

Specifications for " Dozenal Conventional Music Notation " (DCMN)

- A. Feature to switch to the new mode (DCMN mode) and back**

- B. Show the appropriate music notation on the screen when switching from Standard to DCMN mode and back**

- C. The DCMN-mode should have following features:**
 - 1. Notation system with 5 lines plus ledger lines**
 - 2. Set notes according to diagram Page 2**
 - 3. Noteheads oval (white piano keys) or x-shaped (black piano keys).
Note length in Page 3, usually as in standard.**
 - 4. Specifying the octaves Midi (duodecimal) and corresponding piano octave, see table in Page 4-6**
 - 5. The use of special clef is not necessary.**
 - 6. The key must be defined by the user. It is advisable to use the appropriate duodecimal numerical designation rather than the current name. Instead of "b" and "#" the x-mark is used as the note head or replacing them as characters at the beginning, which characterize the key. The systematics of conventional notation remains unchanged.**
 - 7. All other structural elements are used as in standard notation.**
 - 8. Use reasonable defaults for Octave and Key and everything else possible.**
 - 9. Entering the notation with the mouse, virtual piano keyboard, real piano keyboard with midi output and computer keyboard.**
 - 10. If more than one 5-line system plus ledger lines is required a structure of 5-lines plus ledger lines will be used for each part of the system in accordance with Page 7
For this task a tool should be developed as the best solution. The notation for piano and part-song requires a solution similar to conventional notation.**
 - 11. The notation should be electronically playable including all occurring structural elements.**

Dozenal Conventional Music Notation (DCMN) or
Hamburg Music Emoji-type Notation (HMEN)

Two octaves are shown and more octaves can be added analogously.

The twelve tones of the chromatic tone row lie on four lines.

The thirteenth tone in the fifth line terminates the octave by repeating the root in double frequency. It also forms the first note of the next higher octave.

Every tone creates its own image by the picture of the note and its position on the line system. The tones are delineated for clarity by the bar line.

The five lines systems can be connected via three ledger lines as illustrated.

Dozenal zero separates the twelve-tone row.

It provides the interface and connection between the systems.

	des		es		ges		as		b			
c	cis	d	dis	e	f	fis	g	gis	a	ais	h	c
1	2	3	4	5	6	7	8	9	A	B	0	1

1	2	3	4	5	6	7	8	9	A	B	0	

Length of notes

0 $\frac{12}{8}$

1 2 3 4 5 6 7 8 9 A B 0

Quarter notes

0

1 2 3 4 5 6 7 8 9 A B 0 1 2 3 4 5 6 7 8 9 A B 0 1

eighth notes sixteenth notes and three quarter note

0

1 2 3 4 5 6

half notes

0

7 8 9 A B 0

0

1 2 3 4

whole note half note

0

5 6 7 8

0

9 A B 0

0

1 2 3

three quarter note six quarter note

Note	MIDI	MIDI HEX	CV in Volt	Frequency Hz	Duodecimal	Comment
C-1	0	0	0	8,176	1	Start Octave 0
C#-1	1	1	0,083	8,662	2	
D-1	2	2	0,167	9,177	3	
D#-1	3	3	0,25	9,723	4	
E-1	4	4	0,333	10,301	5	
F-1	5	5	0,417	10,913	6	
F#-1	6	6	0,5	11,562	7	
G-1	7	7	0,583	12,25	8	
G#-1	8	8	0,667	12,978	9	
A-1	9	9	0,75	13,75	A	
A#-1	10	A	0,833	14,568	B	
H-1	11	B	0,917	15,434	10	Start Octave 1
C0	12	C	1	16,352	11	
C#0	13	D	1,083	17,324	12	
D0	14	E	1,167	18,354	13	
D#0	15	F	1,25	19,445	14	
E0	16	10	1,333	20,602	15	
F0	17	11	1,417	21,827	16	
F#0	18	12	1,5	23,125	17	
G0	19	13	1,583	24,5	18	
G#0	20	14	1,667	25,957	19	
A0	21	15	1,75	27,5	1A	
A#0	22	16	1,833	29,135	1B	
H0	23	17	1,917	30,868	20	Start Octave 2
C1	24	18	2	32,703	21	
C#1	25	19	2,083	34,648	22	
D1	26	1A	2,167	36,708	23	
D#1	27	1B	2,25	38,891	24	
E1	28	1C	2,333	41,203	25	
F1	29	1D	2,417	43,654	26	
F#1	30	1E	2,5	46,249	27	
G1	31	1F	2,583	48,999	28	
G#1	32	20	2,667	51,913	29	
A1	33	21	2,75	55	2A	
A#1	34	22	2,833	58,27	2B	
H1	35	23	2,917	61,735	30	Start Octave 3
C2	36	24	3	65,406	31	
C#2	37	25	3,083	69,296	32	
D2	38	26	3,167	73,416	33	
D#2	39	27	3,25	77,782	34	
E2	40	28	3,333	82,407	35	
F2	41	29	3,417	87,307	36	
F#2	42	2A	3,5	92,499	37	
G2	43	2B	3,583	97,999	38	
G#2	44	2C	3,667	103,826	39	
A2	45	2D	3,75	110	3A	
A#2	46	2E	3,833	116,541	3B	
H2	47	2F	3,917	123,471	40	Start Octave 4
C3	48	30	4	130,813	41	
C#3	49	31	4,083	138,591	42	
D3	50	32	4,167	146,832	43	
D#3	51	33	4,25	155,563	44	
E3	52	34	4,333	164,814	45	

