and down. A high number will create a sweeping melody that travels all over the place, while a low number will create a tight melody that is always close to the root note of the chord playing. See also *note jumps*.

## Silence part %

Each time an instrument is lined up to play a part, there is a percentage chance the instrument will refrain from playing that part. The percentage can be specified in the 'Silence Part %' input field. Can be overridden by '**Silence**' - see below.

## Progression library

If the provided progressions are not sufficient for your needs, or you have something very particular in mind, you can add your own progressions to the progression library.

To add a new progression, type in the numbers in the '**Custom progressions**' text field.

The input has to be on the format 'number, number, number'... where a 1 corresponds to the root note, 2 to the second, and so on.

**Example:** 1,2,3,4,5,6,7

This would translate to **C, D, E, F, G, A, B** in a **C Major** scale

Click the '**Add to library**' button to add the progression to the list of progressions. The new progression will be available for selection in the progression dropdowns.

You can also delete existing progressions from the library. Right click the progression and choose '**Delete ...**'.

**Nothing prevents you from deleting the default progressions!** (If you want them back, you need to do a '**Factory Reset**')

## Channel customization

Please note that channel customization is customization of a channel that is **part of the composition!** That means, if you for example specify that your song should use Pads - channel customization lets you customize the pad tracks (Scale Root, Scale

Third and Scale Top). But if pads are **not** selected, you **won't hear the pad channel even if you customize it in channel customization**.

You can customize each **active** channel individually. Each channel is identified by the channel number and the channel name. \* Select instrument/drum from the instrument dropdown. \* Silence: Disable this channel for the duration of the song. Note that this overrides the 'Silence Parts' setting. \* Rhythm: Randomize rhythm value (note duration) for each note in this channel. The offset is +/- one 128th note. \* Dynamic: Randomize the dynamic value (velocity/volume) for each note in this channel. The dynamic is modified with +/- 20%. \* Spread: Randomize the pan value (stereo left/right value) for each note in this channel. \* Bounce: Alternate between stereo field far left/far right for each note in this channel. \* Merge: Consecutive notes of the same pitch will be merged together, and notes duration will be expanded to fill silent parts. This will create long, sweeping notes perfect for pads.

## Factory reset

Clicking this button will reset all settings to the default

## Load settings

Clicking this button will present you with a file dialog where you can load a custom MuGen profile.

## Save settings

Clicking this button will present you with a file dialog where you can save your current settings as a custom MuGen profile. Profiles are sharable with other users of the program (with the same version). There is no limit to how many different profiles you can have.

## Work dir

Clicking this button will present you with a directory selection dialog where you can choose the root path the program uses to write the generated albums. By default this is /MuGen.

## Solo

You can play a solo for each instrument/drum using the current settings. The current verse scale/mode and progression, tempo, and other active settings will be used when playing. Here you can experiment with rhythm, dynamic, spread and bounce until you find something that suits your needs. The settings for number of chord bars and progression length will be used to determine the length of the track.

## Export

If you want to export a single track from the song you can click the export button for the given channel. The exported track will be written to the *Tracks* directory.

## Troubleshooting

### There is too much sound! It's all a big mess!

- Try reducing the number of prog notes.
- Try turning off PADS, FX, and Chord Separation
- Try turning on Chordless
- Try settings note embellishment (Expert settings) to '0%'
- Try settings note rest (Expert settings) to '20%' or more
- Try settings silence parts (Expert settings) to '20%' or more
- Try setting individual channels to 'Silence'

### There is no sound! Parts of the song are missing entirely!

- Try settings note rest (Expert settings) to '0%'
- Check the channel settings (Expert settings) and see if the channel is set to 'Silence' - if it is, uncheck it

# Thank you for buying MuGen!

