Organelle: How to Program Patches in Pure Data

Organelle is a portable synthesizer that can be programmed in Pure Data. It's a great way to get started with synthesis and programming, and it's also a lot of fun! In this article, we'll walk you through the basics of programming patches in Pure Data for Organelle.

Getting Started

The first thing you'll need to do is download Pure Data. You can get it from the Pure Data website: https://puredata.info/. Once you've downloaded and installed Pure Data, you can open it up and create a new patch.

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by Maurizio Di Berardino

★★★★☆ 4.4 out of 5

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The Organelle has a special version of Pure Data called Organelle PD. It's based on Pure Data vanilla, but it has some extra features that make it easier to program patches for the Organelle. You can download Organelle PD from the Organelle website: https://organelle.io/.

Your First Patch

Now that you have Pure Data installed, let's create your first patch. To do this, open up a new patch in Pure Data and add a few objects. The most basic objects are the **osc~** and ***~** objects. The **osc~** object generates a sine wave, and the ***~** object multiplies two signals together.

To connect the two objects, click and drag from the **osc~** object to the ***~** object. This will create a patch cable that connects the output of the **osc~** object to the input of the ***~** object.

Now, if you click on the **play** button in the Pure Data window, you should hear a sine wave playing. You can change the pitch of the sine wave by changing the value of the **freq** parameter in the **osc~** object. You can also change the volume of the sine wave by changing the value of the **amp** parameter in the ***~** object.

Adding More Objects

Now that you have a basic understanding of how to connect objects in Pure Data, let's add some more objects to our patch. Here are a few common objects that you'll use in most patches:

- **osc~**: Generates a sine wave.

- ***~**: Multiplies two signals together.

- **+~**: Adds two signals together.

- ***~**: Subtracts two signals from each other.

- ***~**: Divides two signals from each other.

- **env~**: Generates an envelope.

- **lfo~**: Generates a low-frequency oscillator.

- **phasor~**: Generates a phase-locked oscillator.

- **table~**: Generates a table of values.

You can add objects to your patch by clicking on the "Add" button in the Pure Data window. Once you've added an object, you can click on it to open its properties window. In the properties window, you can change the parameters of the object.

Creating a Sequence

Now that you know how to add objects to your patch, let's create a sequence. A sequence is a series of notes that are played back in order. To create a sequence, you'll need to use a sequencer object.

There are two main types of sequencer objects in Pure Data: the **seq~** object and the **metro~** object. The **seq~** object is a step sequencer, which means that you can manually enter the notes that you want to play. The **metro~** object is a timed sequencer, which means that it plays notes at a specified interval.

