



# DECUS

## PROGRAM LIBRARY

DECUS NO.	FOCAL8-75
TITLE	BLACKJACK
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SOURCE LANGUAGE	FOCAL

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## BLACKJACK

DECUS Program Library Write-up

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**ABSTRACT:** A modified Blackjack game written in FOCAL. The game contains standard Blackjack payoffs as well as a "double down option" on hands of 10 or 11.

**OPERATION:** The game is initiated by typing "GO". The carriage return terminates all lines. In response to the questions asked by the computer, the operator should type a "1" for yes and a "2" for no.

After asking for a bet the program deals two cards to the player and one card to the dealer. It then asks if you "Want a hit?". The player may hit the hand as many times as he desires or until the sum of his cards exceeds 21.

If the sum of the player's first two cards equals 10 or 11, the program will ask "Double down option". This is to be answered yes (1) or no (2) at the player's option. If the answer is yes the program will deal out the dealer's hand, then give one card to the player and make its win decision.

If the sum of the player's first two cards is 21, the program will type "Blackjack!" and make its payoff immediately.

**RESTRICTIONS:** The "A" (ACE) always has the value 11 in this game. There is a 1 which is also played. If the player's first two cards are both "A" the program will type out "Impossible Hand" and deal two new cards to the player. Since the game is played in essentially a "sampling with replacement" mode (unlike a true card game) the presence of only one value for the "A" makes little difference. In addition, this type of sampling allows for the possibility of, say, 6 tens in the same hand. These characteristics tend to balance, however, such that the probability of a win or loss is approximately equal.

**SPECIAL OPERATION:** The following modifications should be made to FOCAL (DEC-08-AJAD-PB) for this program:

1261/0200

2672/5170 \*\*

0170/2573

0171/5574

0172/5574

0173/2372

0174/2670

\*\*Suggested by D. Dyment, THE SUMER GAME, DECUS No. FOCAL-5



C-FOCAL , 8/68

01.09 E  
01.10 T !!"BLACKJACK!", "MINIMUM BET IS \$1.  
01.13 T "HOUSE LIMIT OF \$1000"!!  
01.20 A "YOUR BET IS"A;IF (1000-A) 1.13  
01.22 S X=0;IF (A-1) 3.4  
01.26 T "YOUR HAND", !  
01.30 DO 2;S R=C;DO 2;T " ";S D=R+C  
01.32 IF (D-21)1.4,3.5,3.6  
01.40 T !!"DEALER'S HAND";DO 2;S J=C  
01.41 T !;G 4.1  
01.42 T !!"WANT A HIT?";A H;IF (H-2) 1.5,1.6  
01.50 DO 2;T !;S L=D+C;S D=D+C;IF (L-21) 1.42,1.42,3.7  
01.60 S L=D;T !;DO 2;S G=J+C;IF (G-21) 1.62,1.62,3.2  
01.62 IF (G-16) 1.63,1.63,1.3  
01.63 DO 2;S G=G+C;IF (G-21) 1.62,1.62,1.65  
01.65 IF (X-1) 3.2,3.9,3.2;T !!  
01.80 T %2, " = "G,!!;IF (X-1) 1.82,4.5,1.82  
01.82 IF (G-L) 3.2,3.8,3.3  
01.83 IF (G-L) 3.9,3.8,3.91  
  
02.10 S C=FITR(15\*FABS(FRANC));I (C-14)2.2,2.2,2.1  
02.20 I (C-1) 2.1;I (C-11) 2.3,2.9,2.35  
02.30 T %2, " "C;R  
02.35 I (C-12) 2.1,2.6,2.4  
02.40 I (C-13) 2.1,2.7,2.5  
02.50 I (C-14) 2.1,2.8,2.1  
02.60 S C=10;T " J";R  
02.70 S C=10;T " 0";R  
02.80 S C=10;T " K";R  
02.90 T " A";R  
  
03.20 S B=B+A;T %7.02,!"YOU WIN. YOUR WINNINGS ARE "B,!!;G 1.2  
03.30 S B=B-A;T %7.02,!"YOU LOSE. YOUR WINNINGS ARE "B,!!;G 1.2  
03.40 T "MINIMUM BET IS \$1"!!!;G 1.2  
03.50 S B=B+(1.5\*A);T "BLACKJACK!!!"  
03.51 T %7.02,!"YOUR WINNINGS ARE "B,!!;G 1.2  
03.60 T "IMPOSSIBLE HAND"!!!;G 1.26  
03.70 S B=B-A;T %7.02,!"BUST!! YOUR WINNINGS ARE "B,!!;G 1.2  
03.80 T %7.02 "THE HAND IS A TIE! YOUR WINNINGS ARE "B,!!;G 1.2  
03.90 S B=B+(2\*A);T %7.02,!"YOU WIN. YOUR WINNINGS ARE "B,!!;G 1.2  
03.91 S B=B-(2\*A);T %7.02,!"YOU LOSE. YOUR WINNINGS ARE "B,!!;G 1.2  
  
04.10 IF (D-10) 1.42,4.3,4.2  
04.20 IF (D-11) 1.42,4.3,1.42  
04.30 A "DOUBLE DOWN OPTION"X;IF (2-X) 4.3,1.42,1.6  
04.50 DO 2;T !;S L=D+C;IF (L-21) 1.33,4.7,3.91  
04.70 G 1.33



\*GO

BLACKJACK  
MINIMUM BET IS \$1. HOUSE LIMIT OF \$1000

YOUR BET IS:100

YOUR HAND

Q K

DEALER'S HAND 7

WANT A HIT?:2

J = 17

YOU WIN. YOUR WINNINGS ARE 100.00

YOUR BET IS:10000  
HOUSE LIMIT OF \$1000

YOUR BET IS:100

YOUR HAND

1 4

DEALER'S HAND J

WANT A HIT?:1

1

WANT A HIT?:1

1

WANT A HIT?:1

2

WANT A HIT?:1

Q

WANT A HIT?:2

Q = 20

YOU LOSE. YOUR WINNINGS ARE 0.00

YOUR BET IS:100

YOUR HAND

5 7





DEALER'S HAND 10

WANT A HIT?:1  
10

BUST!! YOUR WINNINGS ARE - 100.00

YOUR BET IS:654  
YOUR HAND  
J 7

DEALER'S HAND 2

WANT A HIT?:2

1 0 8 = 21

YOU LOSE. YOUR WINNINGS ARE - 754.00

YOUR BET IS:867  
YOUR HAND  
1 9

DEALER'S HAND 5  
DOUBLE DOWN OPTION:1

5 8 = 18

7

YOU LOSE. YOUR WINNINGS ARE - 2488.00

YOUR BET IS:655  
YOUR HAND  
0 A BLACKJACK!!  
YOUR WINNINGS ARE - 1505.50

YOUR BET IS:1000  
YOUR HAND  
7 2

DEALER'S HAND 4

WANT A HIT?:1  
J

WANT A HIT?:2

5 K = 19

THE HAND IS A TIE! YOUR WINNINGS ARE - 1505.50

