



DRAGON 32

DATA LIMITED

CYRUS CHESS PROGRAM

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1 INTRODUCTION

Cyrus is a strong chess program which won the European Microcomputer Chess Championship in 1981, with a score of 5 out of 5. In its present version, it includes many new operating features which we hope will make it especially enjoyable for you to use.

Plug the cartridge into the right-hand side of the computer, and switch on. If you want the program's audio signals to operate, make sure that the TV set's volume control is turned up.

On first switching on, the screen will display:

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2 MESSAGE DISPLAY AND BOARD DISPLAY

After a few seconds, a chessboard will appear on the screen (with squares and pieces in buff/yellow and magenta/purple). The chess pieces will be in their starting positions.

Inside the square at the bottom left-hand corner of the board, you will see a smaller square where the colours flash alternately blue and yellow. This is the **cursor**. You use it for making your moves. By means of the direction keys \uparrow , \downarrow , \leftarrow and \rightarrow you can move it in any direction, to any square of the board as required.

If you now press the space bar, you will see the program's message display (with black lettering on a green background). During the game, this display will include a record of the last few moves made (up to five on each side), as well as a list of the commands at your disposal at any moment — and other information as appropriate. (At any time, pressing the space bar switches from message display to board display or vice versa.)

3 STARTING A GAME

Before starting, you may adjust the program's level of play if you wish. See Section 7.

If you are playing White against Cyrus, make your first move as follows:

- a) With the board display on the screen, bring the cursor onto the square occupied by the piece you wish to move.
- b) Press ENTER. The computer 'beeps' in acknowledgement. The cursor is now steady, not flashing.

When you next use a direction key, this static cursor remains where you have placed it, while a second, flashing cursor appears and responds to your command.

c) Move this flashing cursor onto the square that you want your piece to move to.

d) Press ENTER. The piece is now moved for you on the board and Cyrus starts computing its reply.

If you try to enter an illegal move, you will merely hear a low-pitched 'beep'. Transfer the cursor to the correct square, and complete a legal move. (Also see Section 8, on taking back moves.)

While Cyrus is thinking, the message display records THINKING followed by a number. This tells you how many 'ply' (one move for one player) ahead the computer is looking. (If it is thinking more than 9 ply ahead, it may display ';', ':' or '>').

When Cyrus has finished thinking, it will beep and make a move on the display board. (The chess piece demonstrates its move, then goes back, then completes its move.) The message display now shows: YOUR MOVE. Your further moves are made just like the first.

If you want to play Black, begin by pressing M. Cyrus will then make the first move with the white pieces.

4 SPECIAL MOVES

Captures

A capture is handled just like any other move. Move your piece in the normal way, and the enemy piece automatically disappears from the board. This also applies to a pawn capture **en passant**.

Castling

If you wish to castle, simply make the king's move in the usual manner. The computer will then make the rook's move for you.

Pawn Promotion

If you have played a pawn to its promotion square, you will see this pawn move repeatedly demonstrated on the screen until you select the piece to promote to. For a rook, bishop or knight, press R, B or N; any other key selects a queen.

When Cyrus promotes a pawn, it always makes it a queen.

5 RESULT OF THE GAME

If either player is checkmated, the board display shows his king flashing on and off. A characteristic signal is heard. The message display shows: CHECKMATE.

If both players move the same pieces backwards and forwards over the same squares three consecutive times, the message display

shows: DRAW. The same message appears if no pawn move has been made, and no piece or pawn captured, over the space of 50 consecutive moves by both sides (100 'ply'). Similarly, STALEMATE is indicated if appropriate. In any of these cases, the king of the player whose move it would be next is seen flashing on the board display.

In all these cases you can now press T to take back, or S to set-up position. Any other key starts a new game.

6 NEW GAME

If Cyrus is announcing checkmate or a draw (as above), you can proceed to a new game by pressing any key except T or S.

If you want to abandon a game in progress, press S (when it is your turn to move), followed by BREAK.

In either case, the board display will revert to the starting position, and play can recommence. Alternatively, if at this point you repeatedly press F, the computer will demonstrate all the moves of the previous game — provided that during the game you did not modify the position as in Section 12. If you like, you can carry on play against the computer from any position that arises during this replay. Just make a move for the side whose turn it is, or press M to make Cyrus move.

7 LEVEL

Cyrus has nine different levels of playing strength. Levels two and six are particularly recommended for their playing strength in relation to time taken thinking.

The following table gives the approximate average time it takes over a move on each level (note that the time over any one move may differ significantly from the average):

1	1 second
2	10 seconds
3	20 seconds
4	30 seconds
5	1 minute
6	2 minutes
7	6 minutes
8	12 minutes
9	no limit

On level nine, Cyrus will carry on analyzing the position for a very long time; it will not actually play a move unless:

- a) you press the M key, or
- b) it finds a forced mate, or
- c) it completes an exhaustive analysis as far as 11 ply ahead (this could take weeks!).

For the first few moves of a game Cyrus is likely to play fast on any level, since it has 'book knowledge' of many standard openings.

The current level is always indicated on the message display. When you first switch on, the program is set for level two. You can change the level any time when it is your turn to move, by pressing the L key once or repeatedly. Each press moves to the next higher level or, on level nine, back to level one.

The program remains on the same level until you change it or switch off. You can change the level as many times as you like during the course of a game.

