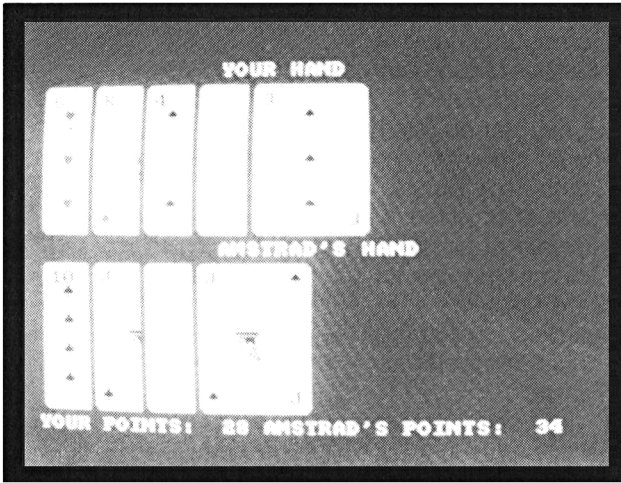


# THIRTY-ONE



## CLASSIFICATION: Parlor Game

Inflation comes even to Blackjack in this game where the Amstrad challenges you to a game of cards! Add the value of your cards and if you are closer to 31 than the Amstrad then you win! Of course, a hand over 31 costs you (or the Amstrad) the game.

Answer the questions asked of you by pressing the required numbers and then <RETURN>.

## PROGRAMMING SUGGESTIONS

The game could be made more complex by getting the Amstrad to remember what cards have already been used and calculating the probabilities for the next card.

## **PROGRAM**

### **Variables**

CARD\$	String for card face
CARD\$(52)	Each string to be printed on the card face
DECK(52)	Deck of cards
CC(52)	Colours of cards
CHAND(16)	Computer's hand
NEXTCD	Number of the next card on the deck
ACCOUNT	Account balance
MBET	Money bet on this hand
PPTS	Player's points
CPTS	Computer's points
NPCDS	Number of player's cards
NCCDS	Number of computer's cards
COL, ROW	Column and row for drawing cards
CDRAW	Card to draw
BLANK\$	Initialise card strings
PSTOP	Player stopped flag
I, J, K, T\$	Temps

### **Program Structure**

Lines	Function/Activity
5 — 420	Initialise variables
430 — 480	Initialise Screen and Player's hand
490 — 990	Main loop
1077 — 1990	Draw card
2077 — 2490	Hand finished
2507 — 2990	Next round or finish
3077 — 3017	Player loses

