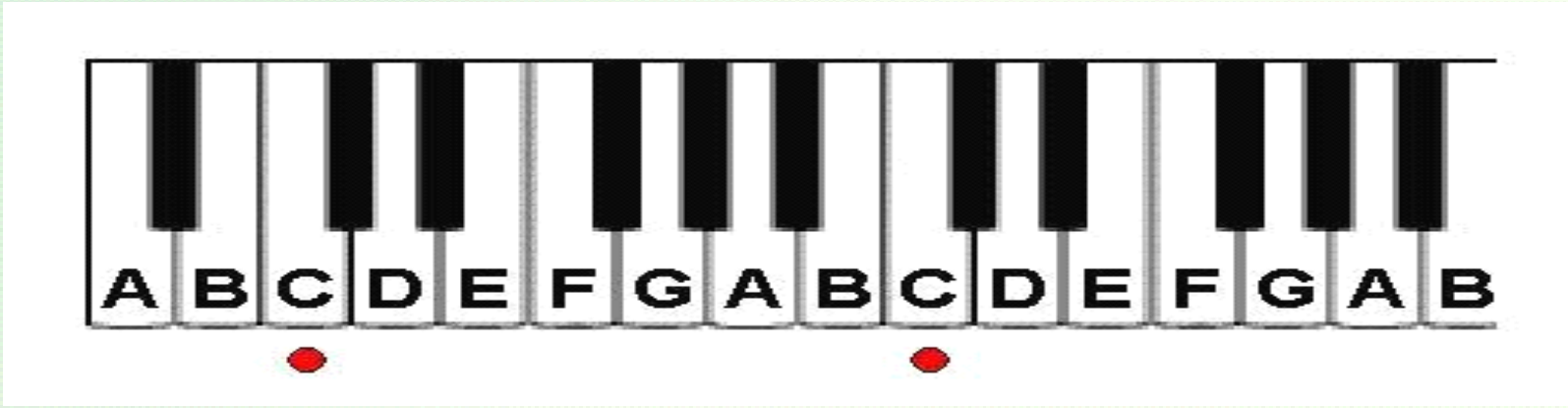
Digital Piano Player

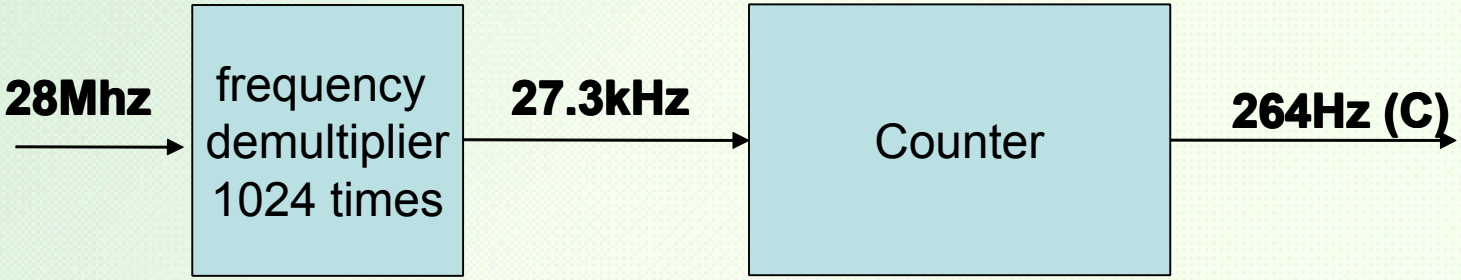
Wendan Yao
31088000

