



μ Project #5 “A Joyful Noise”
Due Tuesday 3/7

HCI-833 Applied Gadgets,
Sensors and Activity
Recognition in HCI
Spring 2017

Purpose

This μ project explores the use of a speaker to produce simple sound output.

What to Build

Build a device which plays three or more tones on a speaker. If you wish to play a short tune, the frequency and period table on the back may be helpful.

Turning the Assignment In and Grading

This assignment is turned in by having one of your classmates certify completion and turn in a “peer demo” sheet signed by them (and fill out the corresponding on-line form on the Blackboard system as well). This project is pass/fail. μ Projects will be accepted without late penalty until Monday April 3rd (after which a 10% per day late penalty will be applied).

Note	Frequency (Hz)	Period (usec)	1/2 period	Note	Frequency (Hz)	Period (usec)	1/2 period	Note	Frequency (Hz)	Period (usec)	1/2 period
C ₀	16.35	61162	30581	C ₃	130.81	7645	3822	C ₆	1046.5	956	478
C [#] ₀ /D ^b ₀	17.32	57737	28868	C [#] ₃ /D ^b ₃	138.59	7216	3608	C [#] ₆ /D ^b ₆	1108.73	902	451
D ₀	18.35	54496	27248	D ₃	146.83	6811	3405	D ₆	1174.66	851	426
D [#] ₀ /E ^b ₀	19.45	51414	25707	D [#] ₃ /E ^b ₃	155.56	6428	3214	D [#] ₆ /E ^b ₆	1244.51	804	402
E ₀	20.6	48544	24272	E ₃	164.81	6068	3034	E ₆	1318.51	758	379
F ₀	21.83	45809	22904	F ₃	174.61	5727	2864	F ₆	1396.91	716	358
F [#] ₀ /G ^b ₀	23.12	43253	21626	F [#] ₃ /G ^b ₃	185	5405	2703	F [#] ₆ /G ^b ₆	1479.98	676	338
G ₀	24.5	40816	20408	G ₃	196	5102	2551	G ₆	1567.98	638	319
G [#] ₀ /A ^b ₀	25.96	38521	19260	G [#] ₃ /A ^b ₃	207.65	4816	2408	G [#] ₆ /A ^b ₆	1661.22	602	301
A ₀	27.5	36364	18182	A ₃	220	4545	2273	A ₆	1760	568	284
A [#] ₀ /B ^b ₀	29.14	34317	17159	A [#] ₃ /B ^b ₃	233.08	4290	2145	A [#] ₆ /B ^b ₆	1864.66	536	268
B ₀	30.87	32394	16197	B ₃	246.94	4050	2025	B ₆	1975.53	506	253
C ₁	32.7	30581	15291	C ₄	261.63	3822	1911	C ₇	2093	478	239
C [#] ₁ /D ^b ₁	34.65	28860	14430	C [#] ₄ /D ^b ₄	277.18	3608	1804	C [#] ₇ /D ^b ₇	2217.46	451	225
D ₁	36.71	27241	13620	D ₄	293.66	3405	1703	D ₇	2349.32	426	213
D [#] ₁ /E ^b ₁	38.89	25714	12857	D [#] ₄ /E ^b ₄	311.13	3214	1607	D [#] ₇ /E ^b ₇	2489.02	402	201
E ₁	41.2	24272	12136	E ₄	329.63	3034	1517	E ₇	2637.02	379	190
F ₁	43.65	22910	11455	F ₄	349.23	2863	1432	F ₇	2793.83	358	179
F [#] ₁ /G ^b ₁	46.25	21622	10811	F [#] ₄ /G ^b ₄	369.99	2703	1351	F [#] ₇ /G ^b ₇	2959.96	338	169
G ₁	49	20408	10204	G ₄	392	2551	1276	G ₇	3135.96	319	159
G [#] ₁ /A ^b ₁	51.91	19264	9632	G [#] ₄ /A ^b ₄	415.3	2408	1204	G [#] ₇ /A ^b ₇	3322.44	301	150
A ₁	55	18182	9091	A ₄	440	2273	1136	A ₇	3520	284	142
A [#] ₁ /B ^b ₁	58.27	17161	8581	A [#] ₄ /B ^b ₄	466.16	2145	1073	A [#] ₇ /B ^b ₇	3729.31	268	134
B ₁	61.74	16197	8098	B ₄	493.88	2025	1012	B ₇	3951.07	253	127
C ₂	65.41	15288	7644	C ₅	523.25	1911	956	C ₈	4186.01	239	119
C [#] ₂ /D ^b ₂	69.3	14430	7215	C [#] ₅ /D ^b ₅	554.37	1804	902	C [#] ₈ /D ^b ₈	4434.92	225	113
D ₂	73.42	13620	6810	D ₅	587.33	1703	851	D ₈	4698.64	213	106
D [#] ₂ /E ^b ₂	77.78	12857	6428	D [#] ₅ /E ^b ₅	622.25	1607	804	D [#] ₈ /E ^b ₈	4978.03	201	100
E ₂	82.41	12134	6067	E ₅	659.26	1517	758				
F ₂	87.31	11453	5727	F ₅	698.46	1432	716				
F [#] ₂ /G ^b ₂	92.5	10811	5405	F [#] ₅ /G ^b ₅	739.99	1351	676				
G ₂	98	10204	5102	G ₅	783.99	1276	638				
G [#] ₂ /A ^b ₂	103.83	9631	4816	G [#] ₅ /A ^b ₅	830.61	1204	602				
A ₂	110	9091	4545	A ₅	880	1136	568				
A [#] ₂ /B ^b ₂	116.54	8581	4290	A [#] ₅ /B ^b ₅	932.33	1073	536				
B ₂	123.47	8099	4050	B ₅	987.77	1012	506				