To create a sequence, add a **seq~** object to your patch. Then, click on the **seq~** object to open its properties window. In the properties window, you can set the number of steps in the sequence and the length of each step.
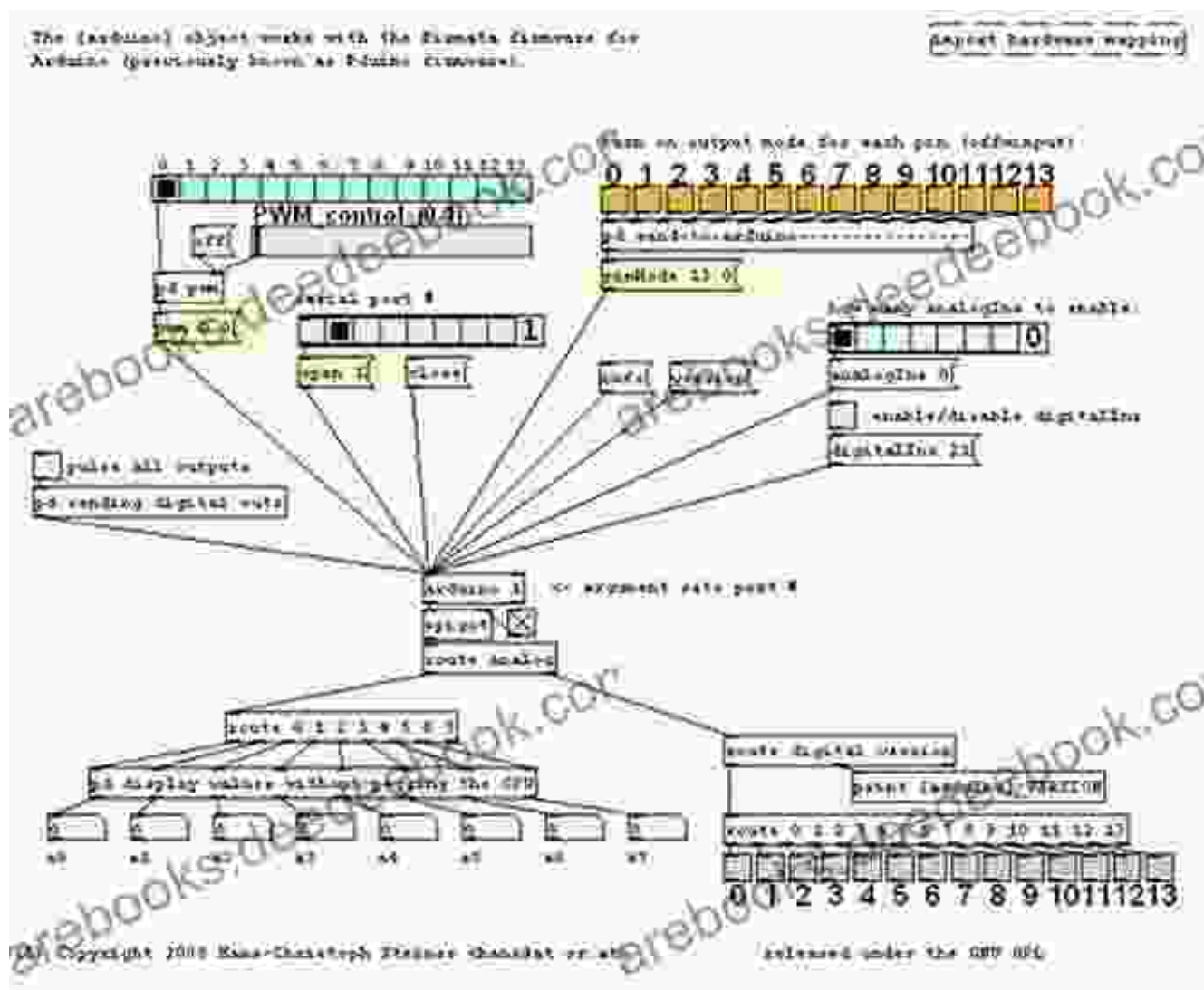
Once you've set the parameters of the **seq~** object, you can start adding notes to the sequence. To add a note, click on the "Add" button in the **seq~** object's properties window. Then, click on the note that you want to add in the "Note" column. You can also set the velocity of the note in the "Velocity" column.

Once you've added all of the notes to the sequence, you can click on the **play** button in the **seq~** object's properties window. This will start playing the sequence.

Adding Effects

Once you have a sequence, you can start adding effects to it. Effects can be used to change the sound of your patch. There are many different types of effects available in Pure Data, including:

- **reverb~**: Adds reverb to a signal.

- **delay~**: Adds delay to a signal.

- **distortion~**: Distorts a signal.

- **filter~**: Filters a signal.

- **chorus~**: Adds chorus to a signal.

- **flanger~**: Adds flanging to a signal.

- **phaser~**: Adds phasing to a signal.

