Imaging system manual

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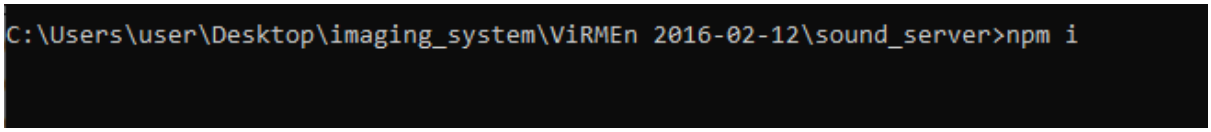
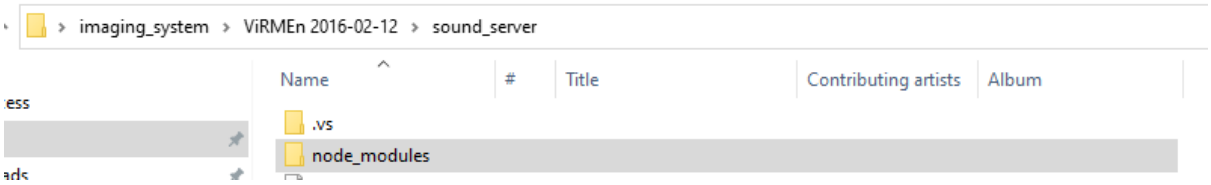
Requirements

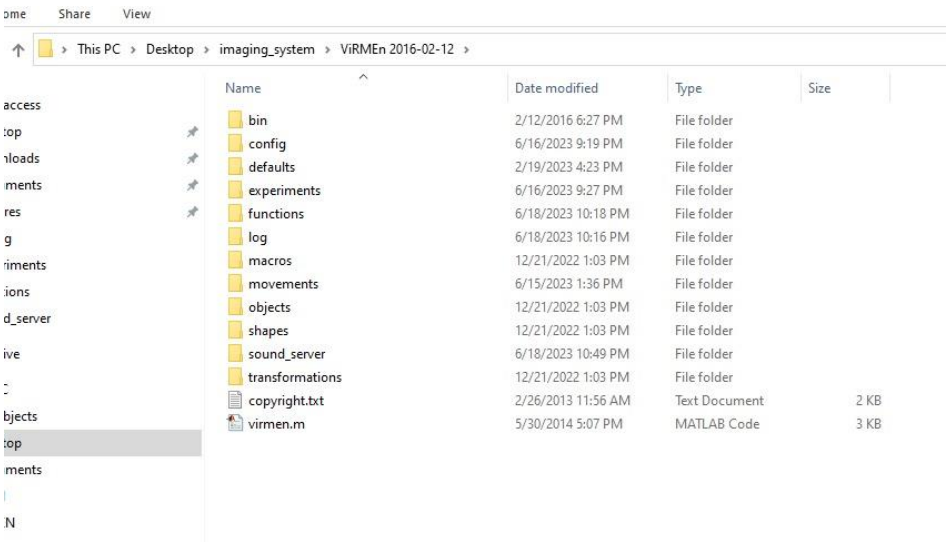
For a new computer – in the sound_server folder, run in the cmd: “npm i” this will download all the necessary libraries for running the program. It will save them in a folder called node_modules





Create a folder called “log” inside the virmen folder.
(C:\Users\user\Desktop\imaging_system\ViRMEn 2016-02-12\log)

