

Straights-Demo

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0 Notes and Notations

[...] indicates where the rest of the game has been excluded.

[>] indicates user input.

Note that the format of the output of the game is different from the given executable. This was done intentionally to improve readability.

1 Basic Gameplay

1.1 Robust Command Handling

All commands are handled robustly so that if a player enters an invalid command or card value the game does not have to start over from the beginning.

1.1.1 Seed

When a seed is given it is then used. If multiple seeds are given, the last valid seed is used. If no seed was given as a command-line parameter a message will be printed at the start of the game, and the default seed, `std::chrono::system_clock::now().time_since_epoch().count()`, is used.

```
> ./straights
Could not convert seed. Using default seed: 594983314

> ./straights DASDAS DASD@## @##@
Could not convert seed. Using default seed: 1815772746

> ./straights DSAD 4 DSAD 324 DASD 9
Seed used: 9
...
```

1.1.2 Invite Players

If an invalid player is given. The user will be prompted again to enter another player.

```
> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> SADSAD990sadd
Invalid player.
Is Player1 a human(h) or a computer (c)?
> 242343245324
Invalid player.
Is Player1 a human(h) or a computer (c)?
> DASDASD
Invalid player.
Is Player1 a human(h) or a computer (c)?
> d
Invalid player.
Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
```

```

> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> h
...

```

1.1.3 Human Commands

When an invalid command is given, a message is printed. The player is prompted until a valid command is given.

```

...
Your hand: AD 6D TS 9C 8S 2H KS 4D 5D QC 7S 6S 5S
Legal plays: 7S
> daf sdf234@#!#
Invalid command: daf sdf234@#!#
> adfsaf342
Invalid command: adfsaf342
> play 7S
Player4 plays 7S.
...

```

When an invalid card is played or when the player tries to discard when there is a legal play, a message is printed. The player is prompted for another command until a valid card is played or a valid command is given.

```

...
Your hand: AD 6D TS 9C 8S 2H KS 4D 5D QC 7S 6S 5S
Legal plays: 7S
> play 7G
Invalid suite.
This is not a legal play.
> play 1C
Invalid rank.
This is not a legal play.
> play 123dsfs
Invalid card.
This is not a legal play.
> discard 7S
You have a legal play. You may not discard.
> play 7S
Player4 plays 7S.
...

```

Similarly, when an invalid card is played or when the player tries to play when there is no legal play, a message is printed. The player is prompted for another command until a valid card is discarded or a valid command is given.

```

...
Your hand: 9H 3H KH 3S 8H QH 8D TH 2D TD
Legal plays:
> discard 3Z

```

```

Invalid suite.
This is not a legal discard.
> discard 1D
Invalid rank.
This is not a legal discard.
> discard asdfsd34234
Invalid card.
This is not a legal discard.
> play 2D
This is not a legal play.
> discard 2D
Player1 discards 2D.
...

```

1.2 Deck Shuffle

As instructed, at the beginning of a new round, the cards are shuffled.

```

> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
> deck
9H 3H KH 7C 3S 8H 5C QH 8D TH 2D TD 3C
6H JH 7D 5H 2S 4C JC KD 8C 7H JS AS QD
QS KC 9D 4S 4H 6C JD AC AH 9S 2C TC 3D
AD 6D TS 9C 8S 2H KS 4D 5D QC 7S 6S 5S
...
A new round begins. It's Player3's turn to play.
...
> deck
JH 8S 3D 3C TC 6H 8C 9D 2D QS 8D 7D KS
9S 6C 5C 7C 7H 5S TD 4D 4C KH JD 6S 6D
AH 7S AC JC 4H 8H 2S AD JS KD KC QC 9C
QH 3H 4S 3S TH 5H 2H QD 2C TS AS 5D 9H
...

