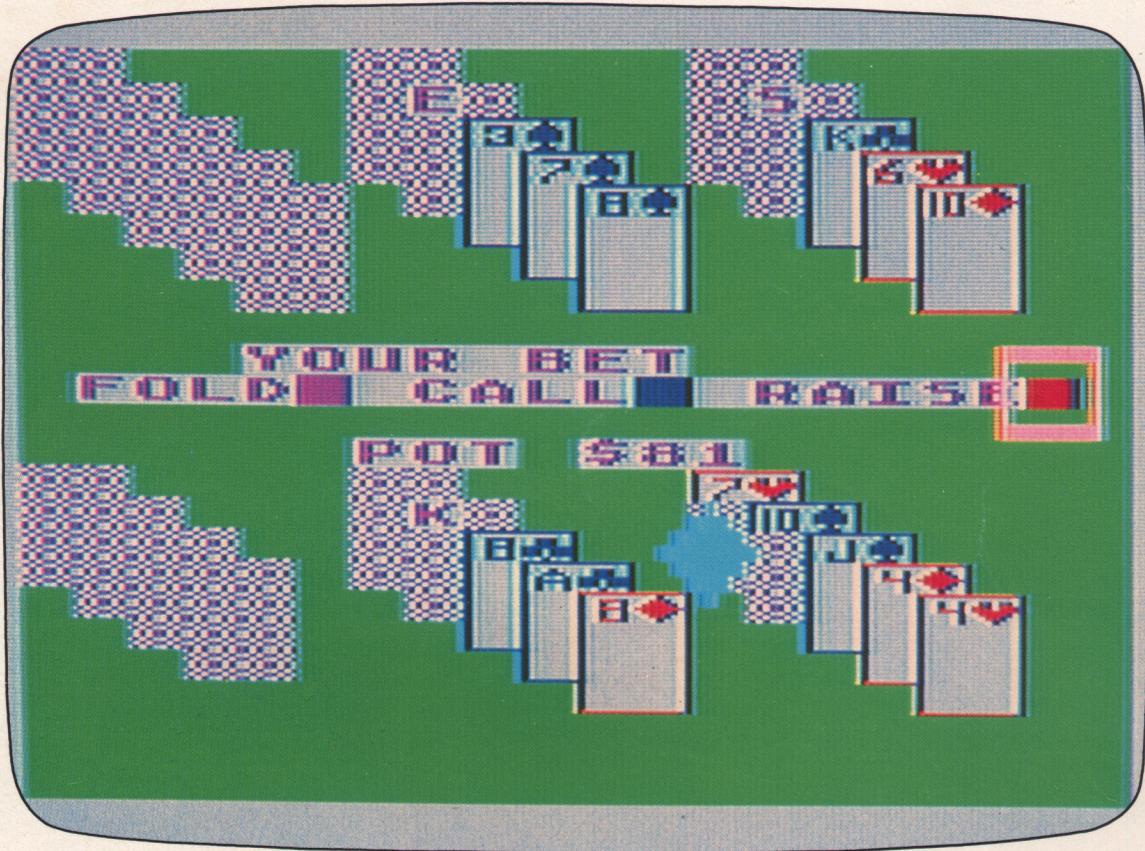


APX

ATARI® PROGRAM EXCHANGE

Entertainment



SEVEN CARD STUD

Play poker with five computer opponents

Requires:

Cassette (APX-10118): ATARI 410™ Program Recorder
24K RAM

Diskette (APX-20118): ATARI 810™ Disk Drive
32K RAM

ATARI BASIC Language Cartridge
One ATARI Joystick Controller

Consumer-written programs for ATARI Home Computers

SEVEN CARD STUD

by

Monty Webb

Program and manual contents © 1982 Monty Webb

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Overview

That big game is coming up and you need to practice your poker skills. What strategies work against the new player in your group? How's your bluffing? Do you remember when to fold, hold, and raise? SEVEN CARD STUD simulates five card-playing partners with four programmable characteristics each. You can also use the preprogrammed personalities, which are quite challenging. Once you've completed a hand, SEVEN CARD STUD lets you go back and see everyone's cards for study.