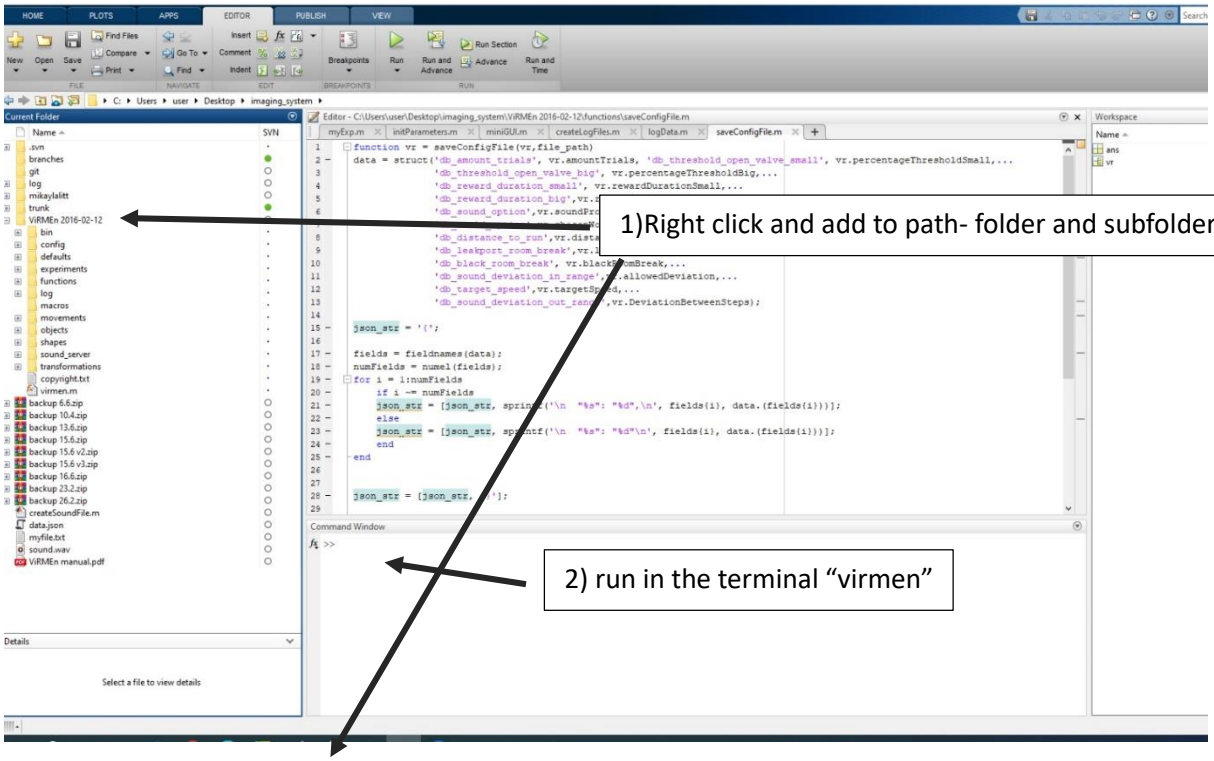
Create a folder called “config” inside the virmen folder.
(C:\Users\user\Desktop\imaging_system\ViRMEn 2016-02-12\config)

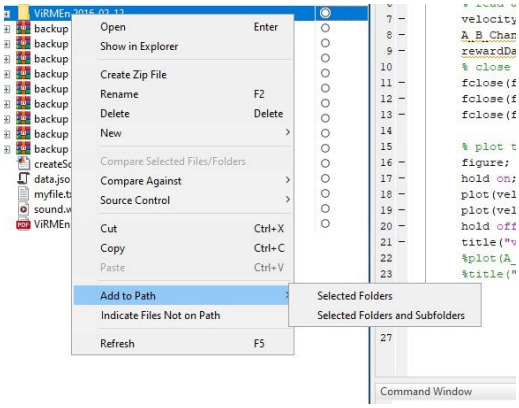


For running the program:

