

Location Code Key

```

000 01 1
001 51 SBR
002 32 SIN
003 42 STO
004 00 0
005 03 3
006 02 2
007 51 SBR
008 32 SIN
009 01 1
010 51 SBR
011 32 SIN
012 41 GTO
013 12 CB
014 46 *LBL
015 32 SIN
016 42 STO
017 00 0
018 00 0
019 22 INV
020 57 *fix
021 43 RCL
022 09 9
023 09 9
024 40 *X2
025 52 EE
026 00 0
027 09 9
028 22 INV
029 52 EE
030 42 STO
031 09 9
032 09 9
033 75 -
034 53 (
035 42 STO
036 55 o/o
037 01 1
038 03 3
039 75 -
040 93 .
041 05 5
042 54 )
043 57 *fix
044 00 0
045 52 EE
046 22 INV
047 52 EE
048 65 X
049 01 1
050 03 3
051 85 +
052 02 2
053 75 -
054 42 STO
055 00 0
056 05 5
057 01 1
058 01 1
059 95 =
060 90 *if z
061 33 COS
062 22 INV
063 80 *if p
064 34 TAN
065 01 1
066 00 0
067 41 GTO
068 65 X
069 46 *LBL
070 33 COS
071 36 *IND
072 43 RCL
073 00 0
074 00 0
075 75 -
076 01 1
077 01 1
078 95 =
079 22 INV
080 80 *if p
081 34 TAN
082 01 1

```

Commentary

Deal card to dealer

Store as face down card.

Deal card to player.

Deal card to dealer.

Jump around subroutine
Begin "Deal Card" subroutine

Generate random number in R99

Convert random number to a card value.

Store card value

Is card = 11 [ACE]? If so then go to COS

Is card in range 2 to 10? If so then go to TAN.

Force card value of 10 if outside legitimate range

Blackjack Logic:
Would hand go over 2, if ace counted as 11?
If so then ACE = 1 else ACE = 11

Listing 1.

DeskTop Wonders

SR-52 Card BLACKJACK

Michael J Garvey, vice president and systems consultant with General Computer Services Corporation, 2308 Central Av, Middletown OH 45042, sends in a game program for the SR-52, which was accompanied by this note:

I appreciate your article in your December issue on the "buried gold" in

Operating Procedure For "SR-52 Card BLACKJACK":

1. Load the program card, both sides, after it has been prepared.
2. Prime the random number generator with a 9 or 10 digit number as its seed. A good choice of a priming number is the current time of day (24 hour clock), followed by the date. This gives 10 digits total in the format.
Enter: hhmmymmdd
Then press: STO, 9, 9
3. Enter the amount of your bet and start the game:
Enter: bet amount
Then press: A
4. Outcome:
If the display flashes, then the game is over. The display shows the total of dealer and player hands.
Press: CE to stop flashing.
Then press: RCL, 9, 8 to read out the cumulative score if desired.
Go to Step 3 to restart game.
If the display is not flashing, the dealer's face down card is not shown.
5. Player options:
To take a "hit,"
Press B
Then go to step 4.
To "stand,"
Press C
Then go to step 4.
To "double down" (if player's hand is 10 or 11 and not initial deal).
Press D
Then go to step 4.

Notes on operation of the game:

The player always wins at 21.
House always draws to 16 or lower, stands on 17 or higher.
On a "push" (both hands equal) neither side wins unless player has 21.

Listing 1, continued:

Location	Code	Key	Commentary
083	46	*LBL	Store adjusted card value.
084	65	X	
085	42	STO	
086	00	0	
087	05	5	Add card to total hand of receiver.
088	46	*LBL	
089	34	TAN	
090	43	RCL	
091	00	0	
092	05	5	
093	36	*IND	
094	44	SUM	
095	00	0	Game entry (start here)
096	00	0	
097	56	*rtn	
098	46	*LBL	
099	11	A	Clear bet in R19
100	47	*CMs	
101	42	STO	
102	01	1	
103	09	9	Go to 000
104	86	*rset	
105	46	*LBL	
106	14	D	
107	02	2	"Double down" entry
108	49	*PROD	
109	01	1	
110	09	9	
111	50	*st fl	Turn on "stand" flag
112	00	0	
113	46	*LBL	
114	12	B	
115	02	2	"Hit" entry
116	51	SBR	
117	32	SIN	
118	41	GTO	
119	45	y ^x	Skip around "stand"
120	46	*LBL	
121	13	C	
122	50	*st fl	
123	00	0	Turn on "stand" flag
124	46	*LBL	
125	45	y ^x	
126	43	RCL	
127	00	0	
128	02	2	
129	75	—	
130	02	2	
131	01	1	If player's total = 21 then go to 2' else if player's total >21 then go to 1'
132	95	=	
133	90	*if z	
134	88	*2'	
135	80	*if p	
136	87	*1'	
137	43	RCL	
138	00	0	
139	01	1	If dealer's total = 21 then go to 1' else if dealer's total >21 then go to 2'
140	75	—	
141	02	2	
142	01	1	
143	95	=	
144	90	*if z	
145	87	*1'	
146	80	*if p	
147	88	*2'	If "stand" switch on then go to 8' [to display]
148	22	INV	
149	60	*if fl	
150	00	0	
151	68	*8'	
152	43	RCL	
153	00	0	
154	01	1	
155	75	—	Is dealer's total ≥ 17?
156	01	1	
157	07	7	
158	95	=	
159	80	*if p	If so then go to 3'
160	89	*3'	
161	01	1	
162	51	SBR	
163	32	SIN	Draw another card for dealer

the Texas Instruments SR-52 Programmable Calculator; it confirmed my suspicions that my SR-52 had more power than the instruction manual said.

Enclosed is a program listing for a program that I have written that will allow you to play BLACKJACK with an SR-52. This program was the toughest that I have written for that machine, since the 224 program steps allowed just didn't seem enough for the game; several days were spent in working and reworking the code in order to get the game to fit with the features I wanted. As you can see, it just fits, exactly.

I have sent this program to you in case any of your readers would be interested in it. My family and friends have had a great deal of fun with it, and it's especially great for killing time on a long trip; one person can "stake" the "house," while another person is the player. The program automatically keeps score for the player, and even handles the "double-down" feature of the game.

I submit it for the entertainment of anyone who wants to use it.

Listing 1 shows the program code, which we typeset using column headings from the original form, along with the register allocations. The procedures for using the SR-52 Card BLACKJACK program are summarized in the box labelled "Operating Procedure."

Location	Code	Key	Commentary
164	41	GTO	Go to C
165	13	C	
166	46	*LBL	
167	89	*3'	
168	43	RCL	Is dealer's total = player's total?
169	00	0	
170	01	1	
171	75	—	
172	43	RCL	
173	00	0	
174	02	2	
175	95	=	
176	90	*if z	If so then go to 7'
177	67	*7'	
178	22	INV	
179	80	*if p	
180	88	*2'	Is dealer's hand less than player's
181	46	*LBL	
182	87	*1'	
183	01	1	
184	94	+/-	If so go to 2'
185	49	*PROD	
186	01	1	
187	09	9	
188	46	*LBL	Otherwise, dealer wins
189	88	*2'	
190	43	RCL	
191	01	1	
192	09	9	Add current bet to player's total score
193	44	SUM	
194	09	9	
195	08	8	

Location Code	Key
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ALLOCATIONS FOR SR-52 CARD BLACKJACK:

Register Utilization:

```
00 = pointer for subroutine parameter
01 = dealer count
02 = player count
03 = facedown
05 = current card
98 = winnings
99 = random number output
19 = current bet
```

