

The background is a solid green color. It is decorated with white line art. At the top, there are two large, tangled loops of thread. In the center, the word "Audacity" is written in a black, hand-drawn, slightly irregular font. Below it, the subtitle "for Cultural Initiatives and Anyone Else Who is Interested" is written in a clean, black, sans-serif font. In the lower half of the page, there are three pairs of scissors, each positioned as if cutting a piece of thread. The threads are depicted as continuous, flowing lines that loop and swirl around the scissors. At the bottom center, there is a circular, textured shape that looks like a ball of yarn or a piece of fabric, drawn with dense, overlapping lines.

# Audacity

for Cultural Initiatives and Anyone Else Who is Interested

Audacity

2024

## **IMPRESSUM**

### **Herausgeber:**

Radiofabrik - Verein Freier Rundfunk Salzburg

Ulrike-Gschwandtner-Straße 5

A-5020 Salzburg

[www.radiofabrik.at](http://www.radiofabrik.at)

**Projektleitung:** Alf Altendorf

**Redaktion:** Carla Stenitzer

**Illustrationen & Layout:** Annika Statkowski und Luca Standler

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# Audacity

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# 1. What is Audacity?

Audacity is an **open source audio editing program**.

Open source means that the software is license-free and can also be



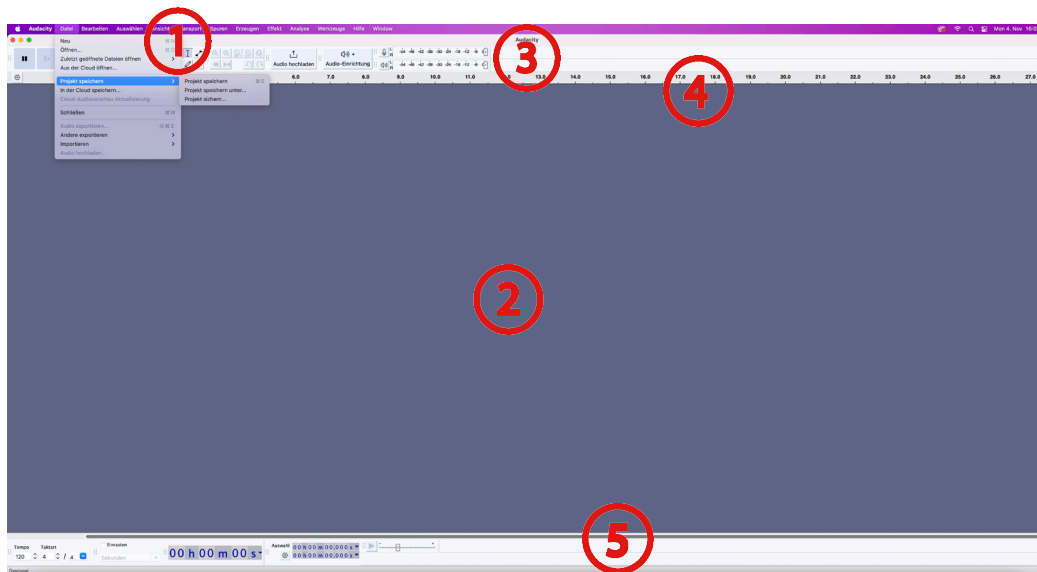
used commercially. The original source code is made freely available, so the program can be modified by everyone who knows how to code. The Audacity software works on all standard

operating systems (Windows, MacOs, Linux) and is easy to use.

It can be downloaded from the following website: [audacityteam.org](http://audacityteam.org)



## 1.1 The Audacity Interface



1. The **menu bar** contains many important features like saving a file or using effects.
2. The project window is where the audio files are.
3. In the **toolbar** you'll find the most important commands and tools.
4. The **timeline** helps you find your way through the project.
5. Go from one point in the project to the next using the **scroll bar**.


In the tool bar, you'll find the most important tools.



1. The buttons **Play/Stop/Pause/Record...** are similar to the ones of other players. For a good workflow however, it's more handy to use the **space key** to begin and stop playing.