```

1.3 Computer Players

As instructed, the computer player always makes the first legal play in its hand. If there are no legal plays, the first card in its hand is discarded.

```

> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> h

```

```

Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c

A new round begins. It's Player4's turn to play.

Cards on the table:
Clubs:
Diamonds:
Hearts:
Spades:
Your hand: AD 6D TS 9C 8S 2H KS 4D 5D QC 7S 6S 5S
Legal plays: 7S
Player4 plays 7S.
...
Cards on the table:
Clubs: 7
Diamonds:
Hearts:
Spades: 7
Your hand: 6H JH 7D 5H 2S 4C JC KD 8C 7H JS AS QD
Legal plays: 8C 7D 7H
Player2 plays 8C.
...
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 3 4 5 6 7 8 9 T
Hearts: 5 6 7 8 9
Spades: 5 6 7
Your hand: JH 2S KD JS AS QD
Legal plays:
Player2 discards JH.
...

```

The following is an example of when all players are computer players.

```

> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> c
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c

A new round begins. It's Player4's turn to play.

```

```

...
Player1's discards: 9H 3H KH QH TH
Player1's score: 47 = 47
Player2's discards: JH JS
Player2's score: 22 = 22
Player3's discards: QS AH
Player3's score: 13 = 13
Player4's discards: TS 2H KS
Player4's score: 25 = 25

```

A new round begins. It's Player3's turn to play.

```

...
Player1's discards: JH QS KS
Player1's score: 47 + 36 = 83
Player2's discards: KH
Player2's score: 22 + 13 = 35
Player3's discards: AH 4H 8H 2S JS
Player3's score: 13 + 26 = 39
Player4's discards: QH 3H 4S 3S TH 5H 2H TS AS 9H
Player4's score: 25 + 59 = 84
Player2 wins!

```

1.4 Human Players

For the handling of invalid commands, invalid cards, illegal plays, and illegal discards see section 1.1.3. For a demonstration of the deck command see section 1.2.

1.4.1 Play <card>

When a card is played, it is removed from the player's hand and put on the table.

```

> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Cards on the table:
Clubs:
Diamonds:
Hearts:
Spades: 7
Your hand: 9H 3H KH 7C 3S 8H 5C QH 8D TH 2D TD 3C
Legal plays: 7C
> play 7C
Player1 plays 7C.

Cards on the table:
Clubs: 7

```

```

Diamonds:
Hearts:
Spades: 7
...
Cards on the table:
Clubs:
Diamonds:
Hearts:
Spades: 7
Your hand: JH 8S 3D 3C TC 6H 8C 9D 2D QS 8D 7D KS
Legal plays: 7D 8S
> play 8S
Player1 plays 8S.

Cards on the table:
Clubs:
Diamonds:
Hearts:
Spades: 7 8
...

```

1.4.2 Discard <card>

When a card is discarded, it is removed from the player's hand but not put on the table.

```

> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Cards on the table:
Clubs: 2 3 4 5 6 7 8 9 T J Q
Diamonds:
Hearts:
Spades: 6 7
Your hand: 9H 3H KH 3S 8H QH 8D TH 2D TD
Legal plays:
> discard 2D
Player1 discards 2D.

Cards on the table:
Clubs: 2 3 4 5 6 7 8 9 T J Q
Diamonds:
Hearts:
Spades: 6 7
...

```

1.4.3 Quit

When the quit command is entered, the program terminates immediately.

```
> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Your hand: 9H 3H KH 7C 3S 8H 5C QH 8D TH 2D TD 3C
Legal plays: 7C
> quit
Player1 has quit the game.
```

1.4.4 Ragequit

When a human player ragequits, they are replaced by a computer.

Example 1: The next move is playing a card.

```
> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q
Diamonds: 6 7
Hearts:
Spades: 6 7
Your hand: 9H KH 3S 8H QH 8D TH 2D TD
Legal plays: 8D
> ragequit
Player1 ragequits. A computer will now take over.
Player1 plays 8D.
...
```

Example 2: The next move is discarding a card.

```
> ./straights 1
Seed used: 1
```



```

Is Player1 a human(h) or a computer (c)?
> h
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: A 2 3 4 5 6 7 8 9 T J
Hearts: 5 6 7 8
Spades: 5 6 7
Your hand: 3H KH 3S QH TH
Legal plays:
> ragequit
Player1 ragequits. A computer will now take over.
Player1 discards 3H.

Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: A 2 3 4 5 6 7 8 9 T J
Hearts: 5 6 7 8
Spades: 5 6 7
...

