

00363 PROGRAM DESCRIPTION I

Program Title The Step Game
Contributor's Name George G. Sandoval, Jr.
Address 14 G. de Jesus, Caloocan
City Metro Manila State/Country Philippines Zip Code 3108

Program Description, Equations, Variables You and the HP start at extreme opposite ends of the display, you at the right end (at position 10), indicated by your symbol (\neq , the "not equals" sign), and the HP on the left, at position 1, indicated by his symbol ($>$, the "greater than" sign). Moves are 1 to 2 steps forward, or 1 step backward. A forward move is one away from your end of the display; a backward move is one going towards your end of the display. The object of the game is to force an opponent back to his end of the display in such a way that he cannot move anymore. A player may not move forward if there is only one space or position separating him and his opponent; he may not move backward if there is no space behind him to move to. You make the first move, and you and the HP alternate. Remember, a player who cannot move loses the game.

Necessary Accessories Card reader, One memory module

Operating Limits and Warnings If you wish to move to position 10, you must key in 10 and not 0, although the display displays position 10 as a 0.

Reference(s) _____

The program has been verified only with respect to the numerical example given in Program Description II. User accepts and uses this program material AT HIS OWN RISK, in reliance solely upon his own judgment of the program material and without reliance upon any representation or description concerning the program material.

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00363C PROGRAM DESCRIPTION II

Sample Problem (Sketch if Desired)

1. Sample problem in which you lose.

Note: $>23456789\neq$ is the initial display configuration
 $1234567>9\neq$ means you lose the game.
 $>2\neq4567890$ means HP loses the game.

2. Sample problem in which you win. (Like in some things in life, it is possible for you to win at this game.)

SOLUTION:

Input	Function	Display	Comments
1	(USER)		
	(XEQ) SIZE 028		
Data card side	(//) (A) and 2	DATA CRD PLS.	Data card prompt
8	{ B }	>23456789\neq	Initial display configuration.
	{ C }	>234567\neq90	
		12>4567\neq90	
6	{ B }	12>45\neq7890	
	{ C }	123>5\neq7890	You have to retreat
7	{ B }	123>56\neq890	
	{ C }	1234>6\neq890	HP gives chase.
8	{ B }	1234>67\neq90	
	{ C }	12345>7\neq90	
9	{ B }	12345>78\neq0	
	{ C }	123456>8\neq0	
10	{ B }	123456>89\neq	You're trapped
	{ C }	1234567>9\neq	You lose.
2	(A)	>23456789\neq	
9	{ B }	>2345678\neq0	
	{ C }	12>45678\neq0	
8	{ B }	12>4567\neq90	
	{ C }	>34567\neq90	HP is on the run!
7	{ B }	12>3456\neq890	
	{ C }	>23456\neq890	HP appears cornered!
6	{ B }	>2345\neq7890	
	{ C }	1>345\neq7890	Looks like a fight.
4	{ B }	1>3\neq567890	Last nail in the coffin.
	{ C }	>2\neq4567890	
3	{ B }	>2\neq4567890	Man beats machine again.

00363C USER INSTRUCTIONS

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SIZE:
(HP-41C) Ø28

STEP	INSTRUCTIONS	INPUT	FUNCTION	DISPLAY
1	Enter the program, check status and set USER mode			
2	Initialize		(//) (A)	DATA CRD PLS.
3	Enter data card sides 1 and 2			
4	Initial display configuration "/" is your symbol located at position 1Ø > is HP's symbol at position 1			>23456789/
5	Your move Press the number (#) of the position you wish to move to.* Display changes to indicate your new position	#	(B)	New position
6	HP's move Press the key to indicate HP's new position		(C)	New position
7	Alternate moves (steps 5 and 6) until you or HP cannot move. >2/456789Ø means HP has lost 1234567>9/ means you have lost			
8	For a new game, press (A) and go to step 4.			
	*You may not move forward if there is only 1 space separating you and HP, eg 123>5/789Ø and it is your turn. Posi- tion 1Ø is indicated by a Ø in display but you must key in 1Ø as your # if you wish to move here.			