2. The following tools can be used to edit clips (sections of audio files):



 **selects** clips, or parts of them, e.g. in order to delete them (with the Delete or Del key)



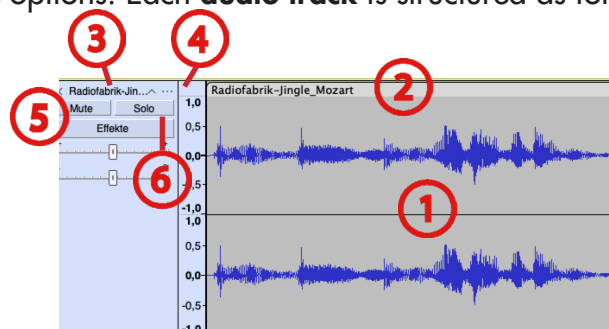
changes the **sound level**, e.g. of music clips

3. Here you can find the magnifying glass for zooming, as well as arrows to undo the last action.

4. The recording meter shows the **sound level** of the recording or the clip that is being played.

**ATTENTION:** During recording, the **sound level** should ideally lie between **-12db** and **-6db**. Under no circumstances should it get over 0db. If in doubt, it's better to record too quietly than too loudly. Passages where the level gets to over 0db will be clipped and cause distortions. They cannot be restored afterwards.







If you have already opened an audio file in your new project, you'll see more options. Each **audio track** is structured as follows:



1. Each **audio track** usually consists of a left and a right channel (stereo). This is why we see each track twice.
2. This shows the **name** of the **clip**. At the same time, this is also the area where clips can be grabbed with the mouse and moved around.
3. This shows the **name** of the **track**.
4. Tracks can be **renamed** by clicking the three dots next to the name and then **"Rename Track"**.
5. By clicking **"Mute"**, an audio track can be muted. This means it **cannot be heard** when you press play. Muted tracks are greyed out (look grey). Another click deactivates this function.
6. By clicking **"Solo"**, only the selected track will be played. **All others** are thereby muted and greyed out. It is also possible to **click "Solo" for several tracks** so these play together while all others are muted. By clicking **"X"**, you delete the whole audio track from the project.
7. By clicking **"X"**, you delete the whole audio track from the project.

## 2. Important Key Shortcuts

Save time and energy with shortcuts! To maintain a good workflow and be able to work quickly and efficiently, be sure to memorize the following shortcuts:

	<b>space key</b>	<b>play &amp; stop</b>	
Copy 	<b>CTRL + C</b>	<b>copies</b> the selected bit of the track	
X looks like scissors	<b>CTRL + X</b>	<b>cuts</b> the selected bit of the track	
V is next to C	<b>CTRL + V</b>	<b>pastes</b> a bit that has previously been cut or copied	
I looks like a cut 	<b>CTRL + I</b>	<b>separates</b> the track at the point where you clicked with the cursor	
Save 	<b>CTRL + S</b>	<b>saves</b> the project	
Z looks like scratching something	<b>CTRL + Z</b>	<b>undoes</b> the last action	
Y is a step back from Z in the alphabet	<b>CTRL + Y</b>	<b>redoes</b> the last action	
			(on <b>Mac</b> : <b>command + shift + Z</b> )
Fit 	<b>CTRL + F</b>	fits the project to the window	
	<b>CTRL + scroll up</b>	<b>zooms in</b>	
	<b>CTRL + scroll down</b>	<b>zooms out</b>	

You'll find all shortcuts in your menu (**Edit/Settings/Keyboard**). There, you can also create new shortcuts or change existing ones.



## 3. Let's Get to Work! Practice Exercise

The example from our workshop is meant to illustrate how to import and edit files in Audacity. The plan is to take a radio intro, edit it and put some music under it. After that, there should be a smooth transition to the next song.

### IMPORTANT:

A piece of music that's in the background of speech should be purely instrumental and without singing. Singing and talking at the same time are confusing to the listeners.

### 3.1 Creating a New Folder

Before you get to work, create a **new folder** for each editing project (e.g. "Street Survey").