Required accessories

ATARI BASIC Language Cartridge
One ATARI Joystick Controller

- Cassette version

24K RAM
ATARI 410 Program Recorder

- Diskette version

32K RAM
ATARI 810 Disk Drive

Contacting the author

Users wishing to contact the author about SEVEN CARD STUD may write to him at:

1933 Forestwood
Richardson, Texas 75081

Loading SEVEN CARD STUD into computer memory

1. Insert the ATARI BASIC Language Cartridge in the cartridge slot of your computer.

If you have the cassette version of SEVEN CARD STUD:

- a. Turn on your TV set.
- b. Connect your program recorder to the computer and to a wall outlet.
- c. Slide the SEVEN CARD STUD cassette into the program recorder's cassette holder and press REWIND on the recorder until the tape rewinds completely. Then press PLAY.
- d. Turn on your computer while holding down the START key. Press the RETURN key and SEVEN CARD STUD will load and start automatically.

If you have the diskette version of SEVEN CARD STUD:

- a. Turn on your disk drive.
- b. When the BUSY light goes out, open the disk drive door and insert the SEVEN CARD STUD diskette with the label in the lower right-hand corner nearest to you. Close the door.
- c. Turn on your computer and TV set. SEVEN CARD STUD will load automatically into computer memory.

The first display screen

Once the program loads into computer memory, the following information appears

INITIALIZING
PROGRAM
PLEASE WAIT
FOR
SEVEN CARD
STUD
BY
MONTY WEBB
(©) COPYRIGHT 1982

Selecting the options

The following screen refers to the players' programmable characteristics.

IF YOU WANT TO
CHANGE THE PLAYERS
PRESS THE OPTION
KEY.

IF YOU DO NOT
WANT TO CHANGE,
PRESS THE JOYSTICK
BUTTON.

THIS IS THE ONLY
TIME YOU SHOULD
ALTER THE PLAYERS
UNTIL YOU RELOAD
THE PROGRAM.

If you're new to SEVEN CARD STUD, press the joystick button and try playing with the preprogrammed characteristics. Once you become familiar with the five players, you'll have a better idea of which characteristics to change. Press the OPTION key and SEVEN CARD STUD will ask you to pick one of three different personalities for these characteristics:

1. BLUFF FACTOR,
2. RAISE FREQUENCY,
3. ODDS EVALUATION, and
4. OVERALL JUDGMENT

Bluff factor

The bluffing trait describes quite a bit about a person. It also represents the player's general evaluation of raises in the game. The first player is Monty. SEVEN CARD STUD asks, "How hard to bluff do you want him to be?" The choices, HARD - AVERAGE - EASY, appear under the question with a red window over the middle choice. Make sure you're holding your joystick with the red button at the upper left and the word TOP facing the television. Move the joystick to the right or left and the window will move to the other choices. If you let go of the joystick, the box will jump back to the middle choice. To choose a trait to the right or left, hold the joystick in the desired direction and press the red button at the same time.

Author's note. I've played poker for over twenty years and would say that 75 percent of all players are hard to bluff. That's a polite term for unconscious. It means that they ignore the fact that the other players put money in the pot because they have good hands. Most players think that other players are bluffers. Only 10 percent of the players are easy to bluff. They run out of money in most games because too many people are bluffing. The remaining 15 percent are average, my term for somewhere between hard and easy. These are the good poker players who quickly figure out whom to ignore, can evaluate potential hands against good players, and can act accordingly.

Bluffing is one trait you must adjust when playing with different groups of people. In SEVEN CARD STUD, bluffing is simulated by the 90 percent of the time a raise is taken seriously. The hard-to-bluff player is affected 10 percent of the time by a raise. The average-to-bluff is affected 25 percent of the time. The easy-to-bluff will believe that 75 percent of all raises really indicate that someone has a better hand than the board. This player will fold when he thinks that a "maybe" hand beats him.