00363C PROGRAM LISTING

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STEP/ LINE	KEY ENTRY	KEY CODE (67/87 only)	COMMENTS	STEP/ LINE	KEY ENTRY	KEY CODE (67/87 only)	COMMENTS
01	*LBL "STPGAM"			51	GTO 04		
	*LBL 01		Initialize.		*LBL 05		
	004.027				CF 01		
	"DATA CRD PLS."				RCL 02		
	AVIEW				XEQ D		
	RDTAX				FC? 01		
	*LBL A		New game		GTO 11		
	FIX 0				-1		
	0				GTO 01		
10	STO 01			60	*LBL 04		
	10		You start at Position 10		CF 01		
	STO 02				RCL 02		
	1				6		
	STO 03				X<Y		
	*LBL 07				X=Y?		
	1				GTO 07		
	*LBL 01				XEQ D		
	RCL 01				FS? 01		
	+				GTO 11		
20	STO 01			70	-1		
	CF 01				GTO 01		
	GTO 10				*LBL D		
	*LBL B		Your move		2		
	STO 02				7		
	GTO 10				INT		
	*LBL C				LAST X		
	1		HP's move		X?Y?		
	ST- 03				SF 01		
	RCL 03				RTN		
30	X=0?		Test if this is	80	*LBL 11		
			HP's first move		2		
	GTO 03		If no, go to strategy; if yes, move		GTO 01		
	2		fwd. 2 steps		*LBL 10		
	GTO 01				*LBL "DISPLAY"		Display genera-
	*LBL 03				CLA		tion routine.
	RCL 02				5		
	RCL 01				RCL 02		
	-				X>Y?		
	4				GTO "Y>5K<=5"		
	X<=Y?			90	3		
40	GTO 06		Test if dist. bet.		RCL 01		Display generation
	X<Y		2 players is w/in		X=Y?		for Your Position
	XEQ D		4 positions; if yes		GTO "X=3 Y=5"		Less than or Equal
	1		test if dist. is		RCL 01		to 5 and HP less
	FC? 01		odd or even, if no,		1		than or equal to
	CHS		go to strategy LBL 06		-		
	GTO 01		If odd, Hp moves 1		2		
	*LBL 06		step back; if even,		*		
	RCL 03		move 1 step fwd.				
	XEQ D						
50	FS? 01		Test if HP's turn is,				
			odd or even; if odd,				
			go to strategy LBL 04,				
			if even, strategy LBL 05				

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STEP	KEY ENTRY	KEY CODE (67/97 only)	COMMENTS	STEP/ LINE	KEY ENTRY	KEY CODE (67/97 only)	COMMENTS
101	8			51			
	+						
	ARCL IND X						
	ARCL 27						
	PROMPT						
	*LBL "Y>5X<=5"						
	5						
	RCL 01						
	X>Y?						
110	GTO "X>5 Y>5"			60			
	*LBL "BLOCK"		Display generation for Your Position				
	*LBL "1<=X<=5"		between 6 and 10				
	*LBL "6<=Y<=0"		and HP position bet- ween 1 and 5				
	RCL 01						
	5						
	+						
	ARCL IND X						
	RCL 02						
	10						
120	+			70			
	ARCL IND X						
	PROMPT						
	*LBL "X>5 Y>5"		Display generation for Your Position				
	RCL 01		Greater than 5 and				
	8		HP Position Greater				
	X=Y?		Than 5				
	GTO "X=8 Y=0"						
	ARCL 04						
	RCL 01						
130	2			80			
	*						
	RCL 02						
	+						
	1						
	+						
	ARCL IND X						
	PROMPT						
	*LBL "X=3 Y=5"		Display generation				
	ARCL 05		when Your Position is				
140	ARCL 27		5 and HP's is 3.	90			
	PROMPT						
	*LBL "X=8 Y=0"		Display generation				
	ARCL 04		in your losing position				
	ARCL 26						
	PROMPT						
			" " is an imbedded blank in labels	00			
50							

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REGISTERS, STATUS, FLAGS, ASSIGNMENTS

THE STEP GAME

USERS' LIBRARY
PROGRAM NUMBER: 00363C

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PROGRAM REGISTERS NEEDED: 49

ROW 1 (1 - 2)



ROW 2 (3 - 4)



ROW 3 (4 - 7)



ROW 4 (8 - 18)



ROW 5 (19 - 26)



ROW 6 (27 - 36)



ROW 7 (37 - 45)



ROW 8 (46 - 53)



ROW 9 (53 - 59)



ROW 10 (60 - 68)



ROW 11 (68 - 76)



ROW 12 (77 - 84)



ROW 13 (84 - 89)



ROW 14 (89 - 93)



ROW 15 (93 - 100)



ROW 16 (101 - 106)



ROW 17 (106 - 110)



ROW 18 (110 - 111)



ROW 19 (112 - 113)



ROW 20 (113 - 117)



ROW 21 (117 - 123)



ROW 22 (123 - 127)



ROW 23 (127 - 134)



ROW 24 (135 - 138)



ROW 25 (138 - 142)



ROW 26 (142 - 146)

