Using Live Loops

By All About Code

www.edublocks.org
www.allaboutcode.co.uk

Using Live Loops – EduBlocks + Sonic Pi

Objective

We shall be using the powers of EduBlocks to create some live coding! Sam Aaron (Creator of Sonic Pi) uses live loops to do performances using Sonic Pi. This worksheet will help you use Live Loops in EduBlocks!

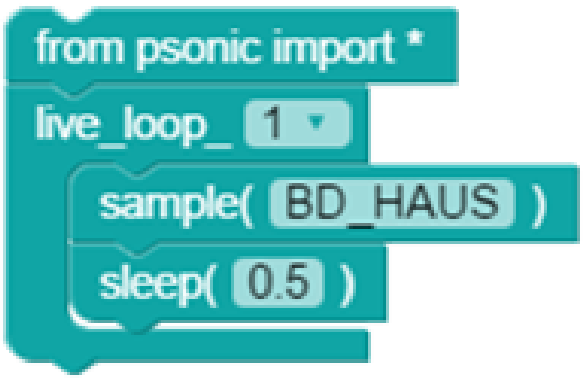
Getting Started

1. Start by going into the Raspberry Pi menu and clicking on Programming, then Sonic Pi. This takes a few minutes to load, it is best not to click anywhere while this is loading as it can crash the program.

2. Double click on the EduBlocks desktop icon to open up the program. You are now ready to start Live Coding!

Let's Code

Now its time to build our code. We can drag our code blocks from the EduBlocks toolbar which is on the left hand side of the screen. Our first 2 blocks of code can be found in the Sonic Pi Tab, take a look, they are colour co-ordinated. Drag the blocks onto the workspace as shown in the diagram.



In this section of code we are importing the Python-Sonic library. The live_loop_1 block creates our first live loop. The blocks inside the loop will create a sound and will keep looping it.

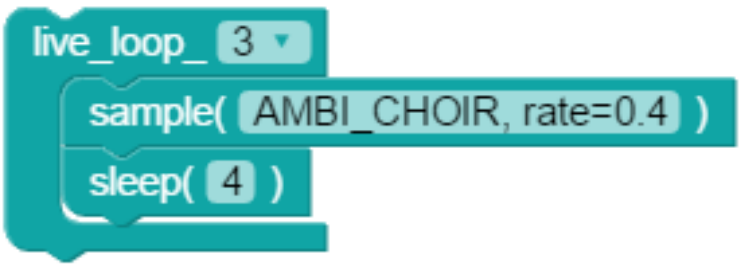
Using Live Loops – EduBlocks + Sonic Pi

Let's Code

Now lets create our second Live Loop. To change the number from 1 to 2, simple click on the number 1 in the block and select 2 from the dropdown menu. Again these blocks can be found in the Sonic Pi menu.

This is our second live loop. We have now created 2 live loops and when we run the program it will play the loops simultaneously.

Next, lets create our third Live Loop. This loop will create a singing choir sound every 4 seconds.



The rate function will change the speed that the sample is played.

Lets get a little bit more advanced in the 4th Live Loop. The Live Loop block can be found in the Sonic Pi menu. The import random, variable and for loop blocks can be found in the Basic menu.

Using Live Loops – EduBlocks + Sonic Pi

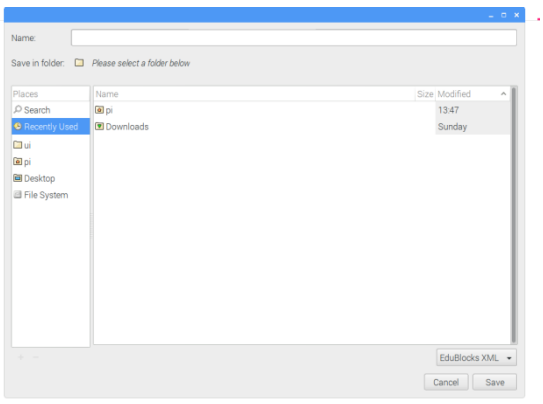
Let's Code

```
live_loop_ 4
    import random
    notes = scale(E3, MINOR_PENTATONIC, num_octaves=2)
    for i in range( 8 ):
        play( play(random.choice(notes),release=0.1,amp=1.5) )
        sleep( 0.125 )
```