The average-to-bluff is very close to the hard-to-bluff because the preprogrammed game has three weak players who must be ignored when they bet. If all players were smart, then you wouldn't ignore their bets and a 75 percent acceptance would be a good value rather than poor.

Raise frequency

Next, you see the question, "How often should he raise?" The choices are LOTS - AVERAGE - RARE. This is a complex trait. Try to have the person in mind with all four playing characteristics balanced before you use your joystick to make the choice.

Author's note. One type of very good player raises every time he has a theoretical advantage. There are two distinct losing types of players: one can't accurately judge his hand and raises too much on too little and the other doesn't raise until he knows he has the best hand. These procedures are O.K. for table stakes, but can be a mistake in small limit poker.

Although, there are consistent winners with all betting tendencies, the very best poker players first drop the bad hands and then bet heavily on the good hands. They have no reason to change this tactic as long as the poor players don't adjust to it. My experience shows that the average-poor player takes somewhat longer than a year either to go broke or to become smart. (Callers are losers!)

Odds evaluation

Now the question, "How far behind must he be to fold?" appears. Use the joystick to choose one of the possible answers, VERY FAR - SMART - A BIT. Because of its mathematical rules, this trait is something the good poker player learns and does not change, regardless of the opposition. If you choose A BIT, the player will fold too many hands. If you choose VERY FAR, the player joins the majority that stays in the game to the very last chance, and sometimes beyond. The SMART players will call when the "pot odds" favor calling, even when they're beat by all the cards showing. SEVEN CARD STUD evaluates each hand and its potential before comparing it to the up cards. The program does not calculate pot odds for each hand, but does consider an average expectation based on cards in the hand.

Author's note. Four to a flush in five cards is evaluated as much better than three to a flush in five cards even though a strict mathematical treatment (i.e., percentages) is not done.

Overall judgment

The question "His overall card playing is?" appears with the choices, TOO LOOSE - SMART - TOO TIGHT. A smart player will generally stay in the game until the fifth card. If his hand is not promising by then, he will fold. A tight player will fold at the third card, if he doesn't have a good hand, and the loose player will generally stay until the seventh card. Use your joystick to select the overall judgment of the player.

Now program the personalities for Eddie, Steve, Kelly, and Doc in the same way. Once you've developed the personality for the last player, the cards will shuffle and the game starts.

Playing SEVEN CARD STUD

Introduction

After you either program the players or accept the preprogrammed personalities, SEVEN CARD STUD deals two cards down and one card up to each player. The first initial of each player's name appears on the down cards. Each player starts with a \$100 stake. You are player number four and can see your down cards. You can't see the other players' down cards and they can't see yours. The computer determines the high card, and a moving blue diamond jumps to that hand. After this player bets, the diamond moves to the next player until it gets to you.

First bet

The opening bet is always \$21, which includes everyone's \$3 ante, plus a \$3 opening bet. If you have the opening hand, you'll see two choices, OPEN - FOLD, in the center of the screen with a movable red window. Use your joystick to respond the same way you programmed the players' personalities. Choosing OPEN automatically enters the \$21 opener. Folding ends the hand for you.

Raise

If you're not the opening hand and it's your turn, you'll see three choices, FOLD - CALL - RAISE, in the center of the screen with a movable red window. Again, use your joystick to make your selection, in the same way that you programmed the players' characteristics. If a player raises the bet, you hear six chips fall. The rules of betting and raising are: \$3 ante and \$3 raise until the last card, when it becomes \$10.

Call and fold

If a player calls, he stays in the game and the bet goes to the next player. If a player folds, he's out of the hand until the next time.

Raise limits

SEVEN CARD STUD provides a three-raise limit per card on the betting. If you try to raise beyond this limit, the program will restrict you to an automatic CALL. The house rule is no checking (the opening bet cannot pass without betting).

The end of the game

The game continues until all the players who have not folded have seven cards. The seventh card is dealt face down adding to the suspense. After the last bet, the computer determines the winner and clears the screen. Then you see the money totals and the game asks if you want to see all players' cards for study. Press your joystick button and the just-played cards reappear. Press the joystick button again and the game deals a new hand to the same players. If you don't want to see the cards for study, a new hand will start when you move the joystick in any direction.

