

# KIM

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TARGET (6-column)		Nummer:																																																													
		Blad: 1 van 8																																																													
<p>Auteur: Fer Weber Gebr. Wienerstr. 139 5913 XS Venlo Holland</p> <p>Nadat TARGET 1-column draaiend was gekregen, dacht ik het even uit te breiden tot alle kolommen van het KIM-display.... Nou, mooi mis! Het werd een heel nieuw opgezet programma. Nu moest alles dat op het display komt gemultiplexed worden. Verder moest in het geheugen een "speelveld" (STATE) gemaakt worden waarin alle veranderingen gepleegd worden en waaruit de gegevens voor het display gehaald worden (SEGST). Nu ik toch bezig was werden er maar meteen twee spelletjes ineens gedraaid: zowel een "uit"schiet- als een "aan"schietspelletje. Verder werd er nu voor gezorgd dat pas na het loslaten van een toets het programma wordt vervolgd.</p> <p>Na het starten van het programma komt nu de vraag "a of b" op het display. Men kan nu met toets "A" kiezen voor het spelletje "uit"schieten, of met toets "B" voor het spelletje "aan"schieten. Schietknop is weer toets "3" en schietdoel is ook weer digit 4.</p> <p>Spel A: winst als alle streepjes uit, dus uitschieten van aan-streepjes op digit 4.</p> <p>Spel B: winst als alle streepjes aan, dus aanschieten van uit-streepjes op digit 4. Bv raak schieten op een kolom met al drie streepjes aan levert verlies op.</p> <p>.....</p> <p>z-page use</p> <table><tr><td>0000</td><td>DIGIPT</td><td>=digitpointer</td></tr><tr><td>0001</td><td>SEGMPT</td><td>=segmentpointer</td></tr><tr><td>0002</td><td>STATPT</td><td>=statepointer</td></tr><tr><td>0003</td><td>STATST</td><td>=state store</td></tr><tr><td>0004</td><td>LOOPCO</td><td>=loopcounter</td></tr><tr><td>0005</td><td>REPEST</td><td>=repeat store</td></tr><tr><td>0006</td><td>ONOFST</td><td>=on/off store</td></tr><tr><td>0007</td><td>OFFPTR</td><td>=offpointer</td></tr><tr><td>0008</td><td>MESPT1</td><td>=messagepointer 1</td></tr><tr><td>0009</td><td>MESPT2</td><td></td></tr><tr><td>000A</td><td>MESPT3</td><td></td></tr><tr><td>000B</td><td>MESPT4</td><td></td></tr><tr><td>000E</td><td>PLAYST</td><td>=play a or b store</td></tr><tr><td>000F</td><td>TEMPPL</td><td>=temporary store play a or b</td></tr><tr><td>0010</td><td>SEGST1</td><td>=segmentcode store, digit 1</td></tr><tr><td>0011</td><td>SEGST2</td><td></td></tr><tr><td>0012</td><td>SEGST3</td><td></td></tr><tr><td>0013</td><td>SEGST4</td><td></td></tr><tr><td>0014</td><td>SEGST5</td><td></td></tr><tr><td>0015</td><td>SEGST6</td><td></td></tr></table>				0000	DIGIPT	=digitpointer	0001	SEGMPT	=segmentpointer	0002	STATPT	=statepointer	0003	STATST	=state store	0004	LOOPCO	=loopcounter	0005	REPEST	=repeat store	0006	ONOFST	=on/off store	0007	OFFPTR	=offpointer	0008	MESPT1	=messagepointer 1	0009	MESPT2		000A	MESPT3		000B	MESPT4		000E	PLAYST	=play a or b store	000F	TEMPPL	=temporary store play a or b	0010	SEGST1	=segmentcode store, digit 1	0011	SEGST2		0012	SEGST3		0013	SEGST4		0014	SEGST5		0015	SEGST6	