Please note: You need to save **all** the **files** that are connected to your editing project in this folder (this also means all songs, MP3s, interview recordings, sounds, etc.). Otherwise you might not be able to edit the file later on.

For our exercise, we do the same. Create a folder marked "Editing Exercise" and place all files (jingle, intro, background music, following song) into said folder.

Then open Audacity.

### 3.2 Creating a New Project

By clicking "**File**" and then "**Save project as**" in the menu, you create a new project. Audacity projects can be identified by the extension **aup3**. Give your file a name you'll remember and save it to the project folder you created before. A window will pop up, warning you that you are creating a special Audacity file that can only be opened using Audacity. Just ignore it. Finished projects can later be exported as WAV - or MP3 for the radio.

### TIP:

Tick the checkmark for "Do not show this warning again" so this window doesn't pop up every time.

### 3.3 Importing the Files

**TIP:**

For a more complicated production (like a radio play), **more tracks** might be needed. You can add these by clicking **Tracks/Add New/Stereo Track**.

As a first step, import the audio files you want to use into Audacity. In our example, these are the radio intro, jingle and two pieces of music. The easiest way to do this is via **drag & drop**. This means that files can be dragged directly from the folder into the project window. Importing them using the command **File/Import/Audio...** is also possible. Audacity will automatically create a separate track for each file. This means the files are layered on top of each other.

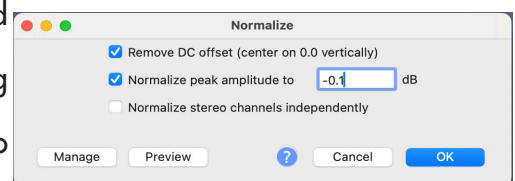
### 3.4 Fitting the View

There are various options to organize your project so it's easier for you to see where everything is.

1. In order to see all tracks at once, go to **View/Fit Project to Window** or use the shortcut **CTRL + F**.
2. There are two ways to zoom into the clips:  
**CTRL + scroll up = zoom in**  
**CTRL + scroll down = zoom out,**  
or use the **magnifying glasses** in the toolbar.
3. You can magnify individual tracks as much as you like by using the **yellow line** under the track to pull them to the size you want.

### 3.5 Normalizing

Next, you need to normalize the sound volume of your audio files. Normalizing means adjusting the sound level of audio files to a certain target level.



Double click on the track to select it (background of the track is now white).

Now you can adjust the sound level using the command **Effect/ Normalize...** A first good **reference value** for normalizing is **-0,1db**. As you do this more often, you'll get more of a feeling for it.


Individual sections of a clip can be marked with the selection tool and normalized separately.

#### **ATTENTION:**

If there are **peaks** or **clippings** at some points of the recording, the normalizing will take these into account and the whole recording will be only a little louder than before. So it makes sense to normalize a file without those peaks.

### **3.6 Cutting With the Selection Tool**

Now we need to cut all the "umms" from the intro. Remember: if you want to hear only one of the audio tracks, click **"Solo"** on this track or **"Mute"** on all the others.

Bits from the intro that are not needed (like longer breathing pauses, noises like the famous "umm" etc.), can be cut from the track. **Mark** them with the selection tool  then press the **Delete** key (or **Del**). Zooming in will help you see exactly where you need to cut.


The selection tool can also be used to copy (selected sections of) a clip (CTRL + C) or cut (CTRL + X) and paste (CTRL + V) them into the same or another track.




#### **IMPORTANT:**

For a more complicated production (like a radio play), **more tracks** might be needed. You can add these by clicking **Tracks/Add New/Stereo Track**.

### **3.7 Separating Clips**

The audio content within one track can be separated into several clips. Use the selection tool  to choose the point where you want to separate the two clips. Then press **CTRL + I** (or use **Edit/Separate Clip**) to separate the clip. Now the clip can be moved from one track to another.

1. Use the selection tool  and click on the spot where you want to separate the audio clips from each other.

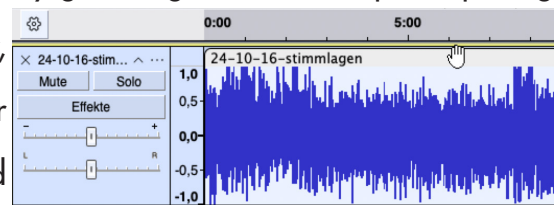
**TIP:**

To delete a cut and **reconnect** the clips, you have to select the cut. Then, click right and “**connect clips**”.

