

The project uses the observation pattern. The class Player(which contains the information of each player) is an observer of the ConcreteGame class(which contains the information of table and deck).

Firstly, in the main function, the seed is set(if the user set one, then using that one, otherwise the system clock will be used). Then the program defines the Game(in ConcreteGame type) and four players(they are attached to the game when defining) in the main function. After that there is a huge loop in the main function which represents each independent round of the game when the game is not ended(no score greater or equal to 80). In that loop, the program firstly shuffle the deck and initialize every player's card in their hand.

```
g.setDeck(seed); // reset table and shuffle
std::cout << "DEBUG 4" << std::endl;
for(int i = 0; i < 4; ++i) { // reset each player
    p[i].new_round(i);
```

After that, the round started, the program found the player who had 7S and started from their.

```
67 // std::cout << "DEBUG 5" << std::endl;
68 std::cout << "A new round begins. It's Player";
69 // std::cout << "DEBUG 6" << std::endl;
70 for(int j = 0; j < 4; ++j) {
71 // std::cout << "DEBUG 7" << std::endl;
72 for(auto it : p[j].getHand()) {
73 // std::cout << "DEBUG 8" << std::endl;
74 if(it == "7S") {
75 // std::cout << "DEBUG 9" << std::endl;
76 std::cout << j + 1 << "'s turn to play." << std::endl;
77 play_num = j;
78 }
79 }
80 }
```

Then, the program start to allow such user to do something in his/her turn.

```
84 try {
85 // std::cout << "address of g : " << p[play_num].getSubject() << std::endl;
86 // std::cout << "play_num : " << play_num << std::endl;
87 p[play_num].doTurn(true, play_num);
88 } catch(quit_program) {
89 return 0;
90 }
91 // std::cout << "DEBUG 11" << std::endl;
92 // p[play_num].printStatus();
93 g.notifyObserver();
```

The doTurn() function is the function in the concrete observer class Player, which firstly decide whether it is the first card of the round (if yes, then the first play have to play 7S, and other 7 are not legal, which is different from the rule of in my notify function, so I chose to separate it as a special case in the doTurn() function). After that, the function will identify the player is a computer or human, and run different part of code with the if statement. If it is a computer, then the 7S will automatically played and the cards in hand of that player and the table will change. If it is a human player, then the loop is used to receive multiple commands. Also, when the player want to discard the card or play other card here, the error will be given, At this point, if player want to transfer in to computer or quit, the corresponding if statement is

also exists. To change the player into computer, the setComputer function is used to change the bool value stored in the Player class.

```
246 void Player::setComputer() {  
247     is_Human = false;  
248 }
```

To place the first card on the table, we called the putTable() in the concreteGame class. This function receives a card(in string type), and it will identify its suit, and then identify its rank and placed it in the corresponding position in a Table vector(which is ordered).

After the first card played, the notifyObserver function is called, The notify function will let each player visit the data in the concrete game class and update their legal_play (which is a vector of strings to record the cards that are legal to play for each player).

In the main function, there is a small loop to let the rest 51 cards be used, a counter called play_num records which player should play or discard a card, this counter changed periodically in this loop.

```
play_num = (play_num + 1) % 4;
```

Then in the loop of 51 times, the program calls doTurn function 51 times. At this time, each calling of doTurn will not be identified to be the first card. So the doTurn function has more things to do. Firstly identify whether the player is a computer, if yes, then use the strategy(if has legal play, then play the one that at the position 0 in the legal_play vector, if not, then discard the card at the position 0 in the hand vector which records the cards that are in the players hand), if not, then a loop is used for receive multiple commands. Similarly to the first card, if player want to transfer in to computer or quit, the corresponding if statement is exists. If a player wants to play a card, then it will be judged whether it is a legal play. If a player wants to discard the card, the function will judge whether there are legal plays and whether the card that chose to be discard is in the hand.

```
else if(command == "discard") {  
    std::cin >> card;  
    if(legal_play.size() > 0) {  
        std::cout << "You have a legal play. You may not discard." << std::endl;  
        continue;  
    } else {  
        if(std::find(begin(hand), end(hand), card) == end(hand)) {  
            std::cerr << "Invalid card choice, no such card found." << std::endl;  
            continue;  
        } else {  
            std::cout << "Player " << play_num + 1 << " discards " << card << "." << std::endl;  
            discard.emplace_back(card);  
            hand.erase(std::find(begin(hand), end(hand), card));  
        }  
    }  
    _break;  
}
```