Open Matlab 2018b

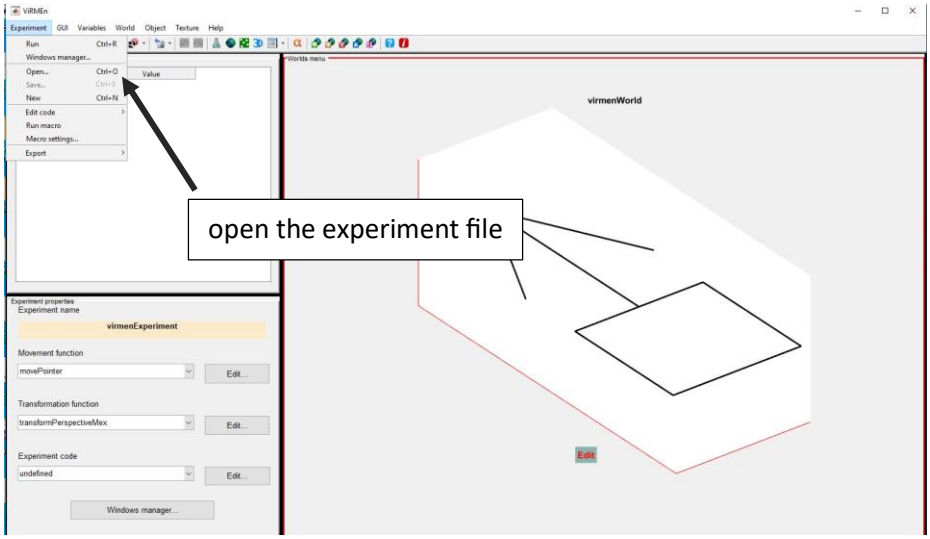
Go to the “C:\Users\user\Desktop\imaging_system\ViRMEn 2016-02-12” folder in the matlab file explorer.