Initialise variables
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```

5   DEF FNPTS( C ) = ( C MOD 13 ) - 13 * ( ( C / 13 ) = INT
    ( C / 13 ) )
10  MODE 1 : INK 0, 1 : INK 1, 26 : INK 2, 6 : INK 3, 0
15  DEF FNSUIT( C ) = - 228 * ( C < 14 ) - 229 * ( C > 39 )
    - 227 * ( ( C >= 14 ) AND ( C <= 26 ) ) - 226 * ( ( C >
    = 27 ) AND ( C <= 39 ) )
20  SYMBOL AFTER 236 : SYMBOL 236, 255, 127, 42, 31, 19, 29
    , 9, 16 : SYMBOL 237, 32, 56, 16, 28, 16, 16, 17, 14
30  SYMBOL 238, 255, 254, 172, 248, 248, 248, 188, 136 : SY
    MBOL 239, 116, 92, 84, 108, 106, 218, 151, 7
40  SYMBOL 240, 0, 0, 0, 0, 3, 7, 15, 15 : SYMBOL 241, 0, 0
    , 0, 0, 255, 255, 255, 255
50  SYMBOL 242, 0, 0, 0, 0, 192, 224, 240, 240 : SYMBOL 243
    , 15, 15, 15, 15, 15, 15, 15
60  SYMBOL 244, 240, 240, 240, 240, 240, 240, 240, 240 : SY
    MBOL 245, 15, 15, 7, 3, 0, 0, 0, 0
70  SYMBOL 246, 255, 255, 255, 255, 0, 0, 0, 0 : SYMBOL 247
    , 240, 240, 224, 192, 0, 0, 0
80  SYMBOL 248, 4, 10, 15, 5, 7, 5, 10, 10 : SYMBOL 249, 10
    , 10, 21, 21, 26, 54, 73, 48
90  SYMBOL 250, 68, 170, 254, 84, 252, 72, 136, 152 : SYMBO
    L 251, 132, 130, 28, 8, 24, 8, 8, 240
100 SYMBOL 252, 0, 5, 11, 15, 31, 62, 60, 121 : SYMBOL 253,
    120, 120, 120, 124, 124, 124, 62, 31
110 SYMBOL 254, 128, 80, 232, 248, 28, 12, 14, 39 : SYMBOL
    255, 7, 7, 199, 15, 207, 15, 30, 252
120 CARD$ = CHR$( 240 ) + STRING$( 7, 241 ) + CHR$( 242 ) +
    CHR$( 10 ) + STRING$( 9, 8 ) : T$ = CHR$( 243 ) + STRIN
    G$( 7, 143 ) + CHR$( 244 )
130 FOR I = 1 TO 9 : CARD$ = CARD$ + T$ + CHR$( 10 ) + STRI
    NG$( 9, 8 ) : NEXT
140 CARD$ = CARD$ + CHR$( 245 ) + STRING$( 7, 246 ) + CHR$(
    247 )
150 DIM CC( 52 ), CARDS$( 52 ), DECK( 52 ), CHAND( 16 )
160 FOR I = 1 TO 26 : CC( I ) = 2 : NEXT
170 FOR I = 27 TO 52 : CC( I ) = 3 : NEXT
180 T$ = STRING$( 9, 9 ) : FOR I = 1 TO 10 : BLANK$ = BLANK
    $ + T$ + CHR$( 10 ) + STRING$( 9, 8 ) : NEXT
190 FOR I = 1 TO 52 : CARDS$( I ) = BLANK$ : DECK( I ) = I
    : NEXT
200 MID$( CARDS$( 1 ), 21, 1 ) = "A" : MID$( CARDS$( 1 ), 1
    79, 1 ) = "A" : FOR I = 2 TO 9 : MID$( CARDS$( I ), 21,
    1 ) = CHR$( 48 + I ) : MID$( CARDS$( I ), 179, 1 ) = CHR
    $( 48 + I ) : NEXT
210 MID$( CARDS$( 14 ), 21, 1 ) = "A" : MID$( CARDS$( 14 ),
    179, 1 ) = "A" : FOR I = 2 TO 9 : MID$( CARDS$( I + 13
    ), 21, 1 ) = CHR$( 48 + I ) : MID$( CARDS$( I + 13 ), 17
    9, 1 ) = CHR$( 48 + I ) : NEXT
220 MID$( CARDS$( 27 ), 21, 1 ) = "A" : MID$( CARDS$( 27 ),
    179, 1 ) = "A" : FOR I = 2 TO 9 : MID$( CARDS$( I + 26
    ), 21, 1 ) = CHR$( 48 + I ) : MID$( CARDS$( I + 26 ), 17
    9, 1 ) = CHR$( 48 + I ) : NEXT
230 MID$( CARDS$( 40 ), 21, 1 ) = "A" : MID$( CARDS$( 40 ),
    179, 1 ) = "A" : FOR I = 2 TO 9 : MID$( CARDS$( I + 39
    ), 21, 1 ) = CHR$( 48 + I ) : MID$( CARDS$( I + 39 ), 17
    9, 1 ) = CHR$( 48 + I ) : NEXT