```

1.5 Scoring

At the end of each round, the discarded pile of that round of each player is printed with their current score. If at least one player's score is greater or equal to 80, the game ends and the winner is announced.

```

> ./straights 1
Seed used: 1

Is Player1 a human(h) or a computer (c)?
> c
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Player1's discards: 9H 3H KH QH TH
Player1's score: 47 = 47
Player2's discards: JH JS
Player2's score: 22 = 22
Player3's discards: QS AH
Player3's score: 13 = 13
Player4's discards: TS 2H KS
Player4's score: 25 = 25
...

```

```

Player1's discards: JH QS KS
Player1's score: 47 + 36 = 83
Player2's discards: KH
Player2's score: 22 + 13 = 35
Player3's discards: AH 4H 8H 2S JS
Player3's score: 13 + 26 = 39
Player4's discards: QH 3H 4S 3S TH 5H 2H TS AS 9H
Player4's score: 25 + 59 = 84
Player2 wins!

```

When there are players with the same score. They are both winners.

```

> ./straights 15
Seed used: 15

Is Player1 a human(h) or a computer (c)?
> c
Is Player2 a human(h) or a computer (c)?
> c
Is Player3 a human(h) or a computer (c)?
> c
Is Player4 a human(h) or a computer (c)?
> c
...
Player1's discards: 2S
Player1's score: 26 + 1 + 15 + 2 = 44
Player2's discards: 2H KS AS
Player2's score: 0 + 18 + 10 + 16 = 44
Player3's discards: AH
Player3's score: 24 + 36 + 4 + 1 = 65
Player4's discards: 4S 3S 5H 3H 4H QS
Player4's score: 12 + 39 + 11 + 31 = 93
Player1 wins!
Player2 wins!

```

2 Additional Features

For the extra features, I have implemented two other types of computer players, a dumb one and a smart one. The dumb computer plays the card with the smallest rank that is legal and discards the card of the highest rank if there are no legal plays. The smart computer plays the card with the largest rank, except for cards with a rank of 7 (the smart computer would play all other legal cards before playing the cards that have a rank of 7), and discards the card with the smallest rank if there are no legal plays. To enable this feature use the -enableBonus flag.

When the -enableBonus flag is used. The user will be prompted with two or three yes and no questions. Since the questions about random selection of computer players and wanting a wider variety of computer players are conflicting questions, only when the user answers no to random selection of computer players, they would be asked if they want a wider variety of computer players.

Example 1: User answered yes to the first question.

```
> ./straights -enableBonus 1
Seed used: 1
```

```
If you want a random selection of computer players, enter yes, if not enter no.
> yes
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
...
```

Example 2: User answered no to the first question.

```
> ./straights -enableBonus 1
Seed used: 1
```

```
If you want a random selection of computer players, enter yes, if not enter no.
> no
If you want a wider selection of computer players, enter yes, if not enter no.
> yes
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
...
```

Note that this is also robust.

```
> ./straights -enableBonus 1
Seed used: 1
```

```
If you want a random selection of computer players, enter yes, if not enter no.
> daf
Invalid answer.
If you want a random selection of computer players, enter yes, if not enter no.
```

2.1 Variety of Computer Players

If answered no to the first question and yes to the second, when the user invites a computer player. The user gets prompted to indicate which computer player they want, dumb, normal, or smart.

```
> ./straights -enableBonus
Could not convert seed. Using default seed: -927461394
```

```
If you want a random selection of computer players, enter yes, if not enter no.
> no
If you want a wider selection of computer players, enter yes, if not enter no.
> yes
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
> no
```

```
Is Player1 a human (h) or a computer (c)?
> c
```

```

Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> afdsf
Invalid player.
Is Player1 a human (h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> d
Is Player2 a human (h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> n
Is Player3 a human (h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player4 a human (h) or a computer (c)?
> DSFD
Invalid player.
Is Player4 a human (h) or a computer (c)?
> h
...

```

This section also showcases the strategy of the two additional computer players.