On any level, when Cyrus is thinking, the M key may be pressed to make the program move immediately. It will then make the move which is best according to its analysis up to that point.

8 TAKING BACK MOVES

If you have marked one of your pieces with the 'static' cursor but then decide not to move it after all, simply transfer the flashing cursor to another piece, and press ENTER. You can now complete a move with this newly controlled piece in the normal way.

You may also take back a move already completed. First, wait for Cyrus's reply (press M if you want to speed this up). Then press T. The computer's last move is retracted on the board display and deleted from the game record on the message display. Press T again, and you own last move is retracted. You may now make a different move in place of it. Alternatively, you may want to repeat the procedure, to take back more moves. If you wish, by repeatedly pressing the T key, you can go right back to the start of the game.

Any move or moves that you have just taken back can be restored by pressing the F key, once or repeatedly as required.

9 CHANGING SIDES

If you press M instead of entering a move when it is your turn, Cyrus will move for the side you have been playing, and will expect subsequent moves for the other side to be made by you. You can change sides like this as often as you like. Notice that taking back an odd number of ply (half-moves) (see Section 8) has the effect of changing sides.

When you first view the board display after switching on, White is playing 'up' the board. If you prefer Black to be playing 'up', press the I key, and the board will be inverted. You can do this whenever it is your turn to move. A further press of the same key switches the board back again.

10 AUTOMATIC PLAY

To make the computer play against itself, press A. If you later press M, Cyrus will make the next move for the side whose turn it is, then expect you to take over the other side.

When one game ends, a new game starts automatically after a short delay.

11 HINT

If you press H when it is your move, Cyrus will demonstrate a move with one of your pieces (and then put your piece back). The program is showing you what it thinks is your best move.

If H is pressed while Cyrus is computing, the program will similarly demonstrate a move for its own side — the move which is best according to its analysis so far.

Sometimes there will be no 'hint' move available, e.g. at the start of a game, when Cyrus is playing from 'opening theory'.

12 SETTING UP POSITIONS

You will need to set up a special position on the board whenever, for example, you want the computer to solve a chess problem.

The first thing to do is press S. This puts the program into 'set-up' mode. SET UP POSITION appears on the message display, and you are shown a new list of commands. On the board display, the cursor now has a different appearance: the flashing blue/green colours now embrace an entire square of the chessboard.

Set-up mode allows you to remove any pieces from their squares or to insert pieces wherever you want them. Before starting to set a position up, you may find it convenient to clear the whole board.

If the word WHITE is featured on the message display, the next piece or pieces you insert will be of this colour. To switch from WHITE to BLACK or back again, press X.

To clear a piece from a square: bring the cursor onto this square, and press 0 (zero).

To clear the entire board: press CLEAR.

To place a piece on the board: move the cursor to the desired square, and press K, Q, R, B, N or P as appropriate.

When you have set your position up, make sure the computer knows which side you want to move next. If the message display shows WHITE and you want Black to move (or vice versa), press X.

Then press S. The program has now left set-up mode, and play may continue. (Enter a move, or press M or A, as required.)

If the position you have set up is illegal (if a pawn is on the back rank, for example, or the player who moves next is giving check), then when you press S to leave set-up mode the message ILLEGAL appears on the message screen. Alter the position to make it legal, then press S.

When you have left set-up mode, the next move cannot be a pawn capture **en passant**. To construct a position where the computer has an **en passant** capture available, set up the immediately preceding position, leave set-up mode, and make the move that allows the capture.

If a king or rook has been placed on the board during set-up, the computer will not subsequently permit castling with this piece. You can construct a position where castling is a possibility by first going back to the starting position (S, BREAK). Then press S, and, while leaving the king(s) and rook(s) alone, set up the rest of the pieces where you want them.

The next move after you leave set-up mode is numbered 10 on the message display. If you later retract moves as in Section eight, you can go back only as far as the position you set up.

13 CHESS PROBLEMS

Cyrus is able to solve most problems that require one side (normally White) to force checkmate within a certain number of moves (you will often see such positions in newspaper chess columns). A mate in anything up to six moves (11 ply) can be found, although a lengthy solution may demand considerable time.

Set up the position as in Section 12. On leaving 'set up' mode, select level 9 and press M. If the program then finds a forced mate, it will play the key move. However, Cyrus is unable to find a solution that involves an 'under-promotion' (promotion of pawn to rook, bishop or knight).

14 RÉSUMÉ OF KEY FUNCTIONS

↑, ↓, ←, →	cursor movement keys
ENTER	“from” or “to” square when moving a piece
SPACE BAR	toggles between board display and message display
A	sets computer into Auto mode
F	step forward 1 ply (a move by one side)
H	asks computer to suggest the best move
L	increments level
M	asks computer to make the next move, or forces the program to move instantly if it is already considering a move
S	selects Set-up mode (see below)
T	takes back 1 ply (a move by one side)

SET-UP:

CLEAR	clears the whole board
O	clears the cursor square
X	changes colour for setting pieces
P	places a pawn on the cursor square
N	places a knight on the cursor square
B	places a bishop on the cursor square
R	places a rook on the cursor square
Q	places a queen on the cursor square
K	places a king on the cursor square
BREAK	new game) both these keys
S	leaves set-up mode) exit from set-up mode

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Dragon Data Ltd.
Queensway, Swansea Industrial Estate,
Swansea, SA5 4EH.

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