

Setting up PureData

It is important to check that our audio is set up correctly. **(Whenever you open up PureData you have to complete step one)**

Step 1. Click on the **Media tab > Midi Settings > Output Devices > Select 'Microsoft GS Wavetable Synth' > Click on Apply and then Ok.**

Step 2. Now that the audio is set correctly the next step would be to test the MIDI connection

- Click on the **Media tab > Test Audio and MIDI > On the new window click on the square below MIDI OUT.** Now you should be hearing sound. Now exit the **'Test audio and MIDI'** window.

Creating random notes

Firstly, ensure that you are in **Edit Mode**. Click on the **Edit tab** and select **Edit Mode**

Step 1. Click on the **'File tab' > select 'New'** (This is the window you will be using)

Step 2. Click on the **'Put tab' > select 'Bang'** and place it anywhere on the **top left** of your screen. **(In PureData 'bang' is the general trigger signal).**

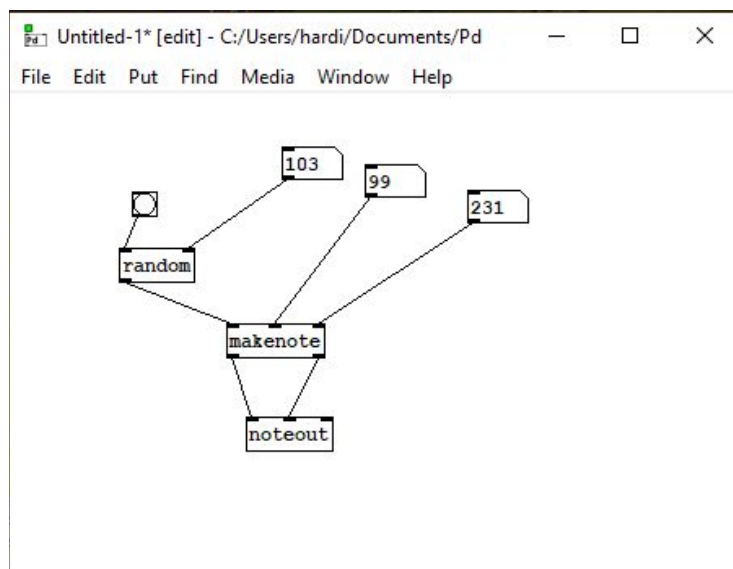
Step 3. Click on the **'Put tab' > select 'Object'** and place it underneath the **'bang'**. Write **'random 27'** inside the object, then click anywhere on the white background area.

Step 4. Click on the **'Put tab' > select 'Object'** and write **'makenote'** in it and place it below the **'random'** object.

Step 5. Click on the **'Put tab' > select 'Object'** and write **'noteout'** in it and place it below the **'makenote'** object.

Step 6. Click on the **'Put tab' > select 'Number'** and place it on the **right hand side** of the **'bang'**, repeat this process until there are **3 number boxes next to the bang**. Get out of **edit mode**, click and drag on the number box to get roughly the number 100 displayed in each box.

Step 7. Connect all the wires the way they are connected in the figure below. (Go into edit mode)



Note: When connecting you must hover the mouse over the output (it will become a circle) click, drag and connect it to the input.

★ Now you can click multiple times on the bang to hear a randomised sound.

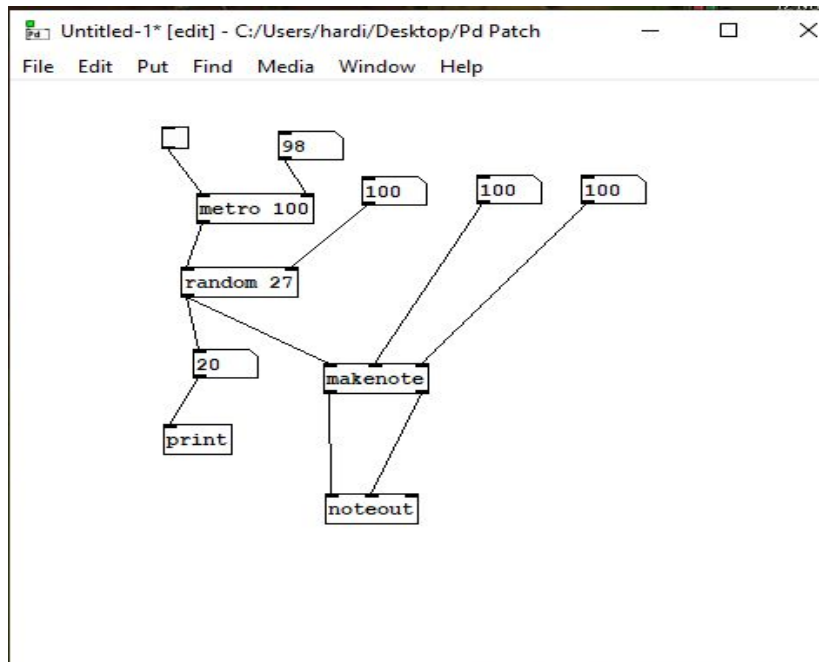
Step 8. Click on the 'Put tab' > 'Object' > write 'print' inside of it.

