

Simon INIT/GAME

8-6-23

2000	31C220	LXI	SP, 20C2h	
2003	3EFF	MVI	A, FFh	Set up ports
2005	D302	OUT	02h	Lights DDR
2007	3EFO	MVI	A, 0Fh	
2009	D303	OUT	03h	Switch DDR
200B	3E00	MVI	A, 00h	turn off lights
200D	D300	OUT	00h	
200F	D301	OUT	01h	Clear unused sw
2011	04	GAME: INR	B	Random seed ^{bits}
2012	CALL 120	JZ	GAME	
2015	DB01	IN	01h	Buttons
2017	EE0F	XRI	0Fh	Pressed?
2019	CALL 120	JZ	GAME	
201C	DE01	MVI	C, 1	# of steps
201E	CD3020	CALL	PLAY	
2021	CD5020	CALL	REC	
2024	OC	INR	C	Add another step
2025	C21E20	JNZ	L1	
2028	CF	RST	1	You win!!

Simon

PLAY/REC

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PLAY

2030	C5			PUSH	BC	
2031	78			MOV	A,B	Reset RN6 send
2032	32	A4	28	STA	LFSR	
2035	CD	00	28	CALL	NEXT	
2038	CD	20	28	CALL	SHOW	
203B	CD	60	28	CALL	STONE	
203E	00			DCR	C	
203F	C2	35	20	JNZ	LI	
2042	C1			POP	BC	
2043	C9			RET		

REC

2050	C5			PUSH	BC	
2051	78			MOV	A,B	
2052	32	A4	28	STA	LFSR	
2055	CD	30	28	CALL	RDRKEY	but guess
2058	47			MOV	B,A	Save guess
2059	CD	00	28	CALL	NEXT	Get correct color
205C	CD	20	28	CALL	SHOW	Show it
205F	B8			CMP	B	Correct?
2060	C2	6C	20	JNZ	LOSE	
2063	CD	60	28	CALL	STONE	Play correct tone
2066	00			DCR	C	Next step
2067	C2	55	20	JNZ	LI	
206A	C1			POP	BC	
206B	C9			RET		

LOSE

206C	3E	04		MVI	A,4	Play buzz
206E	CD	60	28	CALL	STONE	
2071	C3	00	20	JMP	INIT	Reset

NEXT

2800	C5		PUSH BC	
2801	CD	OF 28	CALL NXBIT	
2804	17		RAL	
2805	47		MOV BA	Stash in B
2806	CD	OF 28	CALL NXBIT	
2809	78		MOV A,B	Restore
280A	17		RAL	
280B	E6	03	ANI 03h	Mask off junk
280D	C1		POP BC	
280E	C9		RET	

NXBIT

280F	3A	A4 28	LDA LFSR	
2812	OF		RRC	
2813	D2	19 28	JNC LI	
2816	EE	0E	XRI 03h	Flip bits 1,2,3
2818	37		STC	Return 1
2819	3A	A4 28 LI	LFSR	
281C	C9		RET	

SHOW

2820	F5			PUSH	AF
2821	C5			PUSH	BC
2822	4F			MOV	CA
2823	37			STC	
2824	3E	00		MVI	A,0
2826	17			L1 RAL	
2827	0D			DCR	C
2828	A2	26	28	JP	L1
282B	D3	00		OUT	00h
282D	C1			POP	BC
282E	F1			POP	AF
282F	C9			RET	

RDKEY

2830	C5			PUSH	BC	
2831	0E	00		MVI	C,0	Loop 256 times
2833	DB	01		L1 IN	01h	Read switches
2835	EE	0F		XRI	0Fh	
2837	C2	49	28	JNZ	L2	Pressed!
283A	11	B5	09	LXI	DE,2485	19.5ms
283D	CD	F1	05	CALL	L	DELAY
2840	0D			DCR	C	
2841	C2	33	28	JNZ	L1	
2844	3E	04		MVI	A,4	Timeout
2846	C3	54	28	JMP	L5	
2849	0E	00		L2 MVI	C,0	Count bits
284B	0F			L3 RRC		
284C	DA	53	28	JC	L4	Found it
284F	0C			INR	C	
2850	C3	4B	28	JMP	L3	
2853	79			L4 MOV	A,C	Return count
2854	C1			L5 POP	BC	
2855	C9			RET		

Simon Sound

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TONE						
2860	F5			PUSH	AF	
2861	C5			PUSH	BC	
2862	21	90	28	LXI	HL, TBL	Look up table x.4
2865	07			RLC		
2866	07			RLC		
2867	85			ADD	L	
2868	6F			MOV	LA	
2869	4E			MOV	C, M	RC=Duration
286A	23			INX	HL	
286B	46			MOV	B, M	
286C	23			INX	HL	
286D	5E			MOV	E, M	DE = 1/2 period
286E	23			INX	HL	
286F	56			MOV	DM	
2870	DB	00		LIN	00h	Toggle speaker
2872	EE	10		XRI	10h	
2874	D3	00		OUT	00h	
2876	D5			PUSH	DE	
2877	CD	F105		CALL	DELAY	
287A	D1			POP	DE	
287B	0B			DCX	BC	
287C	79			MOV	AC	
287D	B0			ORA	B	
287E	C2	70	28	JNZ	LI	
2881	D3	00		OUT	00h	Lights off
2883	11	92	4A	LXI	DE, 19090	150ms
2886	CD	F105		CALL	DELAY	
2889	C1			POP	BC	
288A	F1			POP	AF	
288B	C7			RET		

Simon Dtg

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Tone Info

	<u>Color</u>	<u>Note</u>	<u>Freq</u>	<u>Duration</u>	<u>Half period</u>
2890	Red	A3	220	220	285
2894	Blue	E4	330	330	189
2898	Yellow	G#4	277	277	226
289C	Green	E3	165	165	382
	Buzzor	D2	36	72	1730

TTBL

2890	DC00	1D01
2894	4A01	BD00
2898	1501	E200
289C	A500	7E01
28A0	4800	C206

LFSR

28A4 00

Symbols

INIT	2000
PLAY	2030
REC	2050
NEXT	2800
SHOW	2820
ROKEY	2830
TONE	2860
TTBL	2890
LFSR	28A4