

UNCLE BERNIE'S FAMOUS "CODEBREAKER" GAME

for the Apple-1 and the Apple-II

written and turned loose on the world in 2021 A.D.

This is a little game needing only 2 Kbytes of RAM. The same code runs on the Apple-1 and Apple-II.

Here are my fond memories of this game:

When I was a kid, in the early 1970s, I got the then brand new "Mastermind" game set made by Parker Brothers, and I loved to play it together with my friends. It was based on colored pegs and a small plastic board with holes into which the pegs would go. A small plastic shield hid the "secret color code" of the first player from view of the second player whose task was to decipher the "secret color code" by placing a row of four colored pegs – the "guess" - on the board. The first player would answer with four smaller pegs conveying information about the matches (if any), but nothing about their actual position. A friend of mine had his own game set and so we could play the game as a match, taking turns. The first player guessing the code of the other player would win. IIRC, this was one option mentioned in the original game's manual (a clever trick to increase sales of the game !), but in any case, it was much more fun to play with two game sets !

After a while I found out I could cheat and greatly increase my chances to win by not putting any pegs behind my own shield. I would make up my responses on the fly, and after each guess of the opponent, I would choose a response that would slow him down as much as possible. Of course, according to the manufacturer's rules of the game, at the end of each run the players were supposed to remove their shields to unveil their secret code, so the players could check if the answers given were honest. When my friend saw my empty secret code the first time, he of course immediately accused me of cheating, but I told him to calm down and assured him that I always play honestly, and placed the colored pegs of my final "secret code" into the empty holes to prove it to him. He checked it against my responses and found no flaw. I then told him that to avoid any chance of him peeking at my secret code, I just kept it only in my head, and I would suggest to him to do the same, as these shields were a little bit too small and ill shaped to be absolutely safe in hiding the colored pegs (indeed they were somewhat too small and heads were craning around all the time to try getting a glimpse of the opponent's secret code).

He tried to follow that advice and soon I discovered a contradiction in his answers. Then *I* was the one who accused *him* of cheating and explained to him where his answers did contradict each other. He then agreed that I did win this one botched game because he had "made an unintentional mistake". He denied however that he had done that on purpose. So we agreed on new rules: any false answer that could be proven would immediately terminate the match and the offended player would win (this may sound much more difficult than it really is – when you can't find any good guess anymore which would match all the previous answers, you know something is wrong with them, and with a little bit of reasoning you can quickly find out which peg(s) in which answer(s) are the culprit(s)).

At this point, with these new rules, the game was no humble "Mastermind" for kids no more. It had turned into an aggressive and tense game of logic and deceit. Much like what the "Spies and Spook Organizations" of our much beloved governments do. Their daily "work" does not only involve intercepting and reading all of our emails from us "little people" but, also involves secret codes, spy rings, clandestine operations, and so hence and so forth. A very noble and productive job indeed !

So I came up with my own background story for this game:

Imagine you are a master codebreaker working for a three-letter government agency which cannot be named. Your task is to break the four letter secret code word of an enemy spy ring. To find out if your guess of their secret code word is correct, the agency has placed an undercover agent within the spy ring. You can signal him your guess, but he must be very careful when answering to avoid getting discovered, so he can only give you brief signals with a flashlight: a long flash ('*' in the game) for each letter that is in the correct position, and a short flash for each letter ('+' in the game) that matches another yet unmatched letter in the secret code, but is in a wrong position. The long flashes come first, and then the short flashes, so no positional information where the matches are can be signaled. No more than four flashes can be given for any guess. Otherwise the whole signaling would take too long and the undercover agent would be discovered and get killed, and your mission would be a failure !