Step 9. Click on the 'Put tab' > 'Object' > write 'metro 100' inside of it and put it above random.

Step 10. Click on the 'Put tab' > Number > and put it above 'metro'.

Step 11. Now connect all the cables like figure 3 below.

Note: I changed the Bang to a toggle so I could start and stop it at the same time.



Step 12. Delete the cables connected to the input of 'makenote' (top nodes).

Step 13. Click on the 'Put tab' > 'Object' > put it above 'makenote' and call it 'tabread Gmajor'.

Step 14. Delete the cable for print and connect the output of 'tabread Gmajor' to the input of 'print'. Then connect the output of the number below 'random 27' to 'makenote' first input.

Step 15. Click on the 'Put tab' > 'Object' > put it above tabread Gmajor and call it 'set Gmajor'. Connect the output of 'set Gmajor' to the input of 'tabread Gmajor'.

Step 16. Click on the 'Put tab' > 'Object' > place this next to 'tabread Gmajor' and write 'random 37' inside of it. Connect the output of the 'metro 100' to the input of 'random 37'.

Step 17. Click on the 'Put tab' > 'Number' > Add a number box under the random 37 object. Connect the output of random 37 to the input of the number box.

Step 18. Click on the 'Put tab' > 'Object' > place it under the number box from step 17 and write '+ 80' inside of it. Connect '+ 80' output to the middle input of 'makenote'.

Step 19. Click on the 'Put tab' > 'Object' > and write 'send v' inside of it. Connect the output of '+ 80' to the input of 'send v'.

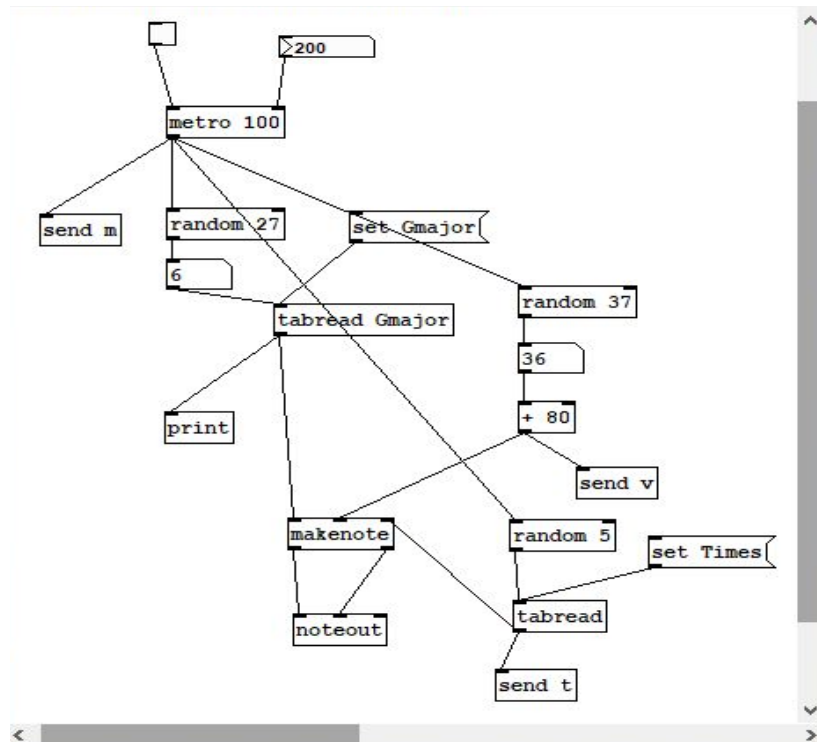
Step 20. Click on the 'Put tab' > 'Object' > put it next to 'makenote' and write 'random 5'.

