SARGON A COMPUTER CHESS PROGRAM

User's Guide to SARGON

1. To begin execution:

   The Sargon disk or DDP is self-booting. Once execution has begun, SARGON will ask you a series of questions:

   "Welcome to Chess. Care for a Game?"

To play a game of chess respond with "y." An answer of "n" will get you to the routine that allows you to set up a boards position. (See Item 5.)

"Would you like to play white (w) or black (b)?"

The player selects white by entering "w" or black by "b." Any other key defaults to black. <u>White always moves first</u>.

"Select look ahead (1-6),"

This allows the player to select the depth of search. For example, if you select 3 ply, SARGON will consider:

1. All of his possible moves.
2. All of your responses to those moves.
3. All of his possible replies to your responses.

Following is chart showing estimated time required for Sargon to respond to your move at different ply levels:

PLY LEVEL	ESTIMATED TIME TO RESPOND IN HH:MM:SS
1	00:00:10 – 00:00:30
2	00:00:30 – 00:03:00
3	00:06:00 – 00:10:00
4	00:15:00 – 00:25:00
5	03:30:00 - 04:00:00
6	04:00:00+

At this point, the board display will appear on the screen. If you choose white, SARGON will be waiting for your move entry. If you choose black, SARGON will make its move on the board, print it in the move list, and then wait for your move entry.

2. To enter a move:

Moves must be entered in algebraic chess notation. This means you most tell SARGON the file and rank coordinates of the squares you are moving from and to. The files are lettered a-h and the ranks are numbered 1-8.

So, the coordinates of the board are:

	a	b	c	d	e	f	g	h	
8	a8	b8	c8	d8	e8	f8	g8	h8	8
7	a7	b7	c7	d7	e7	f7	g7	h7	7
6	a6	b6	c6	d6	e6	f6	g6	h6	6
5	a5	b5	c5	d5	e5	f5	g5	h5	5
4	a4	b4	c4	d4	e4	f4	g4	h4	4
3	a3	b3	c3	d3	e3	f3	g3	h3	3
2	a2	b2	c2	d2	e2	f2	g2	h2	2
1	a1	b1	c1	d1	e1	f1	g1	h1	1
	a	b	c	d	e	f	g	h	

The move itself is entered as ff-tt so to play the king's pawn up two squares you would enter:

"e2-e4"

If SARGON responded with the same move, it would print:

"e7-e5"

NOTE: Just below the board is an indicator to show you when Sargon is thinking about it's next move.

Castling

Just enter the king's move. The rook will be moved automatically. For example, if you are white and you wish to castle king's side, enter:

"e1-g1"

You will see both your king and rook move. When SARGON castles, he lists it as 0-0 or 0-0-0 as in normal chess notation.

To Capture En Passant

If you wish to capture one of SARGON's pawns using the en passant privilege, enter your pawn's move. After your pawn move is displayed, SARGON's pawn will blink and then vanish. When SARGON captures en passant, his move is displayed on the graphics board in the same way. SARGON prints it in the move list as PxPep.

3. To play another game after checkmate:

If either your or SARGON is checkmated, and you wish to play again just hit any key. The screen will blank out and SARGON will ask:

"Care for Another Came?"

Replies to this question are just like those to the original "Care for a Game?"

4. To resign a hopeless game or take back a move:

If you decide your position is hopeless, or you wish to change a move entered in error, first wait until it is your turn to move. Then enter "control-R." You will immediately get the "Care for Another Game?" question. If you want to start over, type "y," but if you want to correct the board display, type "n." You will then get the routine that allows you to setup a board position.

5. To setup or correct a board position: If you typed "n". a "Care for a Game" question, SARGON will now ask:

"Would you like to analyze a position?"

If you answer "n" to this one, you will be out of SARGON entirely and back in the computer's monitor state. An answer of "y" will display the board just as you left it. The lower left-hand corner will blink. That, your signal that you can change the contents of that square, using one of the analysis commands.

Summary of Analysis Commands

NOTE: Sargon does not do a lot of error checking in this portion of the code. You can enter invalid positions or number of pieces and the program will happily accept it. This can have unforeseen effects on the state of the game. If your computer should lock up, resetting should bring you back to the game.

<M>
The 'M' key leaves the contents of the square unchanged, moves to and blinks the next square. If you are already at the upper right-hand corner, it wraps around to the lower left-hand corner and blinks that square.

<N>
The 'N' key leaves the contents of the square unchanged, moves to and blinks the square in the other direction. It is the opposite of a <M>, so you can go either direction.

<S>
The 'S' key leaves the contents of the square unchanged, moves to and blinks the square above the current square. If you are already at the top row, it wraps around to the bottom row and blinks that square.

<X>
The 'X' key leaves the contents of the square unchanged, moves to and blinks the square below the current square. It is the opposite of a <S>, so you can go either direction.

0
An entry of 0, or of the space bar, or any key not listed in these commands will empty the square.

"Enter a Piece"
To enter a piece, type in piece-code, color-code, moved-code.

Piece-code is a letter indicating the desired piece (upper or lower case):

K -- King
Q -- Queen
R -- Rook
B -- Bishop
N -- Knight
P -- Pawn

Color-code is a letter indicating the side the piece belongs to (also upper or lower case):

w -- white
b -- black

Moved-code is a number indicating whether the Piece has moved or not:

0 - Piece has never moved
1 - piece has moved

Some examples (you must enter the comma delimiter in between the values):

To enter a black pawn on its original square type:

"P,b,0"

A white knight in the middle of the board would be:

"N,w,1"

A black king on its original square which has however moved:

"K,b,1"

Escape
The escape key will terminate the blinking cycle. SARGON will ask:

"Is this right?"

An answer of "n" will go back to setting up the board. If you say "y" then SARGON will ask for information it needs to resume play from this point. The color choice and search depth questions are the same as in Section 1. In addition, SARGON must be given the answer to:

"Whose move is it?"

6. To terminate execution:

The way out of the SARGON program depend, on whether you're at the end of a game, in the middle of a game, or setting up a board position.

At the end of a game:

1. Depress any key.
2. SARGON responds with: "Care for Another Game?"
3. Answer with "n."
4. SARGON responds with: "Would you like to analyze a position?"
5. Answer with "n" and you're out.

In the middle of a game:

6. Wait until it's your turn.
7. Enter "Control-R"
8. SARGON responds with: "Care for Another Game?"
9. Follow 3-5 as for the end of a game.

Setting up a board:

10. Depress the escape key.
11. SARGON answers: "Is this right?"
12. Respond with answering four questions at once.
13. Follow 2-4 as for the middle of a game.

Conversion

SARGON was originally assembled using the TDL Macro Assembler, which does not use the ZILOG mnemonics. The ADAM conversation was assembled with TNIASM and edited using NOTEPAD and HxD Hex Editor. Primary reference material was an on-line source found here:

http://web.archive.org/web/20070614114334/http://madscientistroom.org/chm/Sargon.html

Also a ROM of Sargon for the Exidy computer was disassembled and cross referenced to fill in missing or incorrect code. There is an on-line emulator running this ROM here:

https://archive.org/details/Sargon_Chess_Sorcerer_1981

If you run the emulated Sargon you will notice the 'Analysis' portion is very buggy. I don't believe it actually works. These bugs have been corrected in this ADAM conversion to make 'Analysis' somewhat useful.

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