0000	DIGIPT	=digitpointer																																																													
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TARGET (6-column)			Numer:
			Blad: 2 van 8
<pre> 0016 STATE1 =state of playing field 0017 STATE2 0018 STATE3 0019 STATE4 001A STATE5 001B STATE6 001C STATE7 001D STATE8 001E STATE9 001F STATEA 0020 STATEB 0021 KEYSTO =temporary key store  0030 20 40 1F INKEY JSR KEYIN    this is subroutine that waits 0033 20 6A 1F      JSR GETKEY    till key is released 0036 85 21          STA KEYSTO 0038 C9 15          CMP imm      no key? 003A F0 09          BEQ TORTS 003C 20 6A 1F INKEYC JSR GETKEY 003F C5 21          CMP KEYSTO 0041 F0 F9          BEQ INKEYC 0043 A5 21          LDA KEYSTO 0045 60            TORTS RTS  0046 A2 0B          ISTATE LDX imm    this is subroutine that fills 0048 95 15          FSTATE STA z-p,X  STATE1 to STATEB in page 0 004A CA            DEX              with value in accumulator 004B D0 FB          BNE FSTATE 004D 60            RTS  004E 20 65 00 MESCON JSR PAUSE 0051 20 A0 03      JSR MESSHO 0054 A5 04          LOOPE LDA LOOPCO  get loopcounter 0056 F0 08          BEQ REPEAT 0058 A6 01          LDX SEGMPPT  get segmentpointer 005A 20 6D 03      JSR DIGSTA 005D 4C 54 00      JMP LOOPE 0060 C6 05          REPEAT DEC REPEST 0062 D0 EA          BNE MESCON 0064 60            RTS  0065 A2 80          PAUSE LDX imm 0067 A0 FF          AA    LDY imm 0069 88            A      DEY 006A D0 FD          BNE A 006C CA            DEX 006D D0 F8          BNE AA 006F 60            RTS  0070 A4 02          TOSHOW LDY STATPT  get statepointer 0072 A6 01          LDX SEGMPPT  get segmentpointer </pre>			
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				3 van 8
0074 20 57 03		JSR FILL		
0077 A6 01	SEGSTA	LDX SEGMP	get segmentpointer	
0079 20 63 03		JSR SHOW		
007C 60		RTS		
0080 A9 0F	RSTART	LDA imm	initialize variables z-p	
0082 85 01		STA SEGMP		
0084 A9 1A		LDA imm		
0086 85 03		STA STATST		
0088 A9 F9		LDA imm		
008A 85 07		STA OFFPTR		
008C A9 E1		LDA imm		
008E 85 08		STA MESPT1		
0090 A9 E7		LDA imm		
0092 85 09		STA MESPT2		
0094 A9 ED		LDA imm		
0096 85 0A		STA MESPT3		
0098 A9 F3		LDA imm		
009A 85 0B		STA MESPT4		
009C A9 80		LDA imm		
009E 20 46 00		JSR ISTATE		
00A1 A9 81		LDA imm		
00A3 85 1B		STA STATE6		
00A5 A9 0A		LDA imm		
00A7 85 05		STA REPEST		
00A9 60		RTS		
0200 20 80 00	START	JSR RSTART	start and initialize	
0203 EA EA EA		NOP NOP NOP		
0206 A5 08	PLAYAB	LDA MESPT1	get messagepointer 1	
0208 85 02		STA STATPT	to statepointer	
020A 20 A4 03		JSR MESHOC		
020D 20 30 00	ANYKEY	JSR INKEY		
0210 C9 15		CMP imm	no key?	
0212 D0 12		BNE KEYA		
0214 A5 04	CONTIN	LDA LOOPCO	get loopcounter	
0216 F0 08		BEQ BACK		
0218 A6 01		LDX SEGMP	get segmentpointer	
021A 20 6D 03		JSR DIGSTA		
021D 4C 0D 02		JMP ANYKEY		
0220 20 77 00	BACK	JSR SEGSTA		
0223 4C 0D 02		JMP ANYKEY		
0226 C9 0A	KEYA	CMP imm	key A?	
0228 D0 05		BNE KEYB		
022A 85 0E		STA PLAYST	store play a	
022C 4C 35 02		JMP ONCONT		
022F C9 0B	KEYB	CMP imm	key B?	
