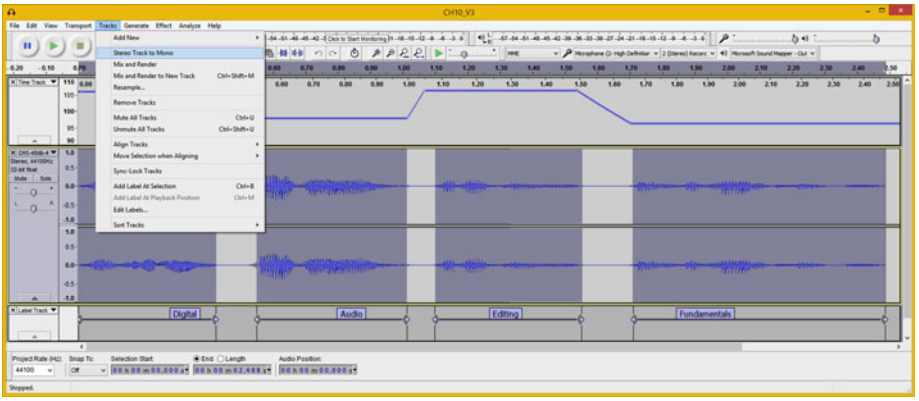

Figure 10-9. *Select Tracks ➤ Stereo Track to Mono*

Your stereo voice-over sample data is now mono voice-over sample data contained in a Mono Track, as shown in Figure 10-10. Notice that this track sounds essentially the same if you play it back.

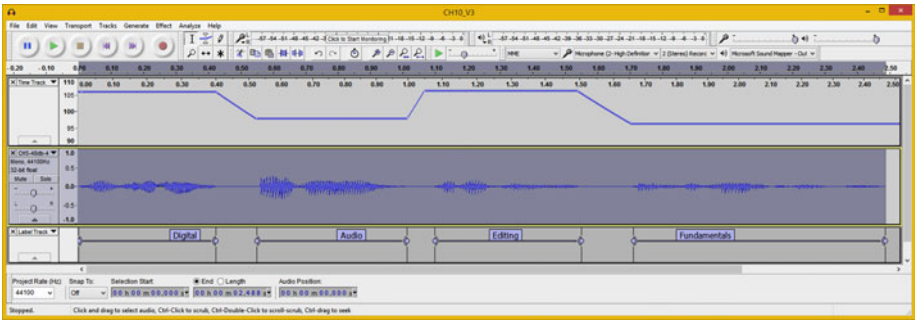

Figure 10-10. *Mono Track is the summary of Stereo Track data*

If you click the left side of the Mono track, next to its track name area, your entire Mono Track should be selected. However, your selection sets are not individually shown as they were before, thus something has changed during this transition. Let's investigate this further to see which of the selection sets, labels, or envelopes (volume) control data might have disappeared.

As you can see in Figure 10-11, your Label Track data is still intact, and if you click the label names in the selection set, the data is also still in place. However, if you click the Envelope Tool icon (shown selected in Figure 10-11), you'll find that the envelope data was lost in the algorithmic combination of the tracks.

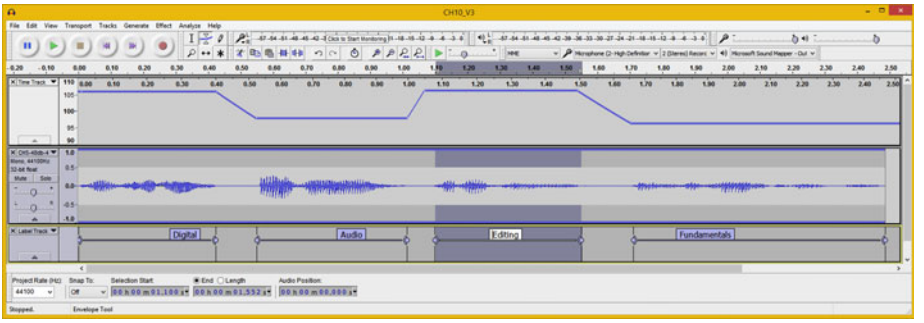

Figure 10-11. *You can still select Label Track, but the envelopes are gone*

Let's hope that the Audacity Team is working on this!