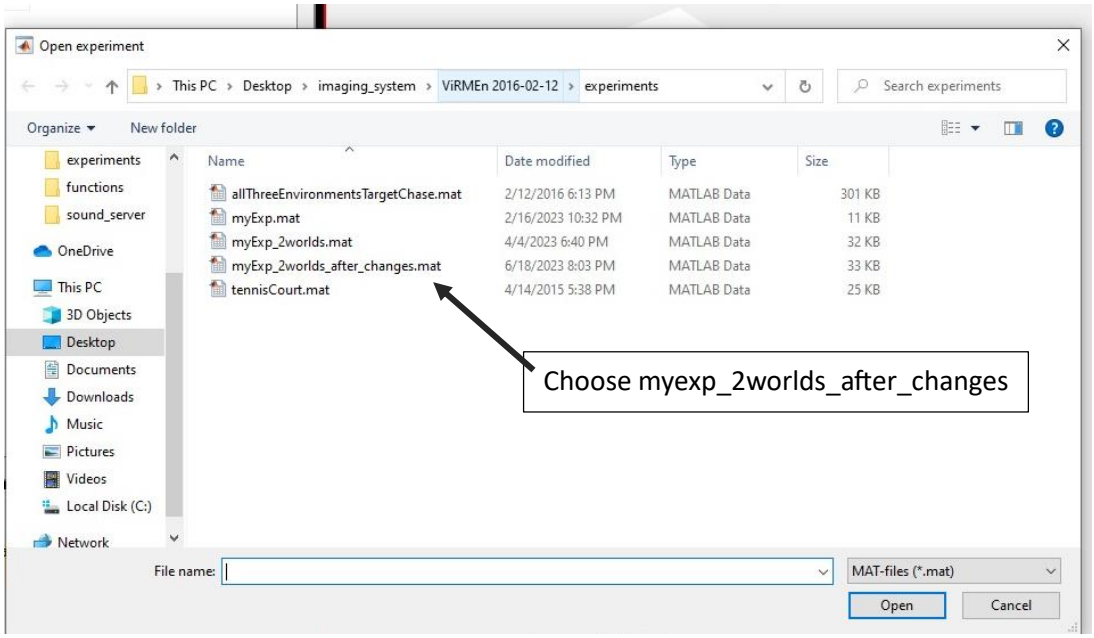


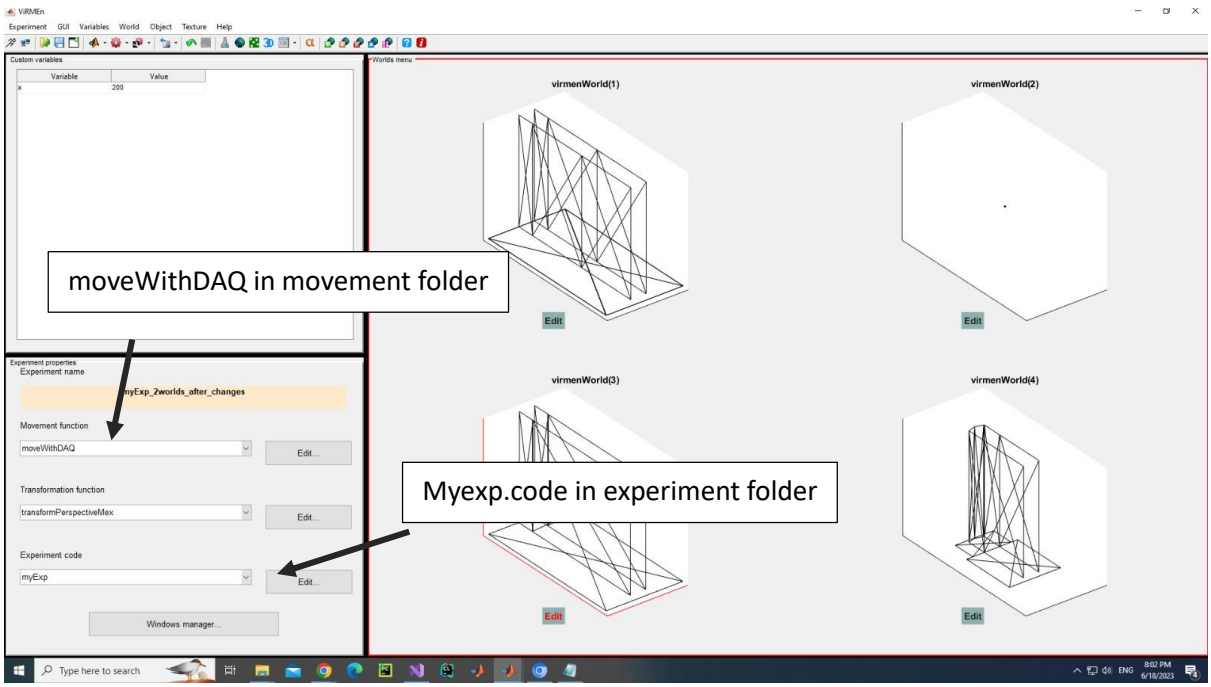


This is the way you have to write virmen in the terminal followed by Enter

You will get this window


open the experiment file
virmenWorld


Open experiment
This PC › Desktop › imaging_system › ViRMEn 2016-02-12 › experiments
Search experiments
Organize
New folder
experiments
functions
sound_server
OneDrive
This PC
3D Objects
Desktop
Documents
Downloads
Music
Pictures
Videos
Local Disk (C:)
Network
Name
Date modified
Type
Size
allThreeEnvironmentsTargetChase.mat 2/12/2016 6:13 PM MATLAB Data 301 KB
myExp.mat 2/16/2023 10:32 PM MATLAB Data 11 KB
myExp_2worlds.mat 4/4/2023 6:40 PM MATLAB Data 32 KB
myExp_2worlds_after_changes.mat 6/18/2023 8:03 PM MATLAB Data 33 KB
tennisCourt.mat 4/14/2015 5:38 PM MATLAB Data 25 KB
Choose myexp_2worlds_after_changes
File name:
MAT-files (*.mat)
Open
Cancel



What do we see in the image above?

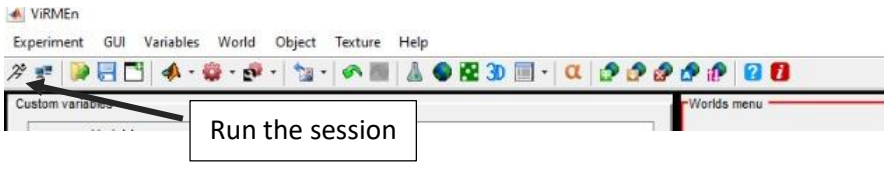
On the right side this we have 4 world implemented. (The experiment use only 3 of them as we know- chess,stripes, black room). Please don't touch it.