0231 D0 E1		BNE CONTIN		
0233 85 0E		STA PLAYST	store play b	
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0235 A5 03	ONCONT	LDA STATST	get state store	
0237 C9 14		CMP imm	done?	
0239 D0 02		BNE DONE		
023B A9 1A		LDA imm	statepointer to start	
023D 85 03	DONE	STA STATST	to state store	
023F 85 02		STA STATPT	and to statepointer	
0241 A9 01		LDA imm	initialize on	
0243 85 06		STA ONOFST	to on/off store	
0245 20 70 00		JSR TOSHOW		
0248 20 30 00	KEY	JSR INKEY		
024B C9 15		CMP imm	no key?	
024D D0 24		BNE GOKEY		
024F A5 04		LDA LOOPCO	get loopcounter	
0251 F0 08		BEQ ONOFF		
0253 A6 01		LDX SEGMPPT	get segmentpointer	
0255 20 6D 03		JSR DIGSTA		
0258 4C 48 02		JMP KEY		
025B A5 06	ONOFF	LDA ONOFST	get on/off	
025D F0 D6		BEQ ONCONT		
025F A5 02		LDA STATPT	get statepointer	
0261 85 03		STA STATST	to state store	
0263 C6 03		DEC STATST	- 1	
0265 A5 07		LDA OFFPTR	get offpointer	
0267 85 02		STA STATPT	to statepointer	
0269 A9 00		LDA imm	initialize off	
026B 85 06		STA ONOFST	to on/off store	
026D 20 A4 03		JSR MESHOC		
0270 4C 48 02		JMP KEY		
0273 C9 13	GOKEY	CMP imm	key GO?	
0275 D0 03		BNE KEY3		
0277 4C 00 02		JMP START		
027A C9 03	KEY3	CMP imm	key 3?	
027C D0 1A		BNE ILLKEY	no, therefore illegal key	
027E A5 13		LDA SEGST4	digit 4 lit?	
0280 D0 43		BNE HIT		
0282 A5 0E	MISS	LDA PLAYST	no, get play	
0284 85 0F		STA TEMPPL	store temporarily	
0286 C9 0A		CMP imm	play A?	
0288 D0 04		BNE MISSC		
028A A9 0B		LDA imm	yes, change to play B	
028C 85 0F		STA TEMPPL	and store temporarily	
028E A4 03	MISSC	LDY STATST	get state store	
0290 A6 01		LDX SEGMPPT	get segmentpointer	
0292 20 57 03		JSR FILL		
0295 4C C9 02		JMP HITCON		
0298 A5 09	ILLKEY	LDA MESPT2	get messagepointer 2	
029A 85 02		STA STATPT	to statepointer	
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			Blad: 5 van 8
029C 20 4E 00		JSR MESCON	
029F A9 0A		LDA imm	restore repeat
02A1 85 05		STA REPEST	
02A3 A5 0E		LDA PLAYST	get playstore
02A5 C9 0A		CMP imm	play A?
02A7 D0 08		BNE ILCONT	
02A9 A9 C9		LDA imm	initialize 3segs
02AB 20 46 00		JSR ISTATE	
02AE 4C 35 02		JMP ONCONT	
02B1 A9 81	ILCONT	LDA imm	initialize 1segs
02B3 20 46 00		JSR ISTATE	
02B6 A9 80		LDA imm	initialize 0segs (blank)
02B8 85 17		STA STATE2	fill even states
02BA 85 19		STA STATE4	
02BC 85 1B		STA STATE6	
02BE 85 1D		STA STATE8	
02C0 85 1F		STA STATEA	
02C2 4C 35 02		JMP ONCONT	
02C5 A5 0E	HIT	LDA PLAYST	get play
02C7 85 0F		STA TEMPPL	store temporarily
02C9 A5 0F	HITCON	LDA TEMPPL	
02CB C9 0A		CMP imm	play A?