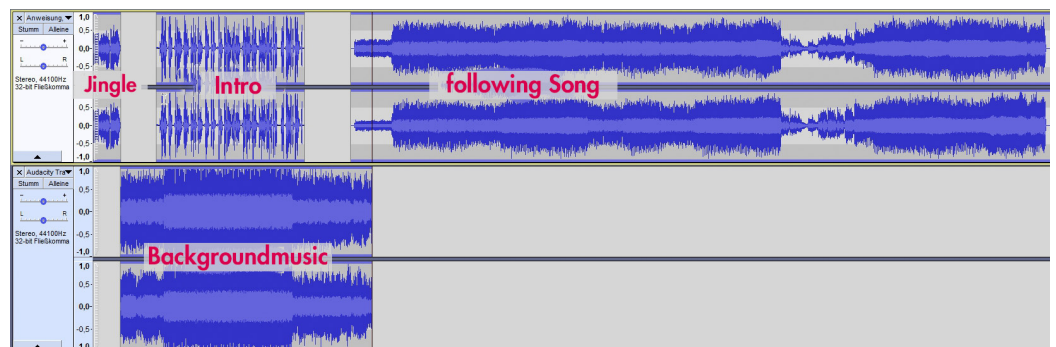
2. Use the command **CTRL + I** to separate the pieces. The thick black line marks the cut.
3. Grab the clip at the top (where the name is, see page 2 and next step) and move it to where you want it. Delete tracks that you no longer need, so things don't get too complicated.

### 3.8 Moving Clips

You can move clips to the left or right by grabbing them at the top and pulling them across the track. The same way, clips can also be moved to another track. (Attention, to do this, you need to first clear the necessary space in the track you want to move your clip to!).



For our example, move the jingle to the beginning of the track. Put the background music under it in track 2. The intro goes to the right of the jingle, with a few seconds of distance in between them. The song that follows the intro can also go on track 1, after the background music finishes (see screenshot below).



**Keeping things organized:** Usually, a radio show or a podcast is made up of several spoken passages that alternate with music, sounds, interviews etc. It's a good idea to put clips that go together thematically on the same track. Too many tracks can be confusing.

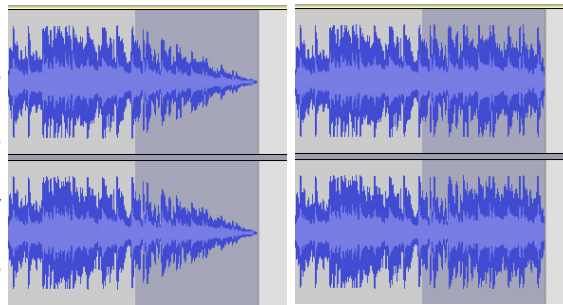
When you need to move several things around (e.g. moving one or more whole tracks), remember to fit the project to the window with **CTRL + F** to still be able to see everything in one glance.

**TIP:**

In order to move one clip and all the following ones within a track, just keep the shift key pressed while you move it.

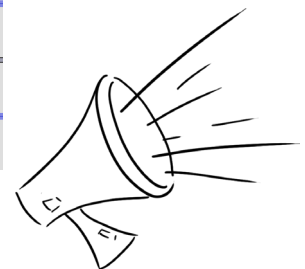
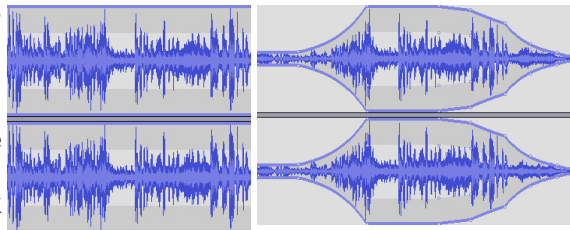
### 3.9 Fading In and Out

Fading audio files in and out is very easy. First, mark the passage that you want to change. Then go to “Effect” and select “**Fade In**” or “**Fade Out**”. (See images on the right – before and after).