Tones vs Frequency



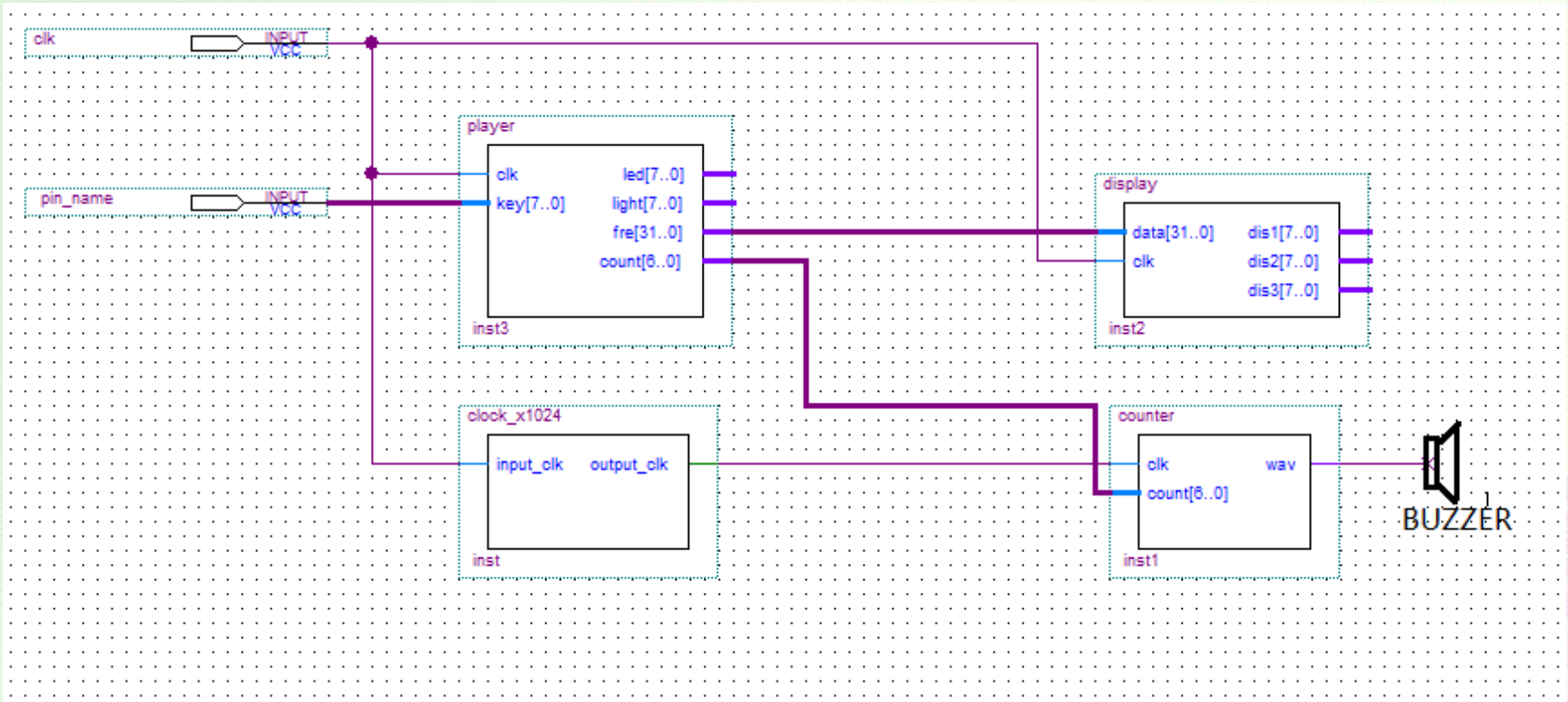
TONES	C	D	E	F	G	A	B	C
frequency	264	297	330	352	396	440	495	528