Let's take a look at some of the other important editing functions in the Tracks menu.

Track Resampling: Changing the Track Sampling Frequency

The other significant way to reduce the data footprint in your digital audio assets is to cut the **sampling frequency** in half, saving another 100% in data, because you are taking half as many data samples during each second. Using 22.05 kHz for voice-overs is very high quality; in fact, if you want to reduce the data footprint another 200%, you could resample to 11.25 kHz and still get a good voice-over reproduction.

You can resample audio data in Audacity on a track-by-track basis by using the **Tracks ➤ Resample** menu sequence. It is important that you set a starting sample rate of CD quality (44.1 kHz), or even THX quality (48 kHz), so that later you have plenty of source data for your resampling algorithm to work with. It also helps to resample to an even multiple of 2, 4, or 8, if possible. In this case, 4 × 11.25 = 44.1 and 2 ×22.05 = 44.1, so you have a perfectly even downsample scenario, allowing the algorithm to give you the best possible quality-level results.

Click the Mono Track name and select the **Tracks** menu. Then click the **Resample** menu option, selecting the 22050 sampling rate from the drop-down menu (see Figure 10-12). Click the **OK** button to resample the Mono Track at 22.05 kHz.

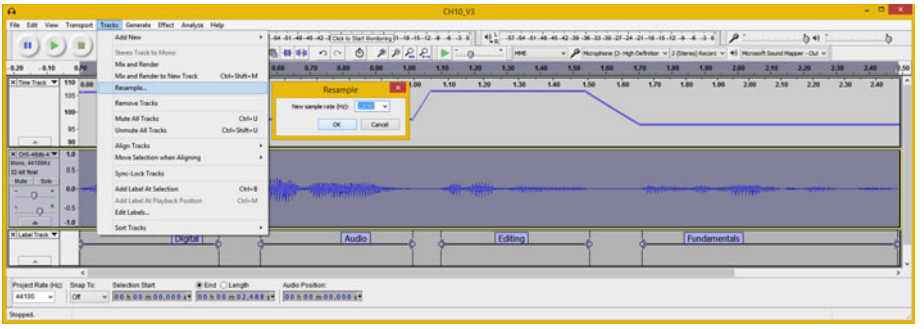

Figure 10-12. *Set new sample frequency using Tracks ➤ Resample*

Next, let's take a quick look at the **Sort Tracks** feature.

Tracks Reordering: Using the Sort Tracks Submenu

By selecting **Tracks ➤ Sort Tracks** (see Figure 10-13), Audacity allows you to sort your tracks at any time, either by a data sample's start time, which you would use if you had these four subsamples on their own tracks, or by Track Name. It doesn't matter which tracks are selected because it sorts the tracks across your entire project. Let's use the **Sort Tracks by Name** option to see how this function works on your current project. This gives you a new perspective of looking at your digital audio sample data, time warp (pitch rate) control data, and label data.

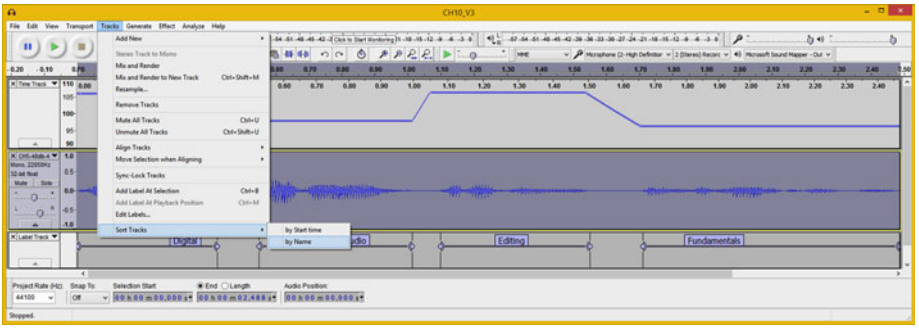

Figure 10-13. *Use the Tracks ➤ Sort Tracks ➤ by Name function*

As you can see in Figure 10-14, the current tracks have been sorted into a different order, with the sample waveform on top, the label selection sets underneath that, and the envelope control data underneath that. In this configuration, you can see that the control point relationship to the selection sets better, so I refined these even more using the track configuration; now the points and selection set lines align even better than before.