But to make matters worse, and the game more exciting, there had been a "mole", a double agent, in your own organization. This double agent used to receive guesses for the secret code word of your own organization, and flashed back the answer to the spy ring. This double agent was caught, waterboarded and then hanged but the enemy spy ring can't learn that fact, as they would spook and flee. So you took over his role and you flash back answers to their guesses. Being a true patriot, you would not use the actual secret code of your organization, though. You just make up a four letter word and pretend it's your secret code. You even can cheat and make up this word on the fly, as the enemy makes his guesses, so his efforts will be blunted. But this cheating is not without perils - if the enemy finds out you are lying, you lose. So unless you can cheat without making mistakes, you are better off writing down your made up secret code word from the beginning and then stick to it, so they can't find a fault in your answers.

Now, I hope this little "spy story" I invented for this pamphlet gave you some inspiration and made you laugh ! Back in the day, in the golden decades of such games, the 1970s and 1980s, almost all the commercial games came with a background story. Older games, from the 1960s and 1950s rarely had that feature. They just came with bland rules of the game. And here they are:

- It's a match player (you, master codebreaker !) against the spy ring (hiding in your computer).
- Each side chooses a four letter secret code word unknown to the other side.
- Taking turns, a guess of four letters is given to the other side, attempting to guess their secret code.
- The other side responds with a '*' for each perfect match (correctly guessed letter in the correct position) and a '+' for any correctly guessed letter in a wrong position. A '-' is given for each letter that has no match. No positional information is given. The '*', '+', '-' can be given in any order. (But you are advised to give '*' first, then '+', then '-' to have a nicer display).
- The side which guesses the secret code of the other side first, wins.
- There is a limited number of rounds (depending on the difficulty level) in which the secret code must be found, otherwise this game is a draw.
- If you cheat and give the computer false information, and he finds out, you lose.
- The computer never cheats. If he wins by guessing your secret code word, he will unveil his secret code to you. If he wins because you did cheat, he keeps his code word secret.
- There is a running score of which side has won how many games.

The game continues indefinitely. On the Apple-1, you can restart it at any time by hitting RESET and then give a new start command at the Wozmon command line prompt: 800R <return>. On the Apple-II, there is no such reset, unless you have modified your machine to have it.

Here is an example for a typical guessing session, so you can see how the answers work:

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      CAFE <----- the secret code not known to the guesser
#01  CFFC  **--   (C at pos 1 and F at pos 3 match, all others wrong)
#02  CDAC  *+--   (C at pos 1 match, A at a wrong position, C and D wrong)
#03  CBFD  **--   (C and F match, B and D wrong)
#04  CAFE  ****   (all match)
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This was the “rookie” mode which has the six letters A...F and up to six rounds. It can be proven that six rounds are enough to guess any possible code word, so under optimum play, there won't be any draws. But for the higher levels, which are more challenging, it is not always possible to find a solution within the allowed number of guesses. This was done intentionally to give the human player an edge.

How to load and start the game from the AIFF file (via the cassette interface):

Click (or double click) on the AIFF file to load it into a media player. Put it on “pause” immediately.

To load and start on the **Apple-1** using a standard ACI, type in the following commands:

C100R <return>

7F8 . 0FFFR and then unpause the media player and hit <return> on the Apple-1
wait until the AIFF file has played completely and \ prompt appears (otherwise: see below).

800R <return>

If your ACI has UNCLE BERNIE'S EXTENDED ACI PROMs, use the following:

C500R <return>

RX RX and then unpause the media player and hit <return> on the Apple-1

To load and start on the **Apple-II**, from the BASIC prompt type in the following commands:

CALL -151 <return>

7F8 . 0FFFR and then unpause the media player and hit <return> on the Apple-II.
wait until the AIFF file has played completely and * prompt appears and a beep is heard.

800G <return>

If you get an ERR on the Apple-II or a '?' with my EXTENDED ACI PROMs, or the the cassette read hangs, try again with a higher volume setting. Neither the Apple-1 ACI nor the built-in Apple-II cassette interface are known for being very robust or user friendly. But as long as an audio file is played to them, and has sufficient volume, the program load should finally work. With an cassette recorder, it's much more finicky to find a volume setting that works, but my “Volume indicator LED fix” can help.

Have fun !