

TwoTone Documentation

I'm going to the website. Now we will kind of just look at some of the features. How it works, getting started, right? So we went through the TwoTone application in the tool. You can also see from the website. We have the documentation on twotone.io and GitHub as well. So here's the getting started steps, on adding the audio track, playing audio, adding that speak title, which I'll show you in a moment, adding an audio track, adjusting the duration and advanced features as well as exporting the audio.

And then there's further documentation on the features themselves, right? So be able to create a track adding a Musical Scale, which specifically generates a sequence of notes with a pitch corresponding to the data value. And Narration Audio which plays a recorded or imported audio track, this is optionally on a loop. Say you want to create a story sonification, a data storytelling piece and add some audio narration to that or a special sound effect for a particular data point. This is a really great feature to customize your sonification. The same way you may make artistic choices about a data visualizations such as a chart or graph. In deciding on which colored to use labels, etcetera.

Now, editing the track, all tracks have a few options and operations in common, regardless of their type. Some advanced options are available in expanded track view, which can be revealed by clicking the expand button at the top right of the track. Tracks are initially listed in the order they are created, but they can also be resorted by dragging a track handle on the right hand side. You can also delete each one of these tracks by clicking the trash icon in the upper right hand corner of the frame. And muting a track which you can do by just toggling the mute button on and off. There is also a Volume Adjustment. Every track has a volume slider in the expanded view.

Filtering a Track enables you to take any track and filter that to play or not play based on the data values. Again, this is a very powerful feature that can allow for a complex layering of sounds, instruments and rhythms when combined across multiple tracks. We'll show you some more examples in the tutorials. Then you can also follow along on your own remix and replicate.

The filter controls are also in this expanded track view. First, you select a column of data to use as values to be filtered, and then you use the slider to select a range of values to be played. The values will be displayed in a bar chart to show which sections of the track will be played and which will be silent. So you can see in TwoTone, we are using kind of data visualization as a complement to sonification.

Advanced Track Controls. We can go through these as well. Also on the website twotone.io, each type of track has different advanced options that can be used to create complex compositions. We have Narration Audio. This can be used to add narration or background music to a project. We can Select an Audio File to click the prompt to select an audio file to be played, and these audio files can be imported from device storage or directly from the devices microphone, if one is available. Now, on the play mode, you can select the option to determine when and how often the selected audio clip will be played. You can choose a Loop and the clip will loop on repeat for the duration of the project, assuming the clip is shorter than the project duration. If a filter is applied, the audio will maintain timing with the project's playtime even through silent sections. This is useful for synchronizing music such sections without losing the rhythm.

Active Sections. When a filter is applied, the clip will play once at the beginning of each non silent section. And also finally, in play mode, you can choose Once per row. You can play one clip at a time per each row. If the clip is longer than the duration of a single row, it will be cut short. On the musical scale, tracks create melodies from data and have many options to customized pitch, rhythms and instruments. For the Data Source, you select a column from the source spreadsheet to provide the values that will determine the pitch of each note. Pitches will be spread across a range of octaves with the lowest value playing the lowest note and the highest value playing the highest note.

You can also Select Instrument. We have a number of built-in musical instruments. And then there's Key. Selecting the tonic or root note and the mode of the musical key. All notes in this track will be played in the given key. In most cases, all tracks will be in the same key. Though it's not strictly required. The lowest and highest values will play the tonic note at either end of the giving scale. Regarding scale range, you select how many octaves will comprise the range of notes from lowest to highest. More octaves will result in finer grained distinction between values. Fewer octaves will allow different tracks to represent different data at opposing ends of the scale. Even using the same instrument, like playing left hand and right hand on a piano. Each instrument chosen will have a different maximum range of octaves, depending on how high and low that instrument can play. The entire scale range can be shifted higher or lower within the range of instruments available scale. The default auto setting will place the selected scale range in the middle of the instrument scale.

Track Tempo. TwoTone plays one row of data per beat as specified in the global project duration setting. For example, a spreadsheet with 100 rows of data at 60bpm will play one note for each row, every second for 100 seconds, or one minute and 20 seconds. The Track Tempo setting is a multiplier of the global tempo that will play more than one note per row for that track, allowing for more complex rhythms. Regarding the Arpeggio, when multiple notes are played in a row, this allows for an arpeggio of notes. So what kind of data can you use in TwoTone? TwoTone will accept spreadsheet files up to 20 megabytes in size and 2,000 rows of data. The formats supported are .xls, .xlsx, .csv, and .ods.

You can drag and drop files directly into the browser window. Remember that your output will only be good as your input. So please do check. Take time to check your spreadsheet for errors or any unnecessary text fields. Also, make sure that you're uploading an actual spreadsheet and not a PDF. PDF will not be readable. TwoTone is processed fully in the web browser. So this means there is no server side operations or storages performed. If you do load a number of datasets in your web application, you will have access to those throughout your project. So where do you find data online? With TwoTone we used a number of examples with city open data, for the launch of TwoTone. And those are examples that are available at twotone.io, but of course you can find open data from a number of open data portals. You can work on downloading, extracting data, cleaning data and formatting that to be uploaded for TwoTone and also kind of experiment with a range of spreadsheets and use cases, including different time based datasets and also perhaps larger datasets that may need to be filtered or use a pivot table to aggregate and kind of wrangle to be formatted to meet the requirements.