02CD D0 36		BNE B3SEGS	
02CF A5 13		LDA SEGST4	yes, what's in digit 4?
02D1 C9 80		CMP imm	0segs (blank)?
02D3 F0 10		BEQ MAKE1S	
02D5 C9 81		CMP imm	1segs?
02D7 D0 08		BNE A2SEGS	
02D9 A0 80		LDY imm	yes, load 0segs (blank)
02DB 20 B7 03		JSR STATCH	and change playing field
02DE 4C F5 02		JMP ALLBLA	check if all blanks
02E1 C9 C1	A2SEGS	CMP imm	2segs?
02E3 D0 08		BNE A3SEGS	
02E5 A0 81	MAKE1S	LDY imm	yes, load 1segs
02E7 20 B7 03		JSR STATCH	and change playing field
02EA 4C 35 02		JMP ONCONT	
02ED A0 C1	A3SEGS	LDY imm	load 3segs
02EF 20 B7 03		JSR STATCH	and change playing field
02F2 4C 35 02		JMP ONCONT	
02F5 A2 15	ALLBLA	LDX imm	load state 1 -1
02F7 E8	LOOPA	INX	
02F8 E0 21		CPX imm	all states done?
02FA F0 45		BEQ WIN	
02FC B5 00		LDA z-p,X	no, get state
02FE C9 80		CMP imm	0segs (blank)?
0300 F0 F5		BEQ LOOPA	
0302 4C 35 02		JMP ONCONT	
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0305 A5 13	B3SEGS	LDA SEGST4	what's in digit 4?	
0307 C9 C9		CMP imm	3segs?	
0309 F0 40		BEQ LOSE		
030B C9 C1		CMP imm	2segs?	
030D D0 0E		BNE B1SEGS		
030F A0 C9		LDY imm	load 3segs	
0311 20 B7 03		JSR STATCH	and change playing field	
0314 A5 0E		LDA PLAYST	get play	
0316 C9 0A		CMP imm	play A?	
0318 D0 17		BNE ALL3S	check if all segments lit	
031A 4C 35 02		JMP ONCONT		
031D C9 81	B1SEGS	CMP imm	1segs?	
031F D0 08		BNE B0SEGS		
0321 A0 C1		LDY imm	load 2segs	
0323 20 B7 03		JSR STATCH	and change playing field	
0326 4C 35 02		JMP ONCONT		
0329 A0 81	B0SEGS	LDY imm	load 1segs	
032B 20 B7 03		JSR STATCH	and change playing field	
032E 4C 35 02		JMP ONCONT		
0331 A2 15	ALL3S	LDX imm	load state 1 -1	
0333 E8	LOOPB	INX		
0334 E0 21		CPX imm	all states done?	
0336 F0 09		BEQ WIN		
0338 B5 00		LDA z-p,X	no, get next state	
033A C9 C9		CMP imm	3segs?	
033C F0 F5		BEQ LOOPB		
033E 4C 35 02		JMP ONCONT		
0341 A5 0A	WIN	LDA MESPT3	get messagepointer 3	
0343 85 02		STA STATPT	to statepointer	
0345 20 4E 00		JSR MESCON		
0348 4C 00 02		JMP START		
034B A5 0B	LOSE	LDA MESPT4	get messagepointer 4	
034D 85 02		STA STATPT	to statepointer	
034F 20 4E 00		JSR MESCON		
0352 4C 00 02		JMP START		
0357 C8	FILL	INX	statepointer +1	
0358 B9 00 00		LDA abs,Y	get segmentcode	
035B E8		INX	segmentpointer +1	
035C 95 00		STA z-p,X	store segmentcode	
035E E0 15		CPX imm	done?	
