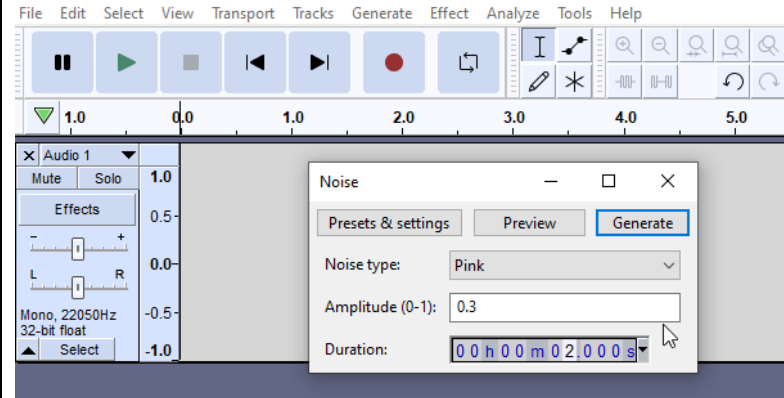
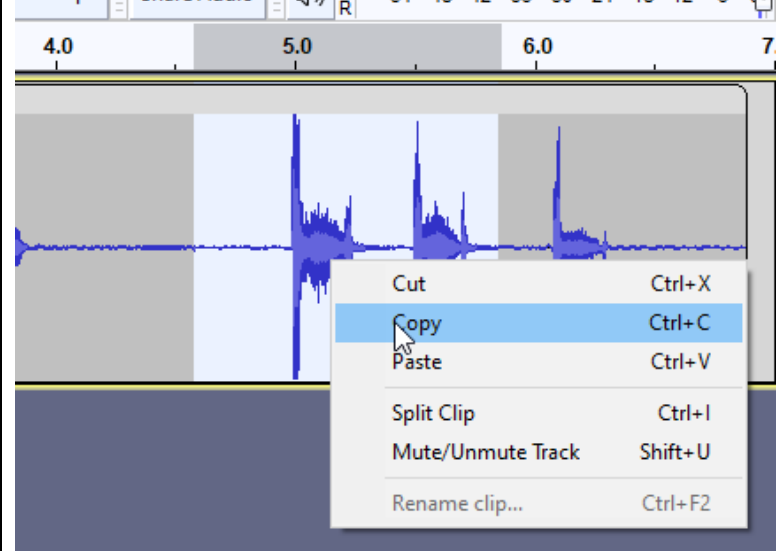
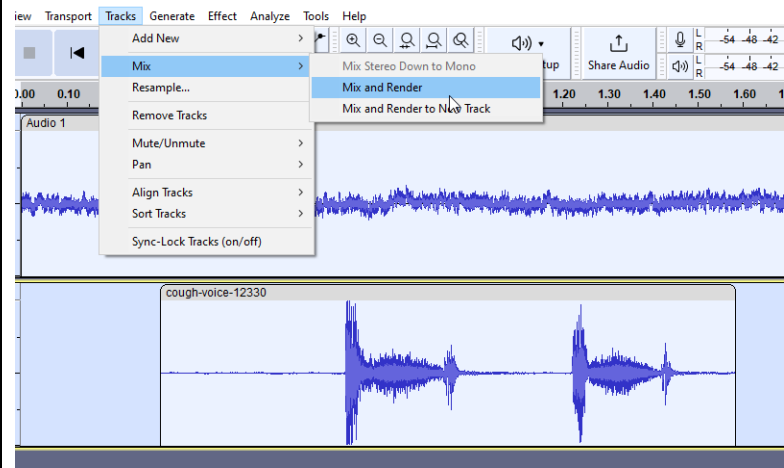
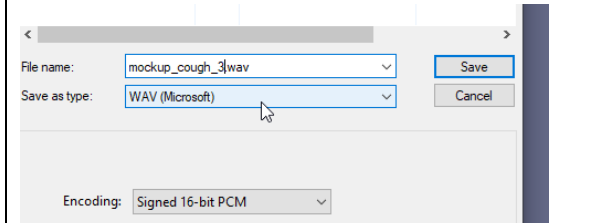


## Generation of mock-up data – a simple guide using Audacity

Keep in mind that the same mock up data for cough and noise should be used for each combination of transformations. As such it may make sense to save multiple project files.

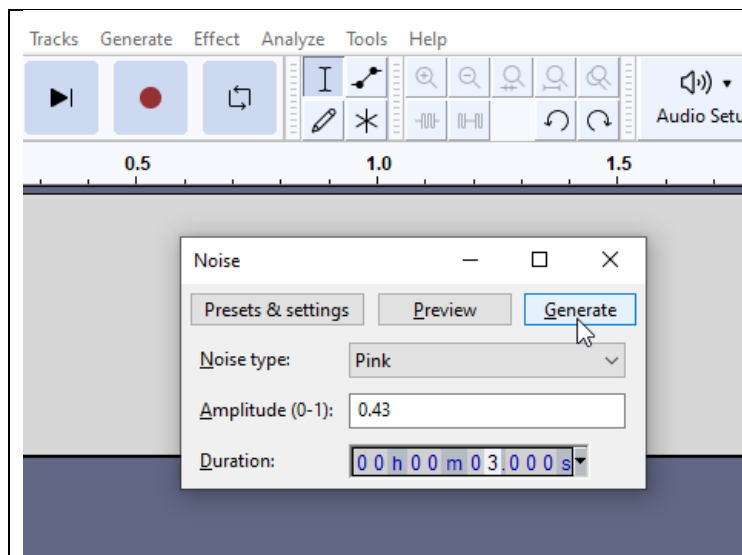
To illustrate the process first the mock up data generation is explained without overlap in mind:

	<p><b>Generate – Noise...</b> Using pink noise of amplitude 0.3-0.5 for example with 2 seconds to generate noise samples. The sample can then be exported.</p> <p>➔ Generate 2'280+ unique noise samples spread across the folders</p> <p>For this project use a project sample rate of 22050 Hz and export using signed 16-bit PCM WAV (Microsoft) audio files.</p>
	<p>For coughs:</p> <p>Follow the step generate noise but do not export the sample yet.</p> <p>Copy a cough or selection of cough samples provided in this project from your own cough samples.</p> <p>Make sure to place the cough at the centre of the 2 second noise sample.</p>
	<p>Mix the tracks and render them. They can now be exported as a cough sample.</p> <p>➔ Generate 2'280+ unique cough samples spread across the folders</p> 

## Generating mock up data with overlap in mind:

To generate data simulating the overlap use the provided examples for reference in  
data\audio\mock\_up\_data\_audio:

“overlap\_cough\_audacity\_project.aup3” and “overlap\_noise\_audacity\_project.aup3”

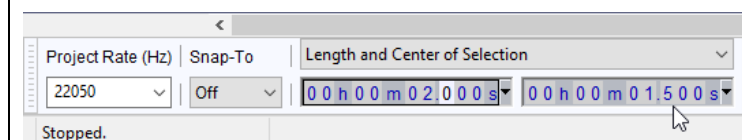


Generate at least 3 seconds of noise for a total of 25% overlap as in the thesis.

Make sure to use a mono track with 22050 Hz. To place the initial label use the option “Length and Center of Selection” in the selection helping tool.

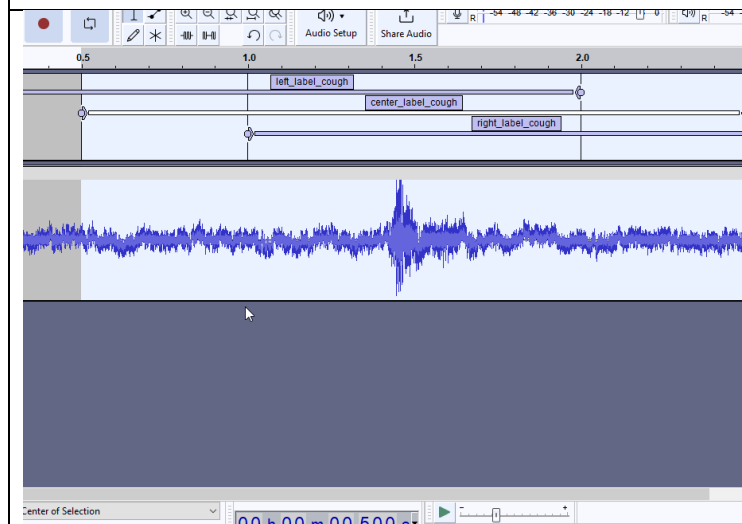
Set the time to 1.500s and duration to 2 seconds for the centre sample. Now you can generate a label using CTRL-B.

Use 1.000s for the left and 2.000s for the right label. Generate those labels.



➔ Generate 2’280+ unique overlap cough samples spread across the folders using this approach with the export function “Export” – “Export Multiple”

➔ The middle section can be used for non-overlap samples. Simply delete the left and right samples.



Copy a cough sample into the middle part to generate the overlapped samples using the same cough as a sample.

➔ Repeat 2’280+ times spread across the folders with unique coughs using “Export” – “Export Multiple” for the real experience or automate the process