2.1.1 Dumb Computer Player

As said above, the dumb computer plays the card with the smallest rank that is legal and discards the card of the highest rank if there are no legal plays.

```

> ./straights -enableBonus 1
Seed used: 1

If you want a random selection of computer players, enter yes, if not enter no.
> no
If you want a wider selection of computer players, enter yes, if not enter no.
> yes
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
> no

Is Player1 a human (h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> d
Is Player2 a human (h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> d
Is Player3 a human (h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> d
Is Player4 a human (h) or a computer (c)?
> c

```

```

Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> d
...
Cards on the table:
Clubs: 3 4 5 6 7
Diamonds:
Hearts: 7
Spades: 4 5 6 7
Your hand: 9D 5D QS 2D AS AC JD AD 4D 3H TH
Legal plays:
Player1 discards QS
...
Cards on the table:
Clubs: A 2 3 4 5 6 7 8
Diamonds: 7
Hearts: 7
Spades: 4 5 6 7
Your hand: AH 9C 3D 6D KC QC KD QD 5H TC
Legal plays: 9C 6D
Player2 plays 6D.
...

```

2.1.2 Smart Computer Player

As said above, the smart computer plays the card with the largest rank, except for cards with a rank of 7 (the smart computer would play all other legal cards before playing the cards that have a rank of 7), and discards the card with the smallest rank if there are no legal plays.

Example 1: Holding on to the cards with rank seven and playing the largest ranking cards.

```

> ./straights -enableBonus 1
Seed used: 1

If you want a random selection of computer players, enter yes, if not enter no.
> no
If you want a wider selection of computer players, enter yes, if not enter no.
> yes
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
> no

Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player2 a human(h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player3 a human(h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player4 a human(h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?

```

```

> s
...
Cards on the table:
Clubs:
Diamonds:
Hearts:
Spades: 7
Your hand: 8D 6S 3C 6C 9D 5C 2S JC 8C AC KH 4D 7C
Legal plays: 7C 6S
Player4 plays 6S.
...
Cards on the table:
Clubs: 6 7 8 9 T
Diamonds: 7
Hearts:
Spades: 4 5 6 7 8 9 T J Q K
Your hand: 8D 3C 9D 5C 2S JC AC KH 4D
Legal plays: 5C JC 8D
Player4 plays JC.
...

```

Example 2: Discarding the smallest card in hand.

```

> ./straights -enableBonus 1
Seed used: 1

If you want a random selection of computer players, enter yes, if not enter no.
> no
If you want a wider selection of computer players, enter yes, if not enter no.
> yes
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
> no

Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player2 a human(h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player3 a human(h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
Is Player4 a human(h) or a computer (c)?
> c
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> s
...
Cards on the table:
Clubs: 4 5 6 7 8 9 T J Q K
Diamonds: 5 6 7 8 9 T
Hearts: 7 8 9 T J Q K
Spades: 4 5 6 7 8 9 T J Q K
Your hand: 2C AD 2H AH 3D
Legal plays:

```

```
Player1 discards AD.  
...
```

2.2 Random Selection of Computers

If answered yes to the first question, when we invite a computer player, this computer player would be either dumb, smart, or normal (the original computer player). This is a random process (std::rand was used). For demonstration purposes, after inviting a computer player, the computer player will reply by identifying themselves as either a dumb, a normal, or a smart computer player. Below shows that the process by which a computer is invited is random.

Example 1: seeding with 0

```
> ./straights -enableBonus 0  
Seed used: 0
```

```
If you want a random selection of computer players, enter yes, if not enter no.  
> yes  
If you want human players to be able to choose which computer player is going to take  
over when they ragequit, enter yes, if not enter no.  
> no  
  
Is Player1 a human(h) or a computer (c)?  
> c  
I am a dumb computer player.  
Is Player2 a human(h) or a computer (c)?  
> c  
I am a normal computer player.  
Is Player3 a human(h) or a computer (c)?  
> c  
I am a dumb computer player.  
...
```

Example 2: seeding with 1

```
> > ./straights -enableBonus 1  
Seed used: 1
```

```
If you want a random selection of computer players, enter yes, if not enter no.  
> yes  
If you want human players to be able to choose which computer player is going to take  
over when they ragequit, enter yes, if not enter no.  
> no  
  
Is Player1 a human(h) or a computer (c)?  
> c  
I am a dumb computer player.  
Is Player2 a human(h) or a computer (c)?  
> c  
I am a dumb computer player.  
Is Player3 a human(h) or a computer (c)?  
> c  
I am a dumb computer player.  
...
```