Step 21. Click on the 'Put tab' > 'Object' > put it below 'random 5' and label it 'tabread'.

Step 22. Click on the 'Put tab' > 'Object' > put it below 'tabread' and label it 'send t'.

Step 23. Click on the 'Put tab' > 'Object' > put it next to 'random 5' and label it 'set Times'.

Now connect all the wires like figure below.



Random Melody generator in a scale

Next step is to create a random melody generator in the key of Gmajor. This key uses the notes G, A, B, C, D, E and F#. I have chosen to create a scale in G Major however, you could create the generator in any scale using the increments from the below.

Note No.	Name	Note No.	Name	Note No.	Name	Note No.	Name
0	C -2	32	G#0	64	E 3	96	C 6
1	C# -2	33	A 0	65	F 3	97	C#6
2	D -2	34	A#0	66	F#3	98	D 6
3	D# -2	35	B 0	67	G 3	99	D#6
4	E -2	36	C 1	68	G#3	100	E 6
5	F -2	37	C#1	69	A 3	101	F 6
6	F# -2	38	D 1	70	A#3	102	F#6
7	G -2	39	D#1	71	B 3	103	G 6
8	G# -2	40	E 1	72	C 4	104	G#6
9	A -2	41	F 1	73	C#4	105	A 6
10	A# -2	42	F#1	74	D 4	106	A#6
11	B -2	43	G 1	75	D#4	107	B 6
12	C -1	44	G#1	76	E 4	108	C 7
13	C# -1	45	A 1	77	F 4	109	C#7
14	D -1	46	A#1	78	F#4	110	D 7
15	D# -1	47	B 1	79	G 4	111	D#7
16	E -1	48	C 2	80	G#4	112	E 7
17	F -1	49	C#2	81	A 4	113	F 7
18	F# -1	50	D 2	82	A#4	114	F#7
19	G -1	51	D#2	83	B 4	115	G 7
20	G# -1	52	E 2	84	C 5	116	G#7
21	A -1	53	F 2	85	C#5	117	A 7
22	A# -1	54	F#2	86	D 5	118	A#7
23	B -1	55	G 2	87	D#5	119	B 7
24	C 0	56	G#2	88	E 5	120	C 8
25	C#0	57	A 2	89	F 5	121	C#8
26	D 0	58	A#2	90	F#5	122	D 8
27	D#0	59	B 2	91	G 5	123	D#8
28	E 0	60	C 3	92	G#5	124	E 8
29	F 0	61	C#3	93	A 5	125	F 8
30	F#0	62	D 3	94	A#5	126	F#8
31	G 0	63	D#3	95	B 5	127	G 8

Step 1. Click on the 'Put tab' > **Object** > and write '**table Gmajor**'

Step 2. Click on the 'Put tab' > **Message** > place this under the table Gmajor object. Copy and paste the following into the message

```

;
Gmajor 0 55 57 59 60 62 64 66 67 69 71 72 74 76 78 79
81 83 84 86 88 90 91 93 95 96 98 100 102 103
```

Step 3. Click on the 'Put tab' > **Object** > write '**table Times**' in it and place it under the 'Gmajor message'.

Step 4. Click on the 'Put tab' > **Message** > place this under '**table Times**' copy and paste the following into the message.

```

“;
Times 0 500 1000 2000 1000 500”
```

Step 5. Click on the 'Put tab' > **Object** > '**table GmajorBass**' and put it below '**table Times**' message from **step 4**.

Step 6. Click on the 'Put tab' > **Object** > 'loadbang'

Step 7. Click on the 'Put tab' > **Message** >

```
“;

```

```
GmajorBass 0 43 45 47 48 50 53 54 55 57 59 60 62 64 66 67”
```

Connect the **output** of loadbang to the **input** of the GmajorBass message.