### 3.10 Defining Sound Volumes With the Envelope Tools

For bigger volume changes, there’s the envelope tool. If the tool is active, there will be blue lines at the upper and lower edges of the track (this is the amplitude envelope) that can be modified with the envelope tool.

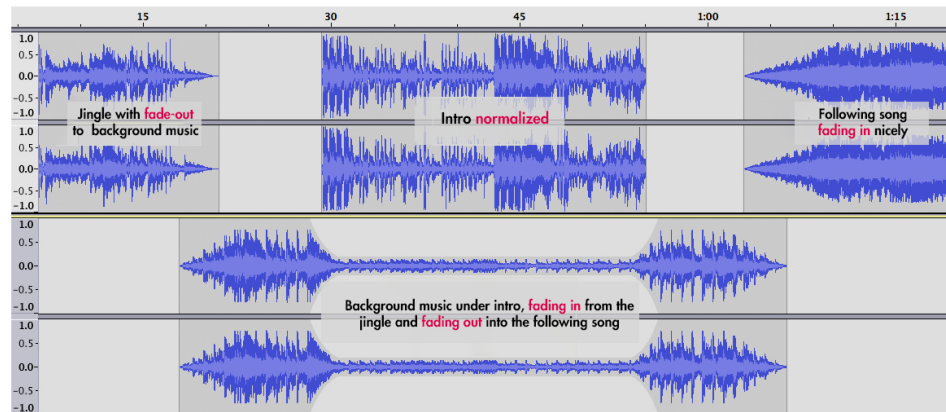


Set marks by clicking on the upper blue line. If you keep the mouse button pressed, you can move the marks to the sides and up and down. With several marks, you can create beautiful **fades**.

In the **example** below, you can see how the background music was faded in and out in order to not drown out the intro that’s put over it. Then the song was faded back in and into the next song.

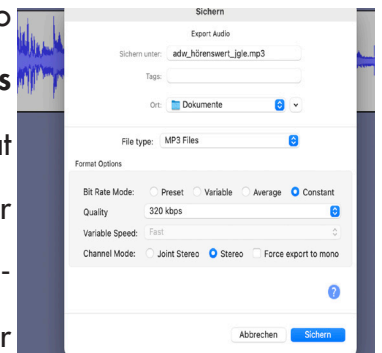
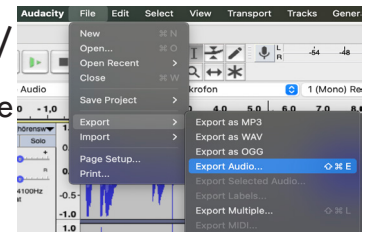
**Remember:** If you want to correct something on a track or use the sensitive envelope tool, it’s a good idea to zoom into the track. The track can also be magnified with the yellow line between the tracks.

When the practise exercise is done, it should look approximately like this:



### 3.11 Exporting as MP3

1. By clicking the command **File/Export**, you can now export the file to various file formats.
2. Completed shows and contributions need to be exported as **MP3** with **192** or **320 kbps (Constant)**. These settings can be found at the bottom of the Save window under "Format Options". They ensure the ideal conditions for saving the show online as well as for broadcasting it on the radio.



If you'd like to keep editing the file later on, it's best to export it to WAV. In this format, there will be no loss of quality because the audio material does not get compressed. On the other hand, **WAV** needs a lot of storage. A 3-minute audio in MP3 needs about 5 MB. As a WAV file that same audio takes up about 40 MB.

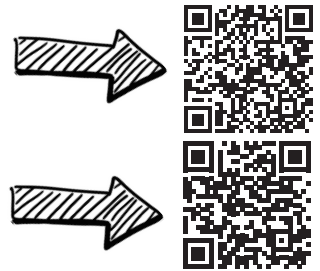
## 4.Side Note: FFMPEG-Codec

Sometimes, Audacity will inform you that an audio file cannot be opened because the library is missing. In these cases, you need to install the FFMPEG-Codec. With it, you'll be able to open and work on the following **file formats** in Audacity: **MP4, M4A, AAC, AC3, AMR** and **WMA**.