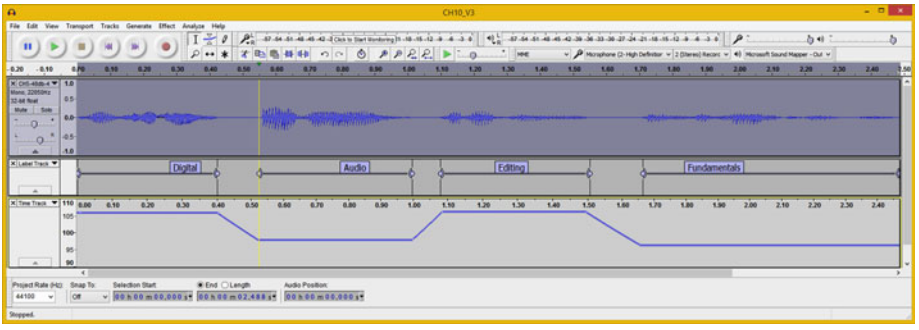

Figure 10-14. *Your tracks are now rearranged by track name*

Now let's return to the Stereo project version by using the **Edit ➤ Undo** menu sequence several times. Alternatively, you could simply open your **CH10_V3.aud** project.

It is important to note that Audacity 2.1 uses an **undo queue**, which keeps track of your "moves" and can undo whatever you have done as far back as you need to undo it, which can be quite handy. This is a feature in production software packages such as GIMP, Blender, Lightworks, and Inkscape, among others. These are all covered in my *Android Studio New Media Fundamentals* (Apress, 2015) title.

Next, let's look at adding a new blank track and placing synthesized tone data into it. I'll cover synthesis in Audacity, which is found in the **Generate** menu, in the next chapter.

Adding Tracks: Creating a New Track

First, select the Label Track by clicking in the blank area at the far left of the track, so that your New Track is underneath it, since the labels are being used as selection set guides for the Stereo track above the Label Track. Then select **Tracks ➤ Add New ➤ Mono Track** (see Figure 10-15). This is how you add a blank track to a project, for any of the four track types, whenever you need to expand the complexity of your compositing.

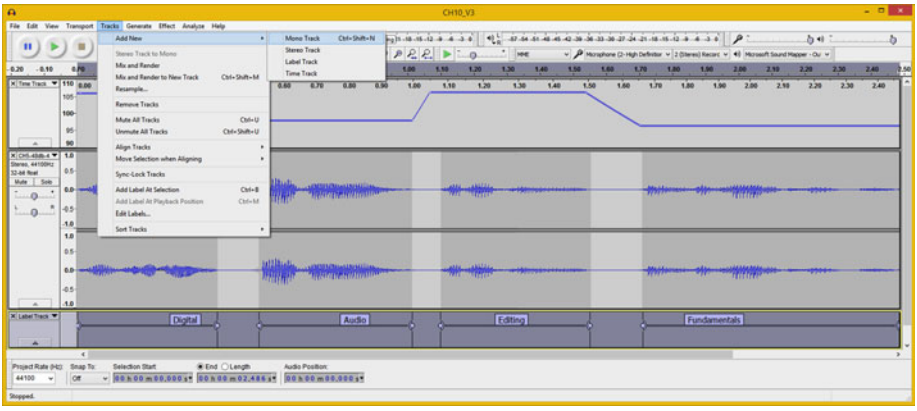

Figure 10-15. *Select the Label Track and add a new Mono Track*

As you can see in Figure 10-16, the blank track is added underneath the Label Track. You can use the **Generate ➤ DTMF Tones** menu sequence to synthesize audio in this new track. I named the DTMF sequence **telephonedialer**, used 50% volume to composite the audio with the voice-overs, and used a one-half second duration with a sample rate duration setting of 22050 Hz. The resulting tones are seen in Figure 10-17.