MoveWithDAQ is our movement function. This is the one we have implemented for this experiment. The others will not work correctly.

The bar at the top of the screen is used for creating a new worlds. Please don't click there as well. There is no reason. (The only button necessary is the run button, it is being used in the next step)

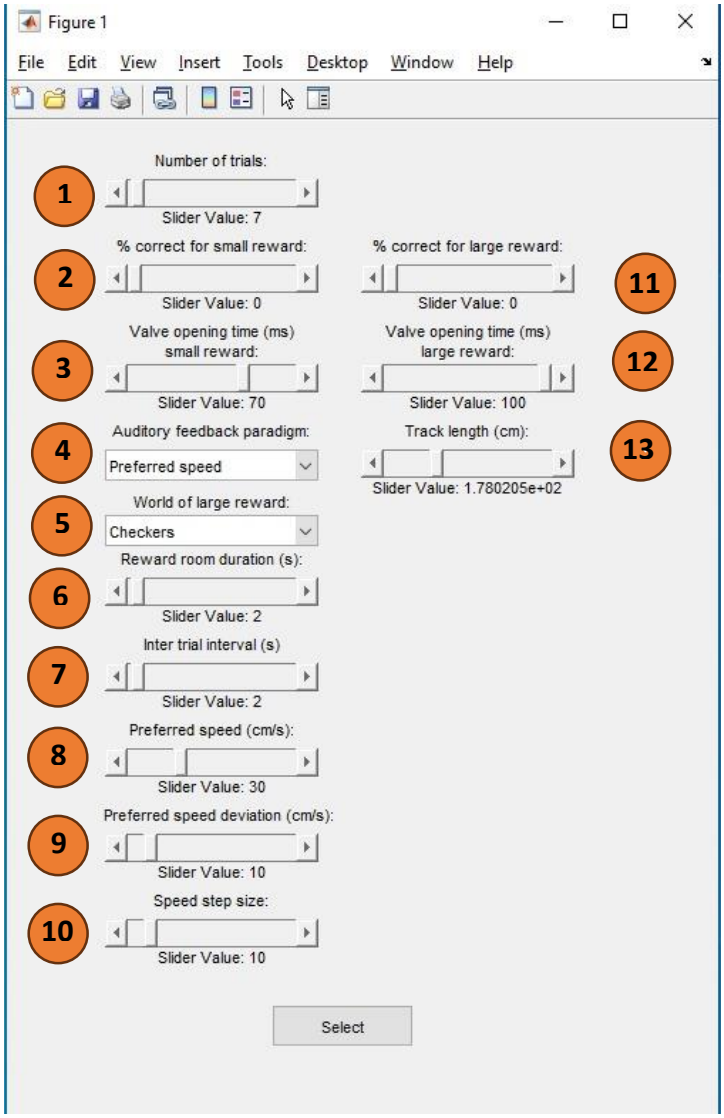
Back to our how to run manual:

after setting everything, run the session



you will enter the configuration of the session.

After pressing "select" It will be saved in the log folder, in a file called "config.json" The default configuration file when getting to this screen is the last configuration used.



1) Number of trials for the session
2) Percentage of time running in the goal range in small reward world in order to open the valve
3) Reward size- how much time to open the valve for the small reward.
4) Which type of sound policy to activate.
5) Choose the hallway that will represent the large reward hallway.
6) How much time (in sec) to be in the reward room.
7) How much time (in sec) to be in the black room.
8) Target speed (cm/s)
9) How much deviation from the target speed we allowed to each side(cm/s). (i.e it sets to 20-40 in this configuration)
10) in out of range scenario, how much deviation between each step
11) As of 2 – but here it is for large reward room.
12) As of 3 – but here it is for large reard room
13) The length of the trace (in cm, not precise)