Go to the **download page** for the FFMPEG codec:

**Windows:** <https://lame.buanzo.org/ffmpeg64audacity.php>  
and download the file named FFmpeg\_v2.2.2\_INSTALLER\_(.EXE).

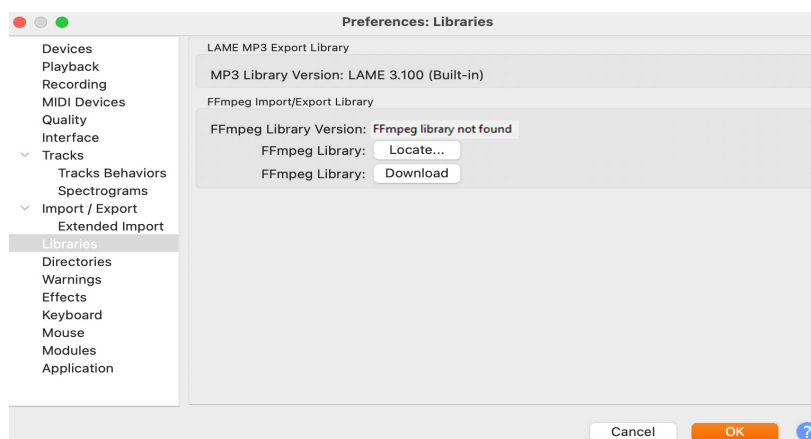
**Mac:** <https://lame.buanzo.org/#lameosx64bitdl>  
and download the file named ffmpeg\_64bit\_osx.pkg.



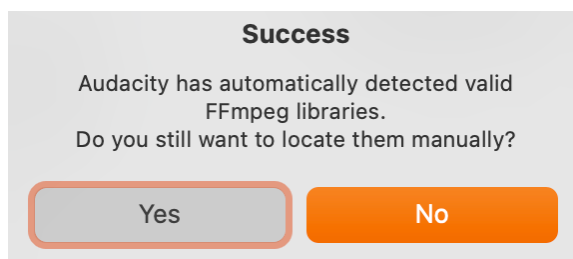
Open the file and follow the instructions during the **installation process**. Important: Take a note of the **location** you're installing the **codec** to!

If Audacity was open during the installation, close it down completely and reopen it afterwards. Now, Audacity should be able to **recognize** the FFmpeg library **automatically**. You'll know it worked, when you'll be able to open all the file formats mentioned above with Audacity.

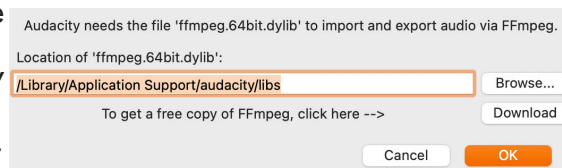
If Audacity does **not recognize** the library **automatically**, you need to show it the way yourself. Open "**Settings**". For Windows, go to Edit/Settings, for Mac go to Audacity/Settings. Click the menu item "**Libraries**" on the right, then click "**Locate**" next to "FFmpeg library".



Now, Audacity may open the window you can see on the right, where it says that the files have been **detected automatically** and asks whether you still want to locate them manually. Click **“No”**. Now the codec has been installed.



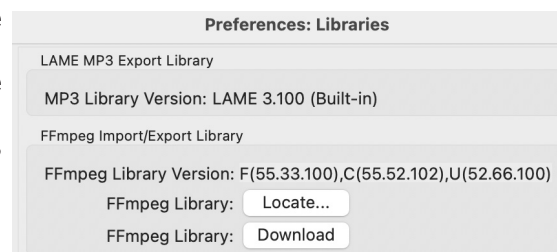
If Audacity does not find the codec by itself, another window will pop up. In it, click **“Browse”**.



Now select the **location** where you installed the library in the step before. For **Windows**, check the folder for the file **avformat-55.dll**. For **Mac**, look for **ffmpeg.55.64bit.dylib**.