Note	MIDI	MIDI HEX	CV in Volt	Frequency Hz	Duodecimal	Comment
F3	53	35	4,417	174,614	46	
F#3	54	36	4,5	184,997	47	
G3	55	37	4,583	195,998	48	
G#3	56	38	4,667	207,652	49	
A3	57	39	4,75	220	4A	
A#3	58	3A	4,833	233,082	4B	
H3	59	3B	4,917	246,942	50	duodec 40+10
C4	60	3C	5	261,626	51	
C#4	61	3D	5,083	277,183	52	
D4	62	3E	5,167	293,665	53	
D#4	63	3F	5,25	311,127	54	
E4	64	40	5,333	329,628	55	
F4	65	41	5,417	349,228	56	
F#4	66	42	5,5	369,994	57	
G4	67	43	5,583	391,995	58	
G#4	68	44	5,667	415,305	59	
A4	69	45	5,75	440	5A	
A#4	70	46	5,833	466,164	5B	
H4	71	47	5,917	493,883	60	duodec 50+10
C5	72	48	6	523,251	61	
C#5	73	49	6,083	554,365	62	
D5	74	4A	6,167	587,33	63	
D#5	75	4B	6,25	622,254	64	
E5	76	4C	6,333	659,255	65	
F5	77	4D	6,417	698,456	66	
F#5	78	4E	6,5	739,989	67	
G5	79	4F	6,583	783,991	68	
G#5	80	50	6,667	830,609	69	
A5	81	51	6,75	880	6a	
A#5	82	52	6,833	932,328	6B	
H5	83	53	6,917	987,767	70	Start Octave 7
C6	84	54	7	1046,502	71	
C#6	85	55	7,083	1108,731	72	
D6	86	56	7,167	1174,659	73	
D#6	87	57	7,25	1244,508	74	
E6	88	58	7,333	1318,51	75	
F6	89	59	7,417	1396,913	76	
F#6	90	5A	7,5	1479,978	77	
G6	91	5B	7,583	1567,982	78	
G#6	92	5C	7,667	1661,219	79	
A6	93	5D	7,75	1760	7A	
A#6	94	5E	7,833	1864,655	7B	
H6	95	5F	7,917	1975,533	80	Start Octave 8
C7	96	60	8	2093,005	81	
C#7	97	61	8,083	2217,461	82	
D7	98	62	8,167	2349,318	83	
D#7	99	63	8,25	2489,016	84	
E7	100	64	8,333	2637,02	85	
F7	101	65	8,417	2793,826	86	
F#7	102	66	8,5	2959,955	87	
G7	103	67	8,583	3135,963	88	
G#7	104	68	8,667	3322,438	89	
A7	105	69	8,75	3520	8A	

Note	MIDI	MIDI HEX	CV in Volt	Frequency Hz	Duodecimal	Comment
A#7	106	6A	8,833	3729,31	8B	
H7	107	6B	8,917	3951,066	90	Start Octave 9
C8	108	6C	9	4186,009	91	
C#8	109	6D	9,083	4434,922	92	
D8	110	6E	9,167	4698,636	93	
D#8	111	6F	9,25	4978,032	94	
E8	112	70	9,333	5274,041	95	
F8	113	71	9,417	5587,652	96	
F#8	114	72	9,5	5919,911	97	
G8	115	73	9,583	6271,927	98	
G#8	116	74	9,667	6644,875	99	
A8	117	75	9,75	7040	9A	
A#8	118	76	9,833	7458,62	9B	
H8	119	77	9,917	7902,133	A0	Start Octave 10
C9	120	78	10	8372,018	A1	
C#9	121	79	10,083	8869,844	A2	
D9	122	7A	10,167	9397,273	A3	
D#9	123	7B	10,25	9956,063	A4	
E9	124	7C	10,333	10548,082	A5	
F9	125	7D	10,417	11175,303	A6	
F#9	126	7E	10,5	11839,822	A7	
G9	127	7F	10,583	12543,854	A8	

6 c'''

4 c'

2 C,

0 C,,

1 0 B A 9 8 7 6 5 4 3 2 1 0 B A 9 8 7 6 5 4 3 2 1 0 B A 9 8 7 6 5 4 3 2 1

B A 9 8 7 6 5 4 3 2 1

2 1 0 B A 9 8 7 6 5 4 3 2 1 0 B A 9 8 7 6 5 4 3 2 1 0 B A 9 8 7 6 5 4 3 1 0 B A 9 8 7 6 5 4 3

2 1 0 B A

6 5 4 3

Dozenal Conventional Music Notation (DCMN) for the grand piano with 88 decimal and 74 dozenal keys. The ledger line in the middle is presented as solid line for demonstration purposes.