Using a previously used configuration setting

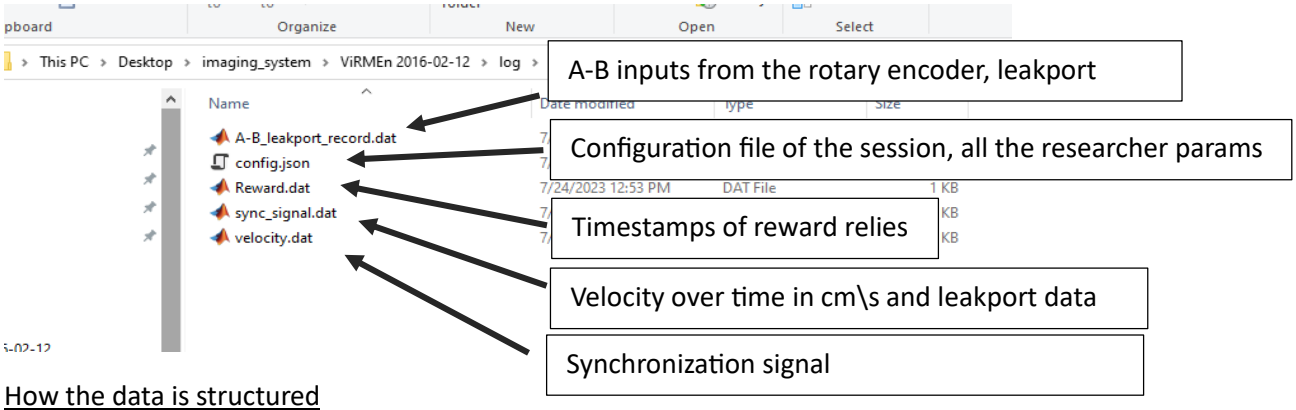
For using a config.json file from other session, copy its content and paste it in the default config file in config\config.json (you can use CTRL+C CTRL+V).

- If by any reason there is no config.json in config folder. It will create a default file when starting a session.

results

after running the session, all the data will be saved in the log folder, under the session's date and time

There are 5 files in the folder:



How the data is structured

A-B_Leakport_record (4Xn)

timestamp	…
A state(0-4 Volt)	…
B state(0-4 Volt)	…
Lickport state	…

Reward(2Xn)

Timestamps	…
Reward gaved	…

Velocity (3Xn)

timestamp	…
Velocity (cm\s)	…
Current leakport status	…

Synchronization signal (2Xn)

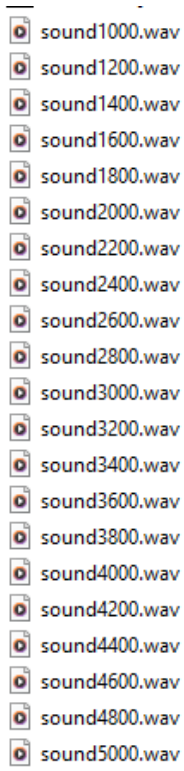
timestamp	…
Random signals	…

Pay attention - the Synchronization file contains timestamps for the first 200 samples each writing (when we start the trial and every time we get to the end of the trace). The rest are filled with zeros.

How to set sound files:

The sound files are in this file path:
C:\Users\user\Desktop\imaging_system\ViRMEn 2016-02-12\sound_server

And these are the sound files the program use.

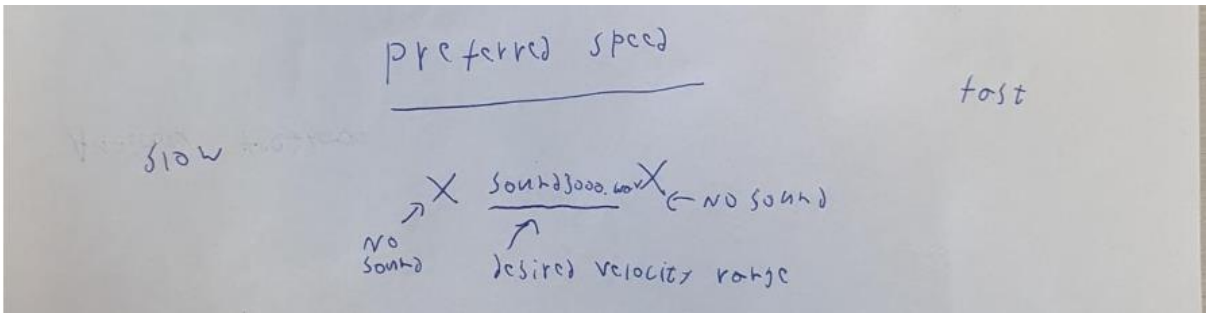


The desired sound is sound3000.wav for all auditory feedbacks.