Restarting the game

If you fold after three cards, you'll probably want to stop the game and start a fresh deal. You will need to reload the program by following the introductory instructions. A new game with the original players will appear. You must reprogram the players' characteristics.

The SEVEN CARD STUD players have been set to respond faster when you fold. If you get into the habit of restarting every hand, you won't develop the patience to wait for a good hand in a real game. A typical hand takes two minutes to complete.

Poker theory

SEVEN CARD STUD was written to help you develop a strategy against the majority of poker players. These players are unpredictable and, many times, illogical. There are many good books that will help you play against the majority of intelligent players. However, advice is difficult to use if their ability is below the "book" player. Most of the work in SEVEN CARD STUD involved modeling the average-to-poor player.

The best human players are far better than the players in this program. This should not concern you because the money to be made in poker will come from developing your own strategy to take your share of the money away from the losers. As it turns out, you will also minimize your losses to the better players as a consequence of the "mini-max" theorem. Your ultimate success will depend on how you play two pairs up to low straights. You don't need help on full houses; no one does. You need to practice your strategy over many games to be sure you truly can stay in the winning column.

One interesting thing about the program is that it mimics a very strange phenomenon that occurs in my regular games. Many times the biggest winner, as well as the biggest loser, comes from the same type of player, because the players are gamblers. When they've been playing in many more hands than anyone should, over a short period of time, they have large fluctuations in capital. The important thing is to watch your own bankroll over many sessions. You should be able to show a positive trend after some practice. The actual outcome of any one hand is unimportant as long as you know that you've played correctly.

You can beat two types of players with a sound mathematical approach. Both the incredibly smart and the unconscious gambler are so hard to read that you must depend on some strategy unaffected by their actions. If you're fortunate enough to play with only the third type, the logical but unimaginative, you can vary from a mathematical approach and start deducing information from how they bet. This trait should be a minor deviation away from a strict mini-max point. The minute you totally ignore the sound strategy and try to "fly by by the seat of your pants," someone with a better understanding of the odds will clobber you.

The only data I used to model a "real" player is a history over four poker games. I categorize him just like the players in the computer game. I pay attention to the bets of a man only after he proves he is conscious.

Example. Doc is tight and when he raises, I believe his raise in the same proportion that he actually makes decent raises. If he is never bluffing, I believe he has "some hand" that will beat the probable hands in the game. If he bluffs only 10 percent, I believe only 90 percent.

When you look at all the raises someone makes and attach a percentage to the worthwhile raises he made, you have what I call the "believability percentage". Use this percentage and you're operating at a correct mini-max. You will maximize your winnings over the poor players and minimize your losses to the smart players. The percentage is so low with most poor players that I put them in the "ignore" category. The story that follows proves the point.

Example. I had played with a group of sound players for many years and would deviate from the strict odds of a situation by putting faith in my ability to “read” someone. Then I switched to a new group. The first night I played with the new players, Mr. X flashed his whole hand. I knew he had an ace in the hole and junk. On the seventh card, I was ready to really blast. I had a full house, fives over threes. Mr. Y showed four to a straight. Mr. Z showed an ace, but I knew he had two pair because I had seen that ace in the hole. I did not see his seventh card. I had two pair showing, so I opened for \$10. Mr. Y promptly raised another \$10. Mr. Z re-raised another \$10. “Good luck for me,” I thought. I had seen both the other twos and one ace around the board, so there was only the case ace that could give Mr. X a full house. With two people in with four to a straight, four to a flush, and both raising, I knew Mr. X had to fold. Well, he raised, making it \$30 to me to call and no raises left. A bluff was absurd; he only had a pair of twos showing. There was a 95 percent chance that one of the other two fellows hit, so Mr. X couldn’t be bluffing. I folded my full house, secure in the knowledge I had done the correct thing. When all the cards were turned over, Mr. Y had his straight, Mr. Z had his flush, and Mr. X had his two pair.