To add an effect to your patch, add the effect object to your patch and then connect the output of the effect object to the input of the ***~** object that is connected to the speaker object.
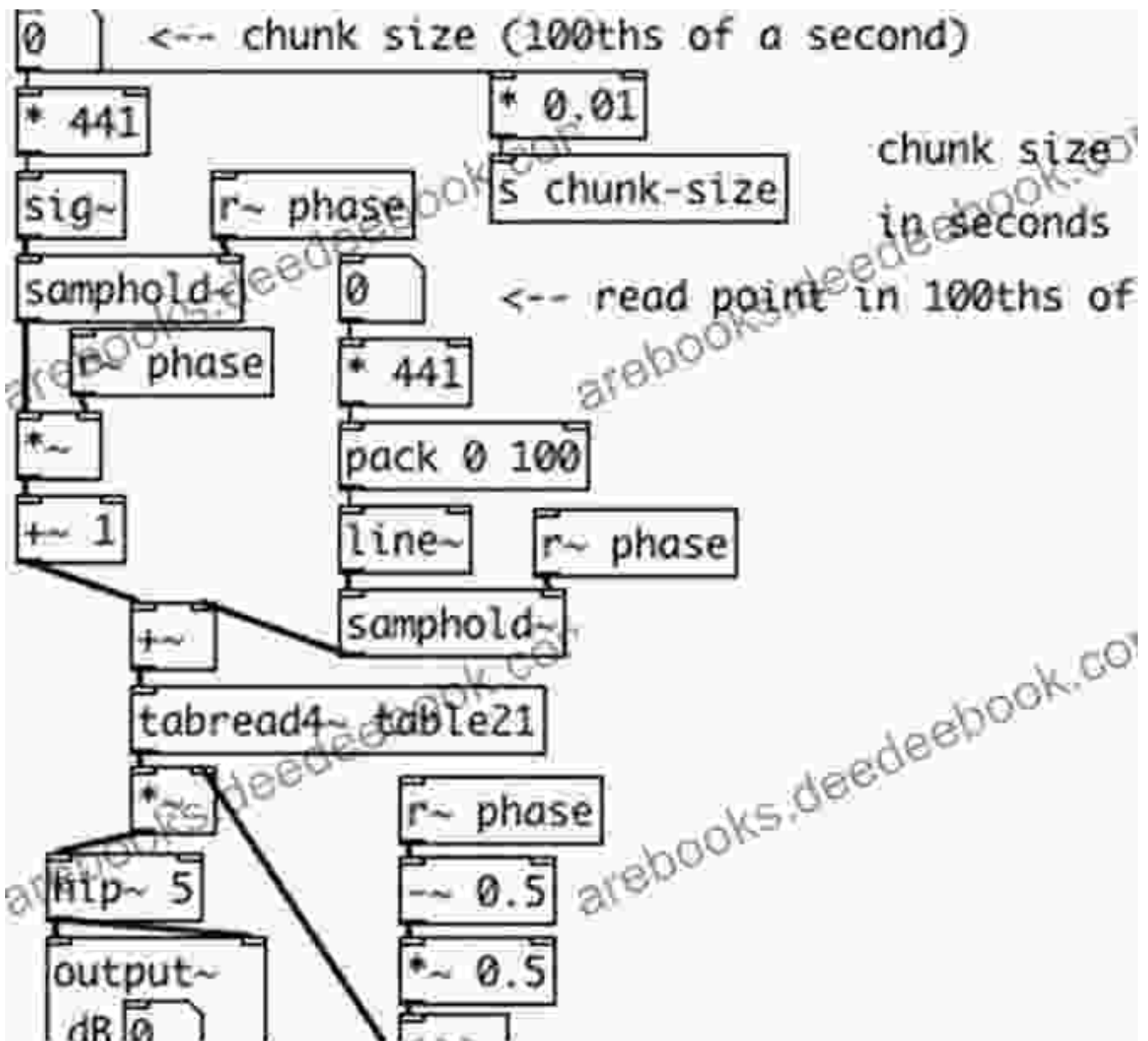
Once you've added an effect to your patch, you can change the parameters of the effect object to change the sound of the effect.

Saving and Loading Patches

Once you've created a patch, you can save it to a file. To do this, click on the "File" menu and then select "Save As". Then, enter a name for your patch and click on the "Save" button.

To load a patch, click on the "File" menu and then select "Open". Then, select the patch that you want to load and click on the "Open" button.

This is just a brief overview of how to program patches in Pure Data for Organelle. For more information, you can visit the Pure Data website or the Organelle website.

Programming patches in Pure Data is a great way to learn about synthesis and programming. It's also a lot of fun! So, if you're interested in making your own music, I encourage you to give it a try.

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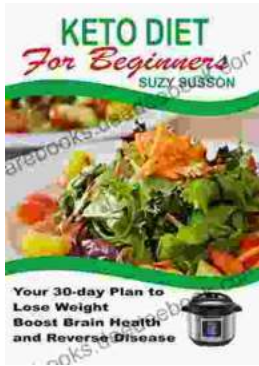
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