Preferred speed:

Sound3000.wav will be played when it runs in desired velocity range

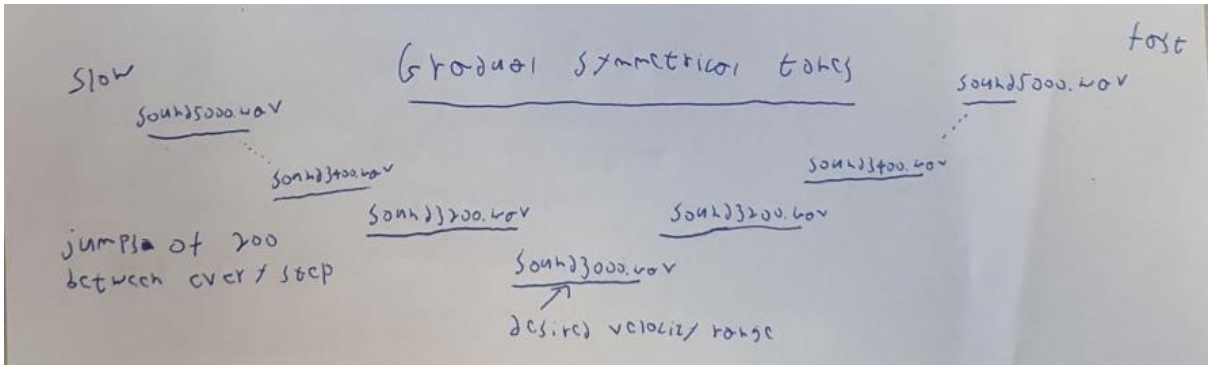
In case it doesn't run in desired velocity range- no sound file will be played.



Gradual symmetrical tones:

Sound3000.wav will be played when it runs in desired velocity range

In case it goes out of range – every step we go out from range in both sides the sound file number will be increased by 200.



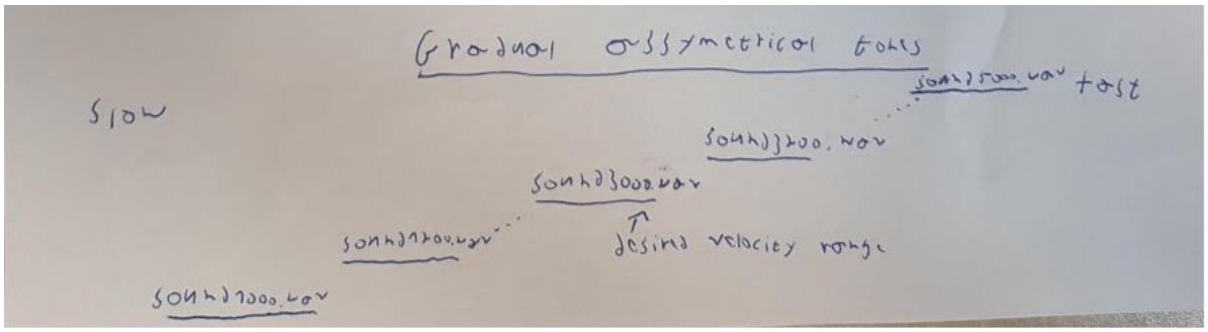
Gradual asymmetrical tones:

Sound3000.wav will be played when it runs in desired velocity range

In case it goes out of range, it splits into two – too slow and too fast.

For every step we go too fast, the sound file number is increased by 200.

For every step we go too slow, the sound file number is decreased by 200.



So all you have to do is replace the sound files with the desired sounds you want to have based on this configuration.