After each doTurn function, the notifyObserver function will be called in the main function. After all 52 cards are used in the round, the score calculate will begin, there is a vector called scores records the historical score the player got. And a new score calculated by getScore() function (the getScore function visit the discard vector to calculate the score) will be add to the scores vector by addScore() function. And the outputs will be made.

```

107     for(int i = 0; i < 4; ++i) { // conclusion of each round
108         p[i].addScore(p[i].getScore());
109         if(p[i].getTotScore() >= 80) {
110             end_flag = false;
111         }
112         std::cout << "Player" << i + 1 << "'s discards:";
113         for(auto it : p[i].getDiscard()) std::cout << " " << it;
114         std::cout << std::endl << "Player" << i + 1 << "'s score:";
115         int sc = p[i].getTotScore() - p[i].getScore();
116         std::cout << " " << sc << " + " << p[i].getScore() << " = " << p[i].getTotScore();
117         std::cout << std::endl;
118     }

```

The end_flag records whether the game should be end. If at least one player's score is greater or equal to 80, it will becomes false. Which means that the game ends.

```

119     if(!end_flag) { // find the winner of the game
120         int min_score = 999999;
121         for(int i = 0; i < 4; ++i) {
122             min_score = my_min(min_score, p[i].getTotScore());
123         }
124         for(int i = 0; i < 4; ++i) {
125             if(p[i].getTotScore() == min_score)
126                 std::cout << "Player" << i + 1 << " wins!" << std::endl;
127         }
128     }

```

The winner information will follow it immediately. Then the program terminates.

Sample
With seed 28

Input:

h

h

c

c

play 7S

discard AD

play 8H

ragequit

play 9H

discard 2H

play 4H

play QH

deck

discard 3D

discard 4D

discard 3S

discard 4S

discard 8S

discard 9D

discard QD

play 7D

play 8D

play 6H

play 2D

play JH

play 7C

play 8C

play 3C

play 9C

play TC

discard 9S

discard TS

discard JD

Output:

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

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

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

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

A new round begins. It's Player1's turn to play.

Cards on the table:

Clubs:

Diamonds:

Hearts:

Spades:

Your hand: 4D 3D 8S 2H 8H 7S QD 9H QH 4S 9D 3S 4H

Legal plays: 7S

Player1 plays 7S.

Cards on the table:

Clubs:

Diamonds:

Hearts:

Spades: 7

Your hand: JC 3H 8D 2D KD 2C TH AD 9S 6S KS 6H 5H

Legal plays:

Player 2 discards AD.

Cards on the table:

Clubs:

Diamonds:

Hearts:

Spades: 7

Your hand: 7H JH 2S JD 4C 5D AH TS 8C QC 6D 9C QS

Legal plays: 7H

Player3 plays 7H.

Cards on the table:

Clubs:

Diamonds:

Hearts: 7

Spades: 7

Your hand: AS 5C 7C 3C KC 6C 7D TC JS KH AC 5S TD

Legal plays: 7C 7D

Player4 plays 7C.

Cards on the table:

Clubs: 7

Diamonds:

Hearts: 7

Spades: 7

Your hand: 4D 3D 8S 2H 8H QD 9H QH 4S 9D 3S 4H

Legal plays: 8H

Player1 plays 8H.

Cards on the table:

Clubs: 7

Diamonds:

Hearts: 7 8

Spades: 7

Your hand: JC 3H 8D 2D KD 2C TH 9S 6S KS 6H 5H

Legal plays: 6H

Player 2 ragequits. A computer will now take over.

Player2 plays 6H.

Cards on the table:

Clubs: 7

Diamonds:

Hearts: 6 7 8

Spades: 7

Your hand: JH 2S JD 4C 5D AH TS 8C QC 6D 9C QS

Legal plays: 8C

Player3 plays 8C.

Cards on the table:

Clubs: 7 8

Diamonds:

Hearts: 6 7 8

Spades: 7

Your hand: AS 5C 3C KC 6C 7D TC JS KH AC 5S TD

Legal plays: 6C 7D

Player4 plays 6C.

Cards on the table:

Clubs: 6 7 8

Diamonds:

Hearts: 6 7 8

Spades: 7

Your hand: 4D 3D 8S 2H QD 9H QH 4S 9D 3S 4H

Legal plays: 9H

Player1 plays 9H.

Cards on the table:

Clubs: 6 7 8

Diamonds:

Hearts: 6 7 8 9

Spades: 7

Your hand: JC 3H 8D 2D KD 2C TH 9S 6S KS 5H

Legal plays: TH 5H

Player2 plays TH.

Cards on the table:

Clubs: 6 7 8

Diamonds:

Hearts: 6 7 8 9 T

Spades: 7

Your hand: JH 2S JD 4C 5D AH TS QC 6D 9C QS

Legal plays: 9C JH

Player3 plays 9C.

Cards on the table:

Clubs: 6 7 8 9

Diamonds:

Hearts: 6 7 8 9 T

Spades: 7

Your hand: AS 5C 3C KC 7D TC JS KH AC 5S TD

Legal plays: 5C TC 7D

Player4 plays 5C.