0360 D0 F5		BNE FILL		
0362 60		RTS		
0363 A9 30	SHOW	LDA imm	initialize loopcounter	
0365 85 04		STA LOOPCO	sets <u>speed</u>	
0367 A5 06		LDA ONOFST	get on/off	
0369 D0 02		BNE DIGSTA		
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TARGET (6-column)				Nummer:
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				7 van 8
036B 46 04		LSR LOOPCO	make offperiod half onperiod	
036D A9 07	DIGSTA	LDA imm	initialize digitpointer	
036F 85 00		STA DIGIPT		
0371 E6 00	DIGCON	INC DIGIPT	digitpointer +2	
0373 E6 00		INC DIGIPT		
0375 A5 00		LDA DIGIPT	get digitpointer	
0377 C9 15		CMP imm	digit "7"?	
0379 F0 1D		BEQ LOOPCN		
037B A9 7F	LITEUP	LDA imm		
037D 8D 41 17		STA abs	padd =1	
0380 A5 00		LDA DIGIPT	get digitpointer	
0382 8D 42 17		STA abs	digit on	
0385 E8		INX	segmentpointer +1	
0386 B5 00		LDA z-p,X	get segmentcode	
0388 8D 40 17		STA abs	segments on	
038B A0 30		LDY imm	and wait	
038D 88	WAIT	DEY		
038E D0 FD		BNE WAIT		
0390 A9 00		LDA imm	segments off	
0392 8D 40 17		STA abs		
0395 4C 71 03		JMP DIGCON		
0398 A9 00	LOOPCN	LDA imm	digits off	
039A 8D 42 17		STA abs		
039D C6 04		DEC LOOPCO	loopcounter -1	
039F 60		RTS		
03A0 A9 01	MESSHO	LDA imm	initialize on	
03A2 85 06		STA ONOFST	to on/off store	
03A4 A4 02	MESHOC	LDY STATPT	get statepointer	
03A6 A6 01		LDX SEGMPY	get segmentpointer	
03A8 C8	MESFIL	INY	statepointer +1	
03A9 B9 00 03		LDA abs,Y	get segmentcode	
03AC E8		INX	segmentpointer +1	
03AD 95 00		STA z-p,X	store segmentcode	
03AF E0 15		CPX imm	done?	
03B1 D0 F5		BNE MESFIL		
03B3 20 77 00		JSR SEGSTA		
03B6 60		RTS		
03B7 A6 03	STATCH	LDX STATST	get state	
03B9 E8 E8		INX INX	statepointer +4	
03BB E8 E8		INX INX		
03BD EA		NOP		
03BE 94 00		STY z-p,X	load xsegs in state	
03C0 E0 1E		CPX imm		
03C2 F0 15		BEQ TODEC		
03C4 E0 1D		CPX imm		
03C6 F0 11		BEQ TODEC		
03C8 E0 1C		CPX imm		
03CA F0 0D		BEQ TODEC		
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TARGET (6-column)		Nummer:	
		Blad: 8 van 8	
<pre>030C E0 1B      CPX imm 03CE F0 11      BEQ RETURN 03D0 E8 E8      INX INX      statepointer +6 03D2 E8 E8      INX INX 03D4 E8 E8      INX INX 03D6 94 00      STY z-p,X    load xsegs in state 03D8 60          RETURN RTS 03D9 CA CA      TODEC DEX DEX  statepointer -6 03DB CA CA      DEX DEX 03DD CA CA      DEX DEX 03DF 94 00      STY z-p,X    load xsegs in state 03E1 60          RTS  messages in Dutch: 03E2 F7 80 BF F1 80 FC      message 1 03E8 F1 BF F9 86 80 80      message 2 03EE 80 F6 BF F9 D0 F7      message 3 03F4 ED BE F1 F1 86 F9      message 4 03FA 00 00 00 00 00 00      off  alternative messages in English: 03E2 F7 80 BF D0 80 FC      message 1 03E8 F1 BF BE B8 80 80      message 2 03EE F6 BE D0 D0 F7 EE      message 3 03F4 FC BE ED F8 F9 DE      message 4 03FA 00 00 00 00 00 00      off</pre>			
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