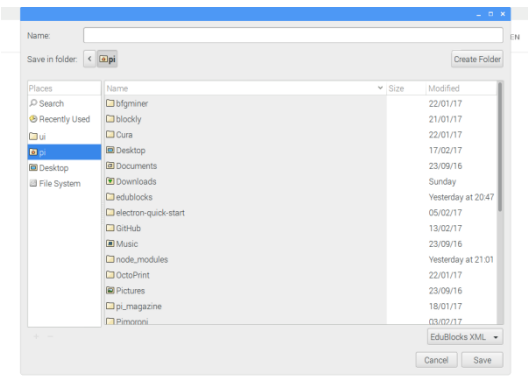
This loop will import the random library and generate a random note from the E Minor scale, this will happen 8 times then loop itself.

Save your code

Before we run our code, lets save it. Click on the save button in the top right hand corner of the EduBlocks window. Select the folder called Pi.

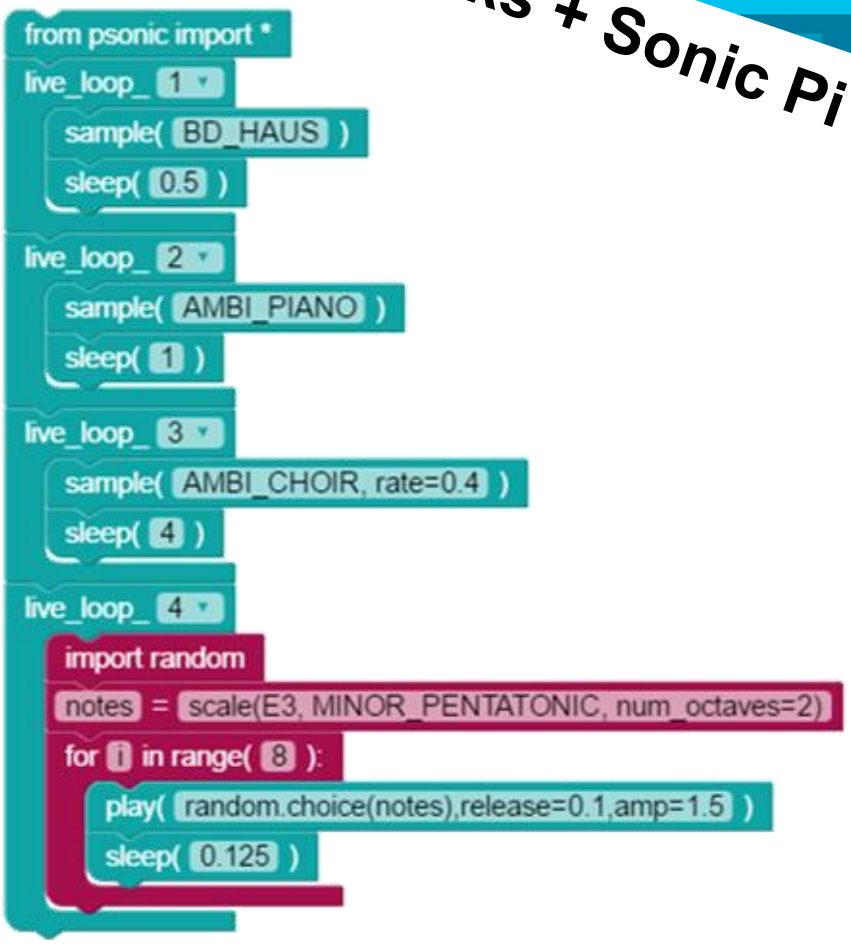


Type in the file name box lets call it **liveloops** then click save.



Run your code

Now it's time to run our code. Click on the run button in the top right hand corner of the EduBlocks window. Your code should now play. Now lets Live Code. Press ESC on your keyboard to return to the blocks. Try changing things in the code. Once you have changed it press run and when the song next runs it will have your changes in it.



Outcome

In this tutorial we have learnt how to use Live Loops and do some Live Coding by changing the samples and play commands. You have also learnt how to perform music whist making the music sound different using code.