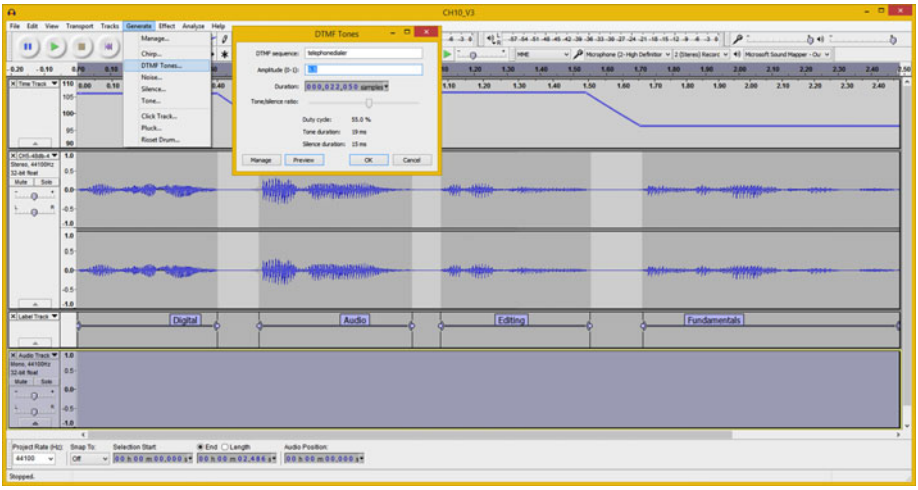

Figure 10-16. *A Mono Track will be added under your Label Track*

Next, let's look at how to reposition tracks so that the tone sequence aligns before the vocals start.

Dragging Tracks: Repositioning Your Track Order

You need to position the Mono Track before the Stereo Track in the audio composite. This is done using a drag-and-drop operation, as shown in Figure 10-17 ("before" the drag-and-drop is shown in the left screen; "after" is shown in the right screen).

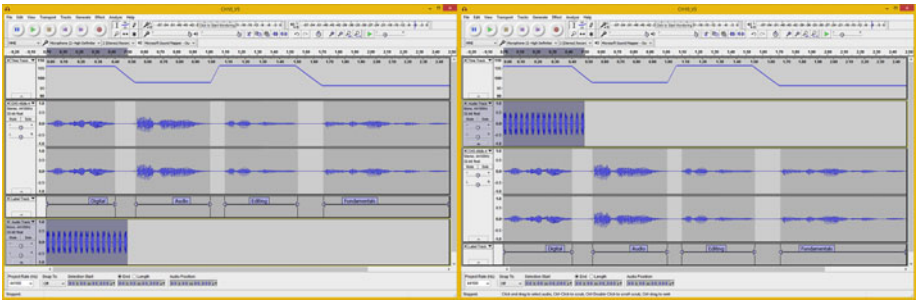

Figure 10-17. *Drag the Mono Audio Track above your Stereo Track*

To reposition tracks in this manner, you click the track name and information area, and drag the track up or down to reposition it. Now that your tracks are in the right order for using track alignment features, let's take a look at that next.

Aligning Tracks: Using the Align Tracks Feature

Audacity has a number of useful track alignment features, which are located under the **Tracks ➤ Align Tracks** and **Tracks ➤ Move Selection when Aligning** menu sequences. They are self-explanatory, so be sure to play around with them. To invoke an alignment, select the tracks that you want to align (see the left screen in Figure 10-18) and select a track alignment option.

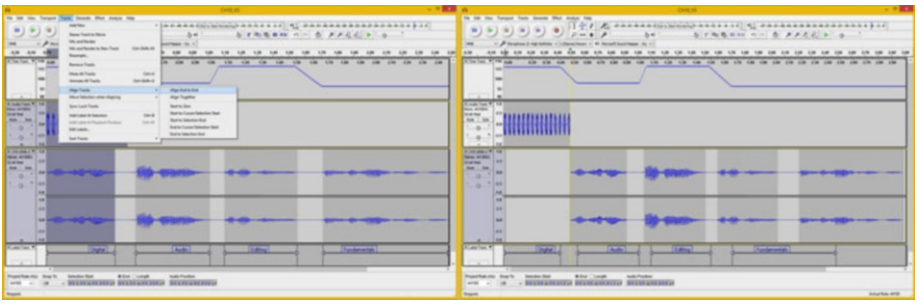

Figure 10-18. *Shift-select multiple tracks, and use Track Align*

As you can see in the right-hand screen in Figure 10-18, the **Align End to End** function aligns the audio compositing project so that your Mono Track DTMF Tones plays back before any of your vocal samples are played.