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240 FOR I = 10 TO 49 STEP 13 : MID$( CARDS$( I ), 21, 1 ) =
    "1" : MID$( CARDS$( I ), 22, 1 ) = "0" : MID$( CARDS$(
    I ), 178, 1 ) = "1" : MID$( CARDS$( I ), 179, 1 ) = "0"
    : NEXT
250 FOR I = 11 TO 50 STEP 13 : MID$( CARDS$( I ), 21, 1 ) =
    "J" : MID$( CARDS$( I ), 179, 1 ) = "J" : NEXT
260 FOR I = 12 TO 51 STEP 13 : MID$( CARDS$( I ), 21, 1 ) =
    "Q" : MID$( CARDS$( I ), 179, 1 ) = "Q" : NEXT
270 FOR I = 13 TO 52 STEP 13 : MID$( CARDS$( I ), 21, 1 ) =
    "K" : MID$( CARDS$( I ), 179, 1 ) = "K" : NEXT
280 FOR I = 1 TO 40 STEP 13 : MID$( CARDS$( I ), 100, 1 ) =
    CHR$( FNSUIT( I ) ) : NEXT
290 FOR I = 2 TO 41 STEP 13 : MID$( CARDS$( I ), 43, 1 ) =
    CHR$( FNSUIT( I ) ) : MID$( CARDS$( I ), 157, 1 ) = CHR$(
    FNSUIT( I ) ) : NEXT
300 FOR I = 3 TO 42 STEP 13 : MID$( CARDS$( I ), 43, 1 ) =
    CHR$( FNSUIT( I ) ) : MID$( CARDS$( I ), 157, 1 ) = CHR$(
    FNSUIT( I ) ) : MID$( CARDS$( I ), 100, 1 ) = CHR$( FN
    SUIT( I ) ) : NEXT
310 FOR I = 4 TO 43 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : MI
    D$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45, 1
    ) = T$ : MID$( CARDS$( I ), 155, 1 ) = T$ : MID$( CARDS
    $( I ), 159, 1 ) = T$ : NEXT
320 FOR I = 5 TO 44 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : MI
    D$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45, 1
    ) = T$ : MID$( CARDS$( I ), 155, 1 ) = T$ : MID$( CARDS
    $( I ), 159, 1 ) = T$ : MID$( CARDS$( I ), 100, 1 ) = T$
    : NEXT
330 FOR I = 6 TO 45 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : MI
    D$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45, 1
    ) = T$ : MID$( CARDS$( I ), 155, 1 ) = T$ : MID$( CARDS
    $( I ), 159, 1 ) = T$ : MID$( CARDS$( I ), 102, 1 ) = T$
335 MID$( CARDS$( I ), 98, 1 ) = T$ : NEXT
340 FOR I = 7 TO 46 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : MI
    D$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45, 1
    ) = T$ : MID$( CARDS$( I ), 155, 1 ) = T$ : MID$( CARDS
    $( I ), 159, 1 ) = T$ : MID$( CARDS$( I ), 102, 1 ) = T$
345 MID$( CARDS$( I ), 62, 1 ) = T$ : MID$( CARDS$( I ), 98
    , 1 ) = T$ : NEXT
350 FOR I = 8 TO 47 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : MI
    D$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45, 1
    ) = T$ : MID$( CARDS$( I ), 155, 1 ) = T$ : MID$( CARDS
    $( I ), 159, 1 ) = T$ : MID$( CARDS$( I ), 102, 1 ) = T$
355 MID$( CARDS$( I ), 62, 1 ) = T$ : MID$( CARDS$( I ), 98
    , 1 ) = T$ : MID$( CARDS$( I ), 138, 1 ) = T$ : NEXT
360 FOR I = 9 TO 48 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : MI
    D$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45, 1
    ) = T$ : MID$( CARDS$( I ), 79, 1 ) = T$ : MID$( CARDS$(
    I ), 83, 1 ) = T$ : MID$( CARDS$( I ), 117, 1 ) = T$
365 MID$( CARDS$( I ), 121, 1 ) = T$ : MID$( CARDS$( I ), 1
    55, 1 ) = T$ : MID$( CARDS$( I ), 159, 1 ) = T$ : MID$(
    CARDS$( I ), 100, 1 ) = T$ : NEXT
370 FOR I = 10 TO 49 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : M
    ID$( CARDS$( I ), 41, 1 ) = T$ : MID$( CARDS$( I ), 45,
    1 ) = T$ : MID$( CARDS$( I ), 79, 1 ) = T$ : MID$( CARDS
    $( I ), 83, 1 ) = T$ : MID$( CARDS$( I ), 117, 1 ) = T$
375 MID$( CARDS$( I ), 121, 1 ) = T$ : MID$( CARDS$( I ), 1
    55, 1 ) = T$ : MID$( CARDS$( I ), 159, 1 ) = T$ : MID$(
    CARDS$( I ), 62, 1 ) = T$ : MID$( CARDS$( I ), 138, 1 )
    = T$ : NEXT