Example 3: seeding with 17

```
> ./straights -enableBonus 17
```

```
Seed used: 17
```

```
If you want a random selection of computer players, enter yes, if not enter no.
```

```
> yes
```

```
If you want human players to be able to choose which computer player is going to take over when they ragequit, enter yes, if not enter no.
```

```
> no
```

```
Is Player1 a human(h) or a computer (c)?
```

```
> c
```

```
I am a dumb computer player.
```

```
Is Player2 a human(h) or a computer (c)?
```

```
> c
```

```
I am a dumb computer player.
```

```
Is Player3 a human(h) or a computer (c)?
```

```
> c
```

```
I am a smart computer player.
```

```
...
```

Below shows a game with 176 as the seed.

```
> ./straights -enableBonus 176
```

```
Seed used: 176
```

```
If you want a random selection of computer players, enter yes, if not enter no.
```

```
> yes
```

```
If you want human players to be able to choose which computer player is going to take over when they ragequit, enter yes, if not enter no.
```

```
> no
```

```
Is Player1 a human (h) or a computer (c)?
```

```
> c
```

```
I am a smart computer player.
```

```
Is Player2 a human (h) or a computer (c)?
```

```
> c
```

```
I am a dumb computer player.
```

```
Is Player3 a human (h) or a computer (c)?
```

```
> c
```

```
I am a normal computer player.
```

```
Is Player4 a human (h) or a computer (c)?
```

```
> h
```

```
...
```

```
Cards on the table:
```

```
Clubs:
```

```
Diamonds:
```

```
Hearts: 7
```

```
Spades: 7
```

```
Your hand: 6C JD TH TC JS 4D 2S QC 5S 9D 3C 3S QD
```

```
Legal plays:
```

```
Player2 discards QC.
```



```

Cards on the table:
Clubs:
Diamonds:
Hearts: 7
Spades: 7
Your hand: 4H 9S 7C 6S QH AS 6H 7D 8S AD KS 2C
Legal plays: 7C 7D 6H 6S 8S
Player3 plays 7C.

```

```

...
Cards on the table:
Clubs: 6 7 8 9
Diamonds: 6 7 8 9 T
Hearts: 6 7
Spades: 7
Your hand: JD TH TC JS 4D 2S 5S 3C 3S QD
Legal plays: TC JD
Player2 plays TC.

```

```

...
Cards on the table:
Clubs: 6 7 8 9 T J
Diamonds: 4 5 6 7 8 9 T
Hearts: 6 7
Spades: 6 7 8
Your hand: 8H AH 3D KD 5H 2H 3H 9H
Legal plays: 3D 5H 8H
Player1 plays 8H.

```

```

...
Cards on the table:
Clubs: 6 7 8 9 T J
Diamonds: 4 5 6 7 8 9 T
Hearts: 6 7 8 9
Spades: 3 4 5 6 7 8 9
Your hand: 4H QH AS AD KS 2C
Legal plays:
Player3 discards 4H.

```

```

...
Cards on the table:
Clubs: 6 7 8 9 T J
Diamonds: 3 4 5 6 7 8 9 T J
Hearts: 5 6 7 8 9 T J
Spades: A 2 3 4 5 6 7 8 9 T
Your hand: KD 2H 3H
Legal plays:
Player1 discards 2H.
...

```

2.3 Ragequit Choice

If answered yes to the ragequit question, when a human player ragequits they get to choose which computer player they want to take their place. This process is also robust.

```

...
If you want human players to be able to choose which computer player is going to take
over when they ragequit, enter yes, if not enter no.
> yes

```

```
...
Your hand: JH 7S 6S AC 2C TD AH KC 7D QC 8C JD JC
Legal plays: 7S
> ragequit
Do you want a dumb computer (d), a normal computer (n), or a smart computer (s)?
> d
Player1 ragequits. A computer will now take over.
...
```