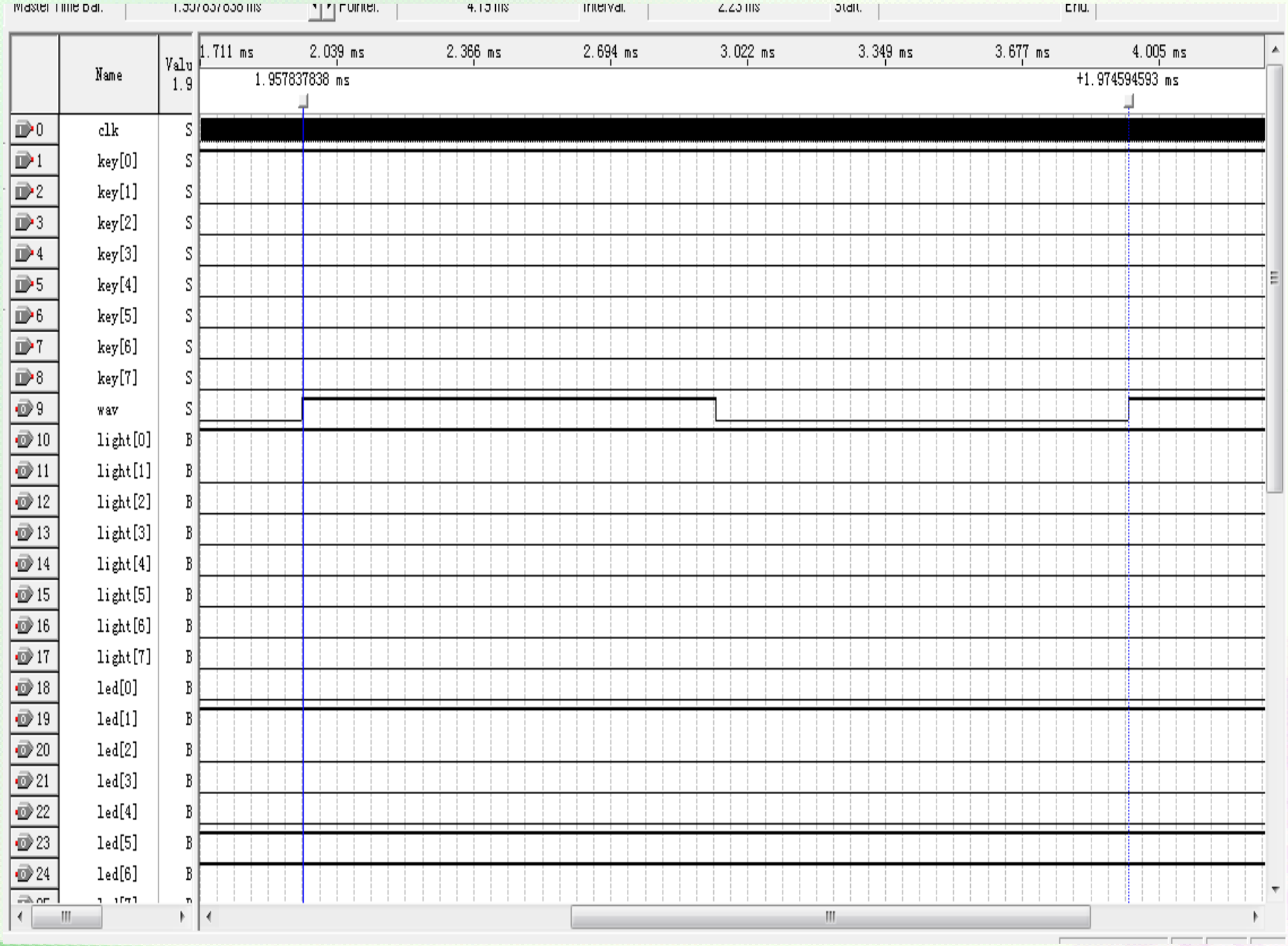
Create a wave we want



Count= 27.3*1000/264/2=51.7=52

CIRCUITS


clk
INPUT
VCC
pin_name
INPUT
VCC
player
clk
key[7..0]
led[7..0]
light[7..0]
fre[31..0]
count[6..0]
inst3
display
data[31..0]
clk
dis1[7..0]
dis2[7..0]
dis3[7..0]
inst2
clock_x1024
input_clk
output_clk
inst
counter
clk
count[6..0]
wav
inst1
BUZZER
1


Master Time Bar:
Pointer:
Interval:
Start:
End:
Name
Valu
1.9
1.711 ms
2.039 ms
2.366 ms
2.694 ms
3.022 ms
3.349 ms
3.677 ms
4.005 ms
1.957837838 ms
+1.974594593 ms
0 clk S
1 key[0] S
2 key[1] S
3 key[2] S
4 key[3] S
5 key[4] S
6 key[5] S
7 key[6] S
8 key[7] S
9 wav S
10 light[0] B
11 light[1] B
12 light[2] B
13 light[3] B
14 light[4] B
15 light[5] B
16 light[6] B
17 light[7] B
18 led[0] B
19 led[1] B
20 led[2] B
21 led[3] B
22 led[4] B
23 led[5] B
24 led[6] B

Simulation Result

Tone	C	D	E	F	G	A	B	C
Time Period (ms)	**3.878**	**3.511**	**3.073**	**2.927**	**2.632**	**2.340**	**2.119**	**1.975**
simulation frequency (Hz)	**258**	**285**	**325**	**342**	**380**	**427**	**472**	**506**
real frequency (Hz)	**264**	**297**	**330**	**352**	**396**	**440**	**495**	**528**

Thank You~!