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380 FOR I = 11 TO 50 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : M
ID$( CARDS$( I ), 27, 1 ) = T$ : MID$( CARDS$( I ), 173,
1 ) = T$ : MID$( CARDS$( I ), 99, 1 ) = CHR$( 236 ) : M
ID$( CARDS$( I ), 100, 1 ) = CHR$( 238 ) : MID$( CARDS$(
I ), 118, 1 ) = CHR$(237)
385 MID$( CARDS$( I ), 119, 1 ) = CHR$(239) : NEXT
390 FOR I = 12 TO 51 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : M
ID$( CARDS$( I ), 27, 1 ) = T$ : MID$( CARDS$( I ), 173,
1 ) = T$ : MID$( CARDS$( I ), 99, 1 ) = CHR$( 252 ) : M
ID$( CARDS$( I ), 100, 1 ) = CHR$( 254 ) : MID$( CARDS$(
I ), 118, 1 ) = CHR$(253)
395 MID$( CARDS$( I ), 119, 1 ) = CHR$(255) : NEXT
400 FOR I = 13 TO 52 STEP 13 : T$ = CHR$( FNSUIT( I ) ) : M
ID$( CARDS$( I ), 27, 1 ) = T$ : MID$( CARDS$( I ), 173,
1 ) = T$ : MID$( CARDS$( I ), 99, 1 ) = CHR$( 248 ) : M
ID$( CARDS$( I ), 100, 1 ) = CHR$( 250 ) : MID$( CARDS$(
I ), 118, 1 ) = CHR$(249)
405 MID$( CARDS$( I ), 119, 1 ) = CHR$(251) : NEXT
410 ACCOUNT = 100 : FOR I = 1 TO 100 : J = INT( RND( 1 ) *
52 ) + 1 : K = INT( RND( 1 ) * 52 ) + 1 : T = DECK( J )
: DECK( J ) = DECK( K ) : DECK( K ) = T : NEXT

```

Initialise screen and player's hand

```

420 :
430 PAPER 0 : CLS : BORDER 1
440 PEN 1 : LOCATE 15, 1 : PRINT "YOUR HAND" : LOCATE 15, 2
5 : PRINT "ACCOUNT : _" : PRINT USING "#####.##"; ACC
OUNT
450 NEXTCD = 2 : CDRAW = DECK( 1 ) : COL = 1 : ROW = 2 : GO
SUB 1000 : NPCDS = 1
460 PPTS = FNPTS( CDRAW ) : LOCATE 15, 15 : PEN 1 : PRINT "
POINTS : _" : PPTS
470 LOCATE 1, 20 : INPUT "Initial bet _" : X$ : MBET = VAL( X
$ )

```

Main program loop

```

480 :
490 NCCDS = NCCDS + 1 : CPTS = CPTS + FNPTS( DECK( NEXTCD )
) : CHAND( NCCDS ) = DECK( NEXTCD ) : NEXTCD = NEXTCD +
1 : IF CPTS > 25 AND PSTOP = 1 THEN 2000
500 IF PSTOP = 1 THEN 490 ELSE CDRAW = DECK( NEXTCD ) : COL
= 1 + 4 * NPCDS : ROW = 2 : GOSUB 1000 : NEXTCD = NEXTC
D + 1 : NPCDS = NPCDS + 1
505 PPTS = PPTS + FNPTS( CDRAW ) : LOCATE 15, 15 : PEN 1 :
PRINT "POINTS : _" : PPTS : IF PPTS > 31 THEN 3000
510 LOCATE 1, 22 : PEN 1 : INPUT "WANT TO STOP (Y/N)" : X$ :
IF X$ <> "Y" AND X$ <> "y" THEN 520 ELSE PSTOP = 1 : IF
CPTS > 25 THEN 2000 ELSE 490
520 LOCATE 1, 20 : INPUT "HOW MUCH TO ADD TO YOUR BET" : X$
: MBET = MBET + VAL( X$ )
530 LOCATE 1, 20 : PRINT SPACE$( 39 ) : LOCATE 1, 22 : PRIN
T SPACE$( 39 ) : IF CPTS > 25 THEN 500 ELSE GOTO 490

```

Draw card