Take a close look at the bottom of the right screen in Figure 10-18; a problem was introduced with the alignment of the Label Track. You need to drag the right (or left) dot for each of the selection set labels, and reposition them back underneath the subsamples in the Stereo Track. This lets you be more proactive with Audacity, so it's a good thing.

To add a selection set label for the DTMF Tone Sequence, you want to use the selection (vertical bar) tool and then select the area of space where you want the selection set range to be defined, as shown at the bottom of Figure 10-19.

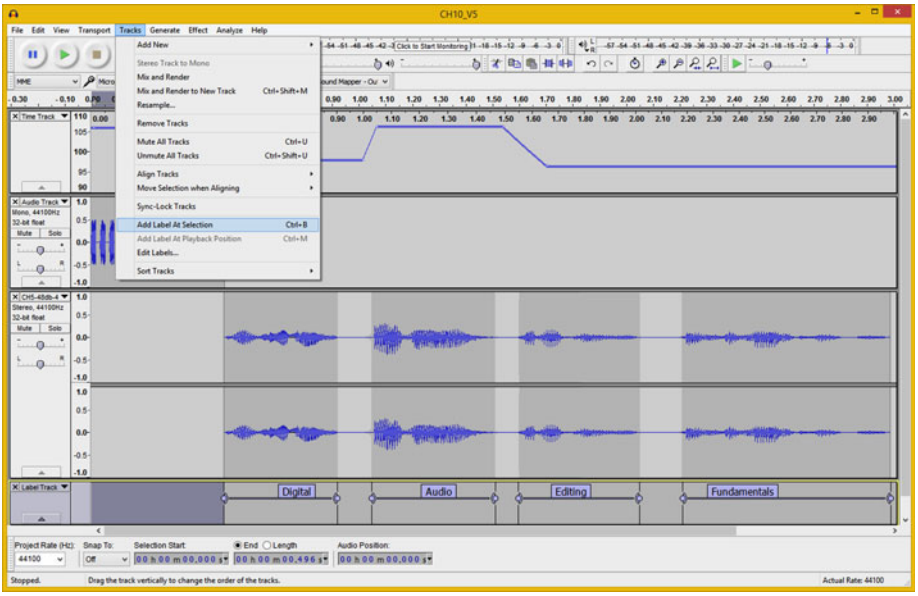

Figure 10-19. *Align selection set labels, and select left area*

Next, select **Tracks ➤ Add Label At Selection** (see Figure 10-19). This tells Audacity to create the selection set label range and sets the dots and chevrons!

As you can see on the bottom-left of Figure 10-20, all that you have to do is type the **DTMF Tone Sequence** label, and the Label Track is upgraded to contain your selection set for the DTMF Tone section that was added. You're done once you adjust the envelope data.