Click **“Open”**, then **“OK”**. Now you're back on the pop up. Click **“OK”** again. The window will close. Now you're back in the settings and the codec has been successfully installed.

You'll see immediately whether the codec has been recognized, if the **“FFmpeg Library”** field now shows the installed version number.



Now you can open, edit and save all standard file formats with Audacity.



## 5. Studio Recording With Audacity

### 5.1 Before the Recording



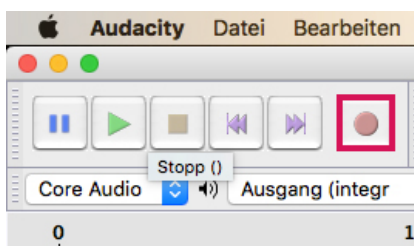
**Studio A & B:** Double check the settings on the channels you want to use in the studio (are all controllers in their correct positions?).

### 5.2 Create a Folder

For your next step, create a new **project folder** if that doesn't exist yet. Since Audacity is moving a huge amount of data back and forth, it's a good idea to put the folder **directly on the desktop** and only save it to the SendungsmacherInnenordner (show creator folder) after you're done recording.

### 5.3 Open Audacity

After you've done a voice test recording (while doing this, keep an eye on the master level) you can start recording using the "Record" button or the **R key** on the keyboard. Clicking the "Stop" button ends the recording.



The "Pause" button pauses the recording. Audacity creates a new track for each recording. Don't forget to save the project to the correct location at the start of the project and after the recording!

### 5.4 During Recording

Always and under all circumstances, pay attention that the **sound levels** of intro and music are **balanced** (Turn 1. master level and 2. headphones to 9 o'clock). If you record with differences in sound level, you'll have a lot of work to do during editing.

## 5.5 After Recording

Now **save** the recording to your show creator folder as an MP3. To be able to do this, you need to export the whole recording (jingle, interview, whole show) as MP3 with 192 or 320 kpbs (see "3.11 Exporting to MP3") Make sure that the MP3 is saved in the **correct folder**.

## 6. Recording with Digital Recorders



### 6.1 Before the Recording

- **Adapt** your recorder and further equipment to the planned **recording situation**: tripod that fits, windscreen, cable lengths, right plugs, extra batteries? etc.
- Use the **pop screen** in and out of doors.
- **Double check** your recorder and the **functions** you're gonna need (Do you have everything? Does everything work?)
- Choose the ideal setting: try and find **quiet surroundings** with no background noise.
- Outdoor interview: **avoid** busy roads, construction sites, crowds of people and other unwanted **sources of noise**/don't record in their direction.
- Indoor interview: be aware of **hidden background noises** like computers, fridges, neon lights, coffee makers etc.
- Try to help your interviewee be less nervous and get over their fear of microphones in a **pre-interview chat**.
- **Hold the mic tightly**, wrap the cable around your hand so it doesn't flap around.
- Which **recording format** is the right one?



MP3 (44.1 kHz: 320 kbit): for longer recordings. Quality good enough for speech, interviews, sounds etc.

WAV (24bit): better quality than MP3. Works well if you want to do a lot of editing in Audacity later. Uses up much more storage.

## 6.2 During the Recording

- Be sure to wear **headphones** for optimal control during recording (Remember, you are also the director!). This is the only way you'll be able to identify background noises.
- Double check if the device is actually recording.

**Too loud:** clippings cause heavy distortions, making the audio useless.

**Too quiet:** when you enhance the volume during the editing process, you'll get noise.

- Never let go of your mic.
- Maintain **eye contact** and nod etc, don't react with sounds or comments ("mmmh", "yes of course", "really?")
- Each place has its own ambience! It can often be useful for the editing process to record 30 seconds of room sound before starting the interview.

## 6.3 After the Recording

- **Save** the recording (by pressing "Stop") and be sure to **turn off the mic**.
- Before giving back the equipment: **save the files to your own computer** and delete them from the recorder!
- Never transfer the files directly from the recorder to the editing program. You could lose your files!
- Before giving back the equipment you borrowed, check whether **everything is there** (batteries etc.).