I had done a terrible thing. It turned out that Mr. X will raise two pair as long as he can beat anything showing. He wasn’t disturbed when he lost. He just said, “I didn’t think you made your flush,” to Mr. Z. That was very true. He never thinks anyone has anything. In the following games, I retreated to straight “play the odds” and almost totally ignored Mr. X’s actions.

I pay attention to the cards. The cards are the only real evidence. Now I am winning again.

Review Form

We're interested in your experiences with APX programs and documentation, both favorable and unfavorable. Many of our authors are eager to improve their programs if they know what you want. And, of course, we want to know about any bugs that slipped by us, so that the author can fix them. We also want to know whether our

instructions are meeting your needs. You are our best source for suggesting improvements! Please help us by taking a moment to fill in this review sheet. Fold the sheet in thirds and seal it so that the address on the bottom of the back becomes the envelope front. Thank you for helping us!

1. Name and APX number of program.

2. If you have problems using the program, please describe them here.

3. What do you especially like about this program?

4. What do you think the program's weaknesses are?

5. How can the catalog description be more accurate or comprehensive?

6. On a scale of 1 to 10, 1 being "poor" and 10 being "excellent", please rate the following aspects of this program:

- _____ Easy to use
- _____ User-oriented (e.g., menus, prompts, clear language)
- _____ Enjoyable
- _____ Self-instructive
- _____ Useful (non-game programs)
- _____ Imaginative graphics and sound

7. Describe any technical errors you found in the user instructions (please give page numbers).

8. What did you especially like about the user instructions?

9. What revisions or additions would improve these instructions?

10. On a scale of 1 to 10, 1 representing "poor" and 10 representing "excellent", how would you rate the user instructions and why?

11. Other comments about the program or user instructions:

From

STAMP

ATARI Program Exchange
P.O. Box 3705
Santa Clara, CA 95055

[seal here]

SEVEN CARD STUD, A USER PROGRAMMABLE SIMULATION

by Monty Webb

Recommended for ages 10 and up/Written in BASIC

That big game is coming up and you need to practice your poker skills. What strategies work against the new player in your group? How's your bluffing? Do you remember when to fold, hold, and raise? SEVEN CARD STUD simulates five card-playing partners with four programmable characteristics.

Using a Joystick Controller, you can change the players' characteristics. If you're new to SEVEN CARD STUD, use the preprogrammed personalities, which are quite a challenge. If you're ready to sharpen your card techniques or create your own competition, you can choose one of three traits in four different categories for each player. First, you decide if a player is hard, average, or easy to bluff. Next, you decide how often this player raises. Then you choose the degree of risk he'll take before he folds. Finally, you determine his overall playing strategy — to loose, smart, or too tight. You answer these questions for each player.

SEVEN CARD STUD shuffles the cards and deals two down and one up to each player. The program finds the highest hand showing and starts the betting. According to the player's programmed characteristics, he will fold, call, or raise. The other players respond in turn. When it's your turn, you also choose to fold, call, or raise. The pot grows as you bet on each round. At the end of seven cards, all hands still in the game turn face-up. SEVEN CARD STUD then determines the winner and the announcement, "Who Has The Gold?", appears with a list of everyone's winnings. You can then go back and see everyone's cards for study.

At the end of the game, you can play another hand against the same players or you can restart the game and change the players' personalities.

The author invites written questions and comments.

MONTY WEBB



About the author

Monty Webb bought his ATARI Home Computer for one reason only: he loves games! A poker player himself, he wanted something realistic to play against. He knew that a poker game is won or lost because of the personalities and strategies of the players, and he wanted *Seven Card Stud* to include

these variables. To create the sophisticated game he had in mind, he had to learn programming in general, and to understand character set redefinition in particular. Fortunately, he shares his programming hobby with his sons, Dean, 14, and Sparky, 11, who are already proficient BASIC programmers. A chemical engineer by training, Monty is chief engineer for a manufacturer of semiconductors in Dallas, Texas.

REVIEW COMMENTS

This game is not a beginning tutorial. The graphics are very good. Poker players are sure to enjoy this excellent simulation.

The user manual is VERY GOOD.

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