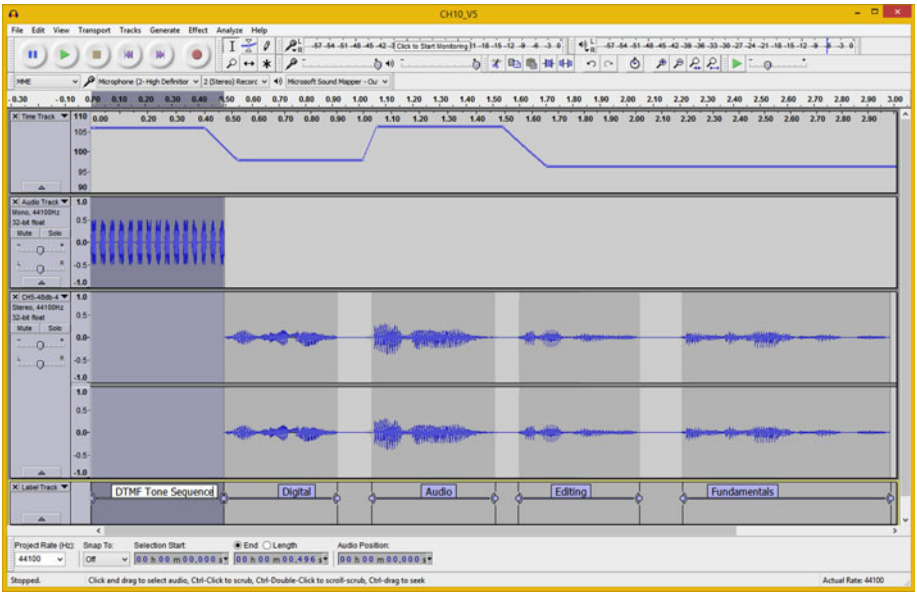

Figure 10-20. *Edit a text field for the new selection set label*

You may have also noticed in Figure 10-20 that the data for the envelope control points has not been shifted over with the align tool, so you have to get some more practice with Audacity and move them 0.5 seconds to the right for each of the control points.

Once you have done this, your Audacity project should look like the one shown in Figure 10-21. I saved the project as `CH10_V6.aud` so that you have it in the book repository.

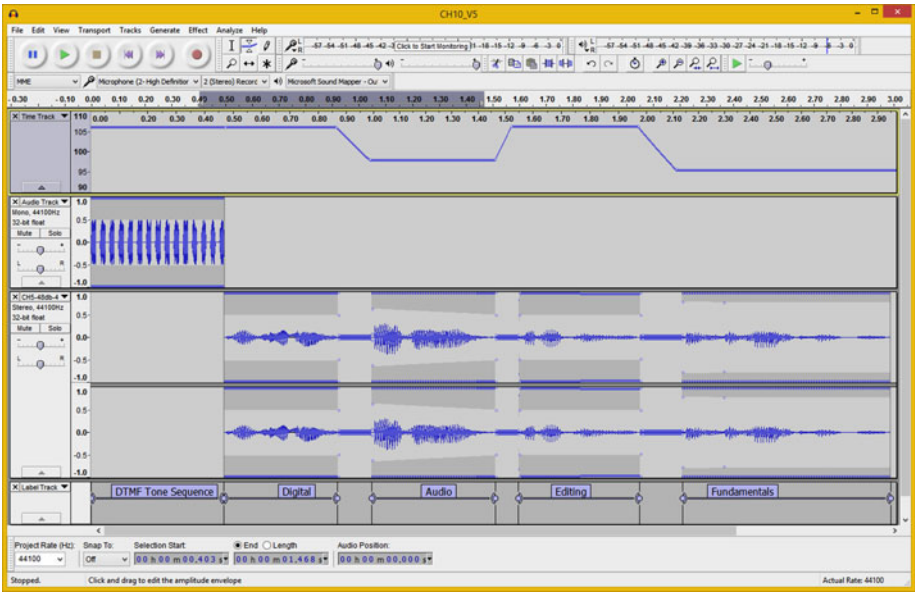

Figure 10-21. *Use an Envelope Tool to reposition control points*

Make sure to get a good amount of practice with the tool collection on the Tracks menu, as tracks are the main way to separate your editing moves and sample data for your Audacity 2.1 projects.

Using all the tools that you've learned about thus far, such as envelopes, selection sets, algorithms, and so on, you should be able to assemble any audio composite that you'll need for your multimedia production and digital audio asset creation process.

Summary

In this chapter, you looked at how to create digital audio compositing projects by using the tracks features found in Audacity 2.1. You looked more closely at Label Tracks, added a Time Track, and converted a Stereo Track to a Mono Track. You added a new track with synthesized dial tones. You also learned how to manipulate tracks in different ways and how to align tracks to each other.

In the next chapter, you learn about **digital audio synthesis** tools in the **Generate** menu in Audacity 2.1.