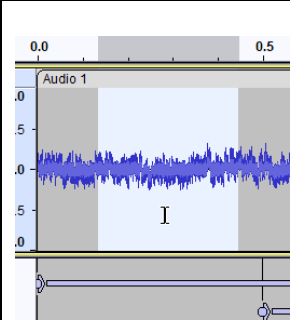
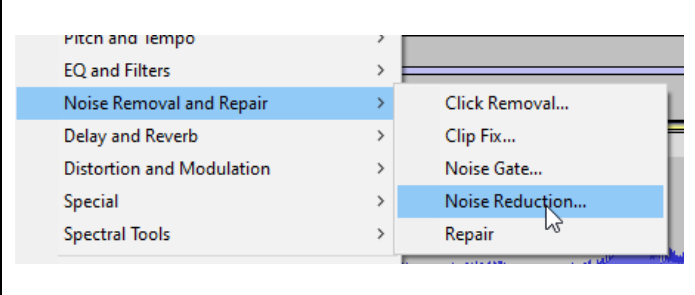
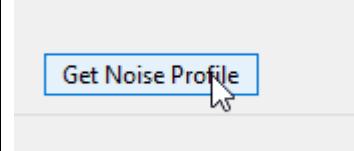
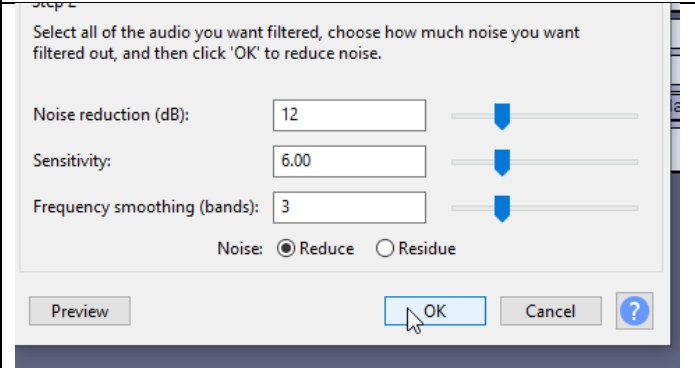
➔ The middle section can be used for non-overlap samples. Simply delete the left and right samples.

Applying the transformations:

## Noise Reduction

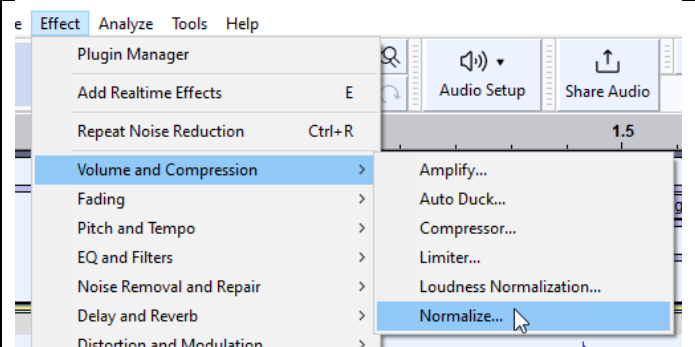
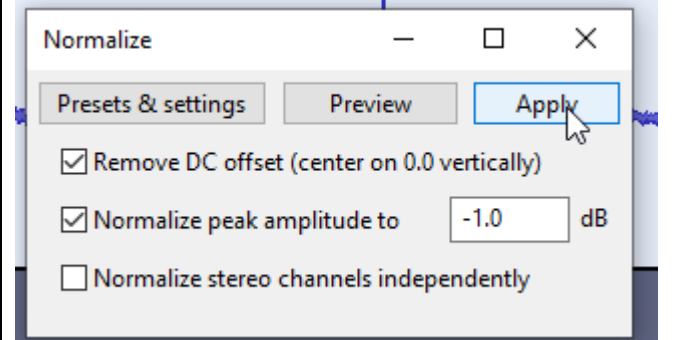
See example files: overlap\_cough\_audacity\_project\_with\_noise\_reduction.aup3

or: overlap\_noise\_audacity\_project\_with\_noise\_reduction.aup3

	<p>Select a part with only noise to use as noise profile.</p>
	<p>Navigate to “Effect” – “Noise Removal and Repair” – “Noise Reduction...” and click “Get Noise Profile”</p> 
	<p>Abort and use CTRL-A to select the whole audio track.</p> <p>Then navigate to “Effect” – “Noise Removal and Repair” – “Noise Reduction...” and click “Get Noise Profile” again.</p> <p>Use the settings to apply noise reduction.</p>









## Normalization

Example: overlap\_noise\_audacity\_project\_with\_norm.aup3 or overlap\_cough\_audacity\_project\_with\_norm.aup3

	<p>“Effect” – “Volume and Compression” – “Normalize”</p>
	

A set of example projects with these transformations already applied in combination using the overlap approach can be found on: data\audio\mock\_up\_data\_audio\

Use different combinations of transformations applied and then export all 2’080 samples for each combination into the different sets labelled as such under audio:

	samples_190807	14.01.2023 18:10	File folder	<p>Here samples 190807 are shown as an example.</p> <p>For the sets without “ol” for overlap you have to delete the left and right tracks.</p>
	samples_190807_with_noise_reduction	14.01.2023 18:30	File folder	
	samples_190807_with_norm	14.01.2023 18:36	File folder	
	samples_190807_with_nr_and_norm	14.01.2023 18:33	File folder	
	samples_190807_with_ol	14.01.2023 18:40	File folder	
	samples_190807_with_ol_and_norm	14.01.2023 18:41	File folder	
	samples_190807_with_ol_and_nr	14.01.2023 18:41	File folder	
	samples_190807_with_ol_nr_and_norm	14.01.2023 18:42	File folder	

To allocate the same number of samples as in the thesis it should be the following number of samples:

Sample Set	Coughs	Noise
190807	364	364
190827	940	940
211025	469	470
211026	510	511

Alternatively the script has settings to change these but were not tested with other numbers.