Step 8. Click on the 'Put tab' > **Object** > name it loadbang and put it below GMajorBass

Step 9. Click on the 'Put tab' > **Message** > create a message and write '11 22 4' and put it under loadbang

Step 10. Click on the 'Put tab' > **Object** > and write '**drunk**' > put it below '**11 22 4**'.

Step 11. Click on the 'Put tab' > **Object** > label it '**tabread**' and place it below '**drunk**'

Step 12. Click on the 'Put tab' > **Object** > label it '**makenote**' and place it below '**tabread**'

Step 13. Click on the 'Put tab' > **Object** > label it '**noteout**' and place it below '**makenote**'.

Step 14. Click on the 'Put tab' > **Message** > write **set 'GmajorBass'** in it, place it next to '**drunk**' and connect the output to the input of '**tabread**'.

Step 15. Click on the 'Put tab' > **Object** > write loadbang and place it above **set GamjorBass** and connect the output of loadbang into the input of set **GmajorBass**.

Step 16. Click on the 'Put tab' > **Object** > label it **receive v**, place it on the right side of makenote and connect the output to '**makenote**' middle input.

Step 17. Click on the 'Put tab' > **Object** > label it '**recieve t**' and put it next to '**recieve v**' and connect the output to the most right '**makenote**' input.

Step 18. Click on the 'Put tab' > **Object** > label it '**receive m**' and connect it to the first '**drunk**' input.

Step 19. Click on the 'Put tab' > **Bang** > place it below '**receive m**' and connect the output on '**receive m**' to the input of '**Bang**'.

Now your patch should look like the figure below.

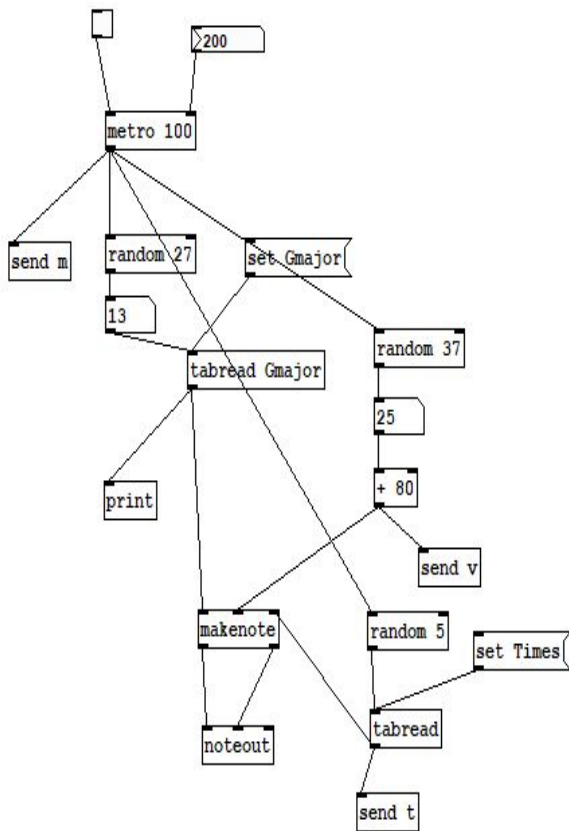


table Gmajor

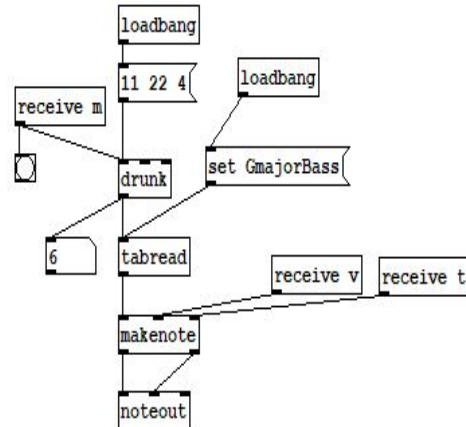
```
;
Gmajor 0 55 57 59 60 62 64 66 67 69 71 72 74 76 78 79 81 83
84 86 88 90 91 93 95 96 98 100 102 103
```

table Times

```
;
Times 0 500 1000 2000 1000 500
```

table GmajorBass

```
loadbang
;
GmajorBass 0 43 45 47 48 50 53 54 55 57 59 60 62 64 66 67
```



☐ Congratulations - You have made a random melody generator.