```

990 :

```

```

1000 PEN 1 : LOCATE COL, ROW
1010 PRINT USING "&"; CARD#: PAPER 1
1020 PEN CC( CDRAW ) : LOCATE COL, ROW : PRINT USING "&"; CA
RDS#: CDRAW )
1030 PAPER 0
1040 RETURN

```

Hand finished

```

1990 :
2000 LOCATE 15, 15 : PRINT SPACE$( 20 ) : LOCATE 15, 13 : PE
N 1 : PRINT "AMSTRAD'S HAND▲▲▲" : FOR I = 1 TO NCCDS : C
OL = 4 * I - 3 : ROW = 14 : CDRAW = CHAND( I ) : GOSUB 1
000 : NEXT
2010 PEN 1 : LOCATE 1, 25 : PRINT "YOUR POINTS :▲"; PPTS; "A
MSTRAD'S POINTS :▲"; CPTS
2020 FOR I = 1 TO 6000 : NEXT
2030 LOCATE 1, 25 : PRINT SPACE$( 39 ) : IF CPTS > 31 THEN 2
050
2040 IF CPTS > PPTS THEN 3000 ELSE IF PPTS = CPTS THEN CLS :
PRINT "IT IS A DRAW!!" : GOTO 2500
2050 CLS : PRINT "YOUR WIN!!" : ACCOUNT = ACCOUNT + MBET :
GOTO 2500

```

Next round or finish

```

2490 :
2500 FOR I = 1 TO 4000 : NEXT
2510 FOR I = 1 TO 100 : J = INT( RND( 1 ) * 52 ) + 1 : K = I
NT( RND( 1 ) * 52 ) + 1 : T = DECK( J ) : DECK( J ) = DE
CK( K ) : DECK( K ) = T : NEXT
2520 CPTS = 0 : NCCDS = 0 : PSTOP = 0 : MBET = 0
2530 PRINT : INPUT "ANOTHER HAND"; X#: IF X# = "Y" OR X# =
"y" THEN 430
2540 PRINT : PRINT "YOUR ACCOUNT :▲"; : PRINT USING "$#####
#.###"; ACCOUNT
2550 IF ACCOUNT < 0 THEN PRINT "EXPECT A VISIT BY THE BOYS!!
!!" ELSE PRINT "ENJOY YOUR WINNINGS!!!"
2560 END

```

Player loses

```

2990 :
3000 FOR I = 1 TO 2000 : NEXT : CLS : PRINT "AMSTRAD WINS!!
" : ACCOUNT = ACCOUNT - MBET
3010 GOTO 2500

```

# ChexSum Tables

5 = 4223	290 = 7246	505 = 6085
10 = 1338	300 = 10056	510 = 7340
15 = 8647	310 = 10261	520 = 4633
20 = 3511	320 = 11958	530 = 4057
30 = 4730	330 = 11817	990 = 0
40 = 3064	335 = 1901	1000 = 1232
50 = 3090	340 = 11819	1010 = 1336
60 = 4016	345 = 3590	1020 = 3860
70 = 3954	350 = 11821	1030 = 232
80 = 2415	355 = 5355	1040 = 201
90 = 3867	360 = 11686	1990 = 0
100 = 3246	365 = 7251	2000 = 8504
110 = 3633	370 = 11699	2010 = 4280
120 = 7400	375 = 8978	2020 = 1296
130 = 4093	380 = 12979	2030 = 2238
140 = 3812	385 = 2342	2040 = 5448
150 = 2589	390 = 13029	2050 = 3814
160 = 2012	395 = 2326	2490 = 0
170 = 2076	400 = 13019	2500 = 1336
180 = 5297	405 = 2354	2510 = 8939
190 = 3903	410 = 9938	2520 = 2990
200 = 8815	420 = 0	2530 = 3885
210 = 9459	430 = 581	2540 = 3240
220 = 9511	440 = 4495	2550 = 5628
230 = 9563	450 = 4608	2560 = 152
240 = 8075	460 = 3893	2990 = 0
250 = 4903	470 = 3233	3000 = 5036
260 = 4919	480 = 0	3010 = 427
270 = 4909	490 = 11390	
280 = 4340	500 = 9554	
		TOTAL = 450778