Cards on the table:

Clubs: 5 6 7 8 9

Diamonds:

Hearts: 6 7 8 9 T

Spades: 7

Your hand: 4D 3D 8S 2H QD QH 4S 9D 3S 4H

Legal plays:

Player 1 discards 2H.

Cards on the table:

Clubs: 5 6 7 8 9

Diamonds:

Hearts: 6 7 8 9 T

Spades: 7

Your hand: JC 3H 8D 2D KD 2C 9S 6S KS 5H

Legal plays: 5H

Player2 plays 5H.

Cards on the table:

Clubs: 5 6 7 8 9

Diamonds:

Hearts: 5 6 7 8 9 T

Spades: 7

Your hand: JH 2S JD 4C 5D AH TS QC 6D QS

Legal plays: 4C JH

Player3 plays 4C.

Cards on the table:

Clubs: 4 5 6 7 8 9

Diamonds:

Hearts: 5 6 7 8 9 T

Spades: 7

Your hand: AS 3C KC 7D TC JS KH AC 5S TD

Legal plays: 3C TC 7D

Player4 plays 3C.

Cards on the table:

Clubs: 3 4 5 6 7 8 9

Diamonds:

Hearts: 5 6 7 8 9 T

Spades: 7

Your hand: 4D 3D 8S QD QH 4S 9D 3S 4H

Legal plays: 4H

Player1 plays 4H.

Cards on the table:

Clubs: 3 4 5 6 7 8 9

Diamonds:

Hearts: 4 5 6 7 8 9 T

Spades: 7

Your hand: JC 3H 8D 2D KD 2C 9S 6S KS

Legal plays: 2C 3H

Player2 plays 2C.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9

Diamonds:

Hearts: 4 5 6 7 8 9 T

Spades: 7

Your hand: JH 2S JD 5D AH TS QC 6D QS

Legal plays: JH

Player3 plays JH.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9

Diamonds:

Hearts: 4 5 6 7 8 9 T J

Spades: 7

Your hand: AS KC 7D TC JS KH AC 5S TD

Legal plays: TC AC 7D

Player4 plays TC.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T

Diamonds:

Hearts: 4 5 6 7 8 9 T J

Spades: 7

Your hand: 4D 3D 8S QD QH 4S 9D 3S

Legal plays: QH

Player1 plays QH.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T

Diamonds:

Hearts: 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: JC 3H 8D 2D KD 9S 6S KS

Legal plays: JC 3H

Player2 plays JC.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T J

Diamonds:

Hearts: 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 2S JD 5D AH TS QC 6D QS

Legal plays: QC

Player3 plays QC.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T J Q

Diamonds:

Hearts: 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: AS KC 7D JS KH AC 5S TD

Legal plays: KC AC 7D KH

Player4 plays KC.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 4D 3D 8S QD 4S 9D 3S

Legal plays:

4D 3D 8S 2H 8H 7S QD 9H QH 4S 9D 3S 4H

JC 3H 8D 2D KD 2C TH AD 9S 6S KS 6H 5H

7H JH 2S JD 4C 5D AH TS 8C QC 6D 9C QS

AS 5C 7C 3C KC 6C 7D TC JS KH AC 5S TD

Player 1 discards 3D.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 3H 8D 2D KD 9S 6S KS

Legal plays: 3H

Player2 plays 3H.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 2S JD 5D AH TS 6D QS

Legal plays:

Player 3 discards 2S.

Cards on the table:

Clubs: 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: AS 7D JS KH AC 5S TD

Legal plays: AC 7D KH

Player4 plays AC.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 4D 8S QD 4S 9D 3S

Legal plays:

Player 1 discards 4D.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 8D 2D KD 9S 6S KS

Legal plays:

Player 2 discards 8D.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: JD 5D AH TS 6D QS

Legal plays:

Player 3 discards JD.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds:

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: AS 7D JS KH 5S TD

Legal plays: 7D KH

Player4 plays 7D.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 7

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 8S QD 4S 9D 3S

Legal plays:

Player 1 discards 3S.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 7

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 2D KD 9S 6S KS

Legal plays:

Player 2 discards 2D.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 7

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: 5D AH TS 6D QS

Legal plays: 6D

Player3 plays 6D.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 6 7

Hearts: 3 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: AS JS KH 5S TD

Legal plays: KH

Player4 plays KH.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 8S QD 4S 9D

Legal plays:

Player 1 discards 4S.

Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 6 7
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: KD 9S 6S KS

Legal plays:
Player 2 discards KD.
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 6 7
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: 5D AH TS QS

Legal plays: 5D
Player3 plays 5D.
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 5 6 7
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: AS JS 5S TD

Legal plays:
Player 4 discards AS.
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 5 6 7
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: 8S QD 9D

Legal plays:
Player 1 discards 8S.
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 5 6 7
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: 9S 6S KS

Legal plays:
Player 2 discards 9S.
Cards on the table:
Clubs: A 2 3 4 5 6 7 8 9 T J Q K
Diamonds: 5 6 7
Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: AH TS QS

Legal plays:

Player 3 discards AH.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: JS 5S TD

Legal plays:

Player 4 discards JS.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: QD 9D

Legal plays:

Player 1 discards 9D.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 6S KS

Legal plays:

Player 2 discards 6S.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TS QS

Legal plays:

Player 3 discards TS.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 5S TD

Legal plays:

Player 4 discards 5S.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: QD

Legal plays:

Player 1 discards QD.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: KS

Legal plays:

Player 2 discards KS.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: QS

Legal plays:

Player 3 discards QS.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q K

Diamonds: 5 6 7

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TD

Legal plays:

Player 4 discards TD.

Player1's discards: 2H 3D 4D 3S 4S 8S 9D QD

Player1's score: $0 + 45 = 45$

Player2's discards: AD 8D 2D KD 9S 6S KS

Player2's score: $0 + 52 = 52$

Player3's discards: 2S JD AH TS QS

Player3's score: $0 + 36 = 36$

Player4's discards: AS JS 5S TD

Player4's score: $0 + 27 = 27$

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

Cards on the table:

Clubs:

Diamonds:

Hearts:

Spades:

Your hand: AS 8H QD 8S 4H 7S TH 4S AC QS 4D KC 6S

Legal plays: 7S

Player4 plays 7S

Cards on the table:

Clubs:

Diamonds:

Hearts:

Spades: 7

Your hand: 2D 8D TC JH TS 7D 6H 8C 9C 3C 9S 7C JD

Legal plays: 7C 7D

Player1 plays 7D.

Cards on the table:

Clubs:

Diamonds: 7

Hearts:

Spades: 7

Your hand: 9D 2S AD 3H 5H 3D QC JC JS 6C TD 5D 4C

Legal plays:

Player 2 discards 9D.

Cards on the table:

Clubs:

Diamonds: 7

Hearts:

Spades: 7

Your hand: AH 6D 5C KS 2H KD 7H KH 9H 3S 2C QH 5S

Legal plays: 6D 7H

Player3 plays 6D.

Cards on the table:

Clubs:

Diamonds: 6 7

Hearts:

Spades: 7

Your hand: AS 8H QD 8S 4H TH 4S AC QS 4D KC 6S

Legal plays:

Player 4 discards AS.

Cards on the table:

Clubs:

Diamonds: 6 7

Hearts:

Spades: 7

Your hand: 2D 8D TC JH TS 6H 8C 9C 3C 9S 7C JD

Legal plays: 7C 8D

Player1 plays 8D.

Cards on the table:

Clubs:

Diamonds: 6 7 8

Hearts:

Spades: 7

Your hand: 2S AD 3H 5H 3D QC JC JS 6C TD 5D 4C

Legal plays: 5D

Player2 plays 5D.

Cards on the table:

Clubs:

Diamonds: 5 6 7 8

Hearts:

Spades: 7

Your hand: AH 5C KS 2H KD 7H KH 9H 3S 2C QH 5S

Legal plays: 7H

Player3 plays 7H.

Cards on the table:

Clubs:

Diamonds: 5 6 7 8

Hearts: 7

Spades: 7

Your hand: 8H QD 8S 4H TH 4S AC QS 4D KC 6S

Legal plays: 4D 8H

Player4 plays 4D.

Cards on the table:

Clubs:

Diamonds: 4 5 6 7 8

Hearts: 7

Spades: 7

Your hand: 2D TC JH TS 6H 8C 9C 3C 9S 7C JD

Legal plays: 7C 6H

Player1 plays 6H.

Cards on the table:

Clubs:

Diamonds: 4 5 6 7 8

Hearts: 6 7

Spades: 7

Your hand: 2S AD 3H 5H 3D QC JC JS 6C TD 4C

Legal plays: 3D 5H

Player2 plays 3D.

Cards on the table:

Clubs:

Diamonds: 3 4 5 6 7 8

Hearts: 6 7

Spades: 7

Your hand: AH 5C KS 2H KD KH 9H 3S 2C QH 5S

Legal plays:

Player 3 discards AH.

Cards on the table:

Clubs:

Diamonds: 3 4 5 6 7 8

Hearts: 6 7

Spades: 7

Your hand: 8H QD 8S 4H TH 4S AC QS KC 6S

Legal plays: 8H

Player4 plays 8H.

Cards on the table:

Clubs:

Diamonds: 3 4 5 6 7 8

Hearts: 6 7 8

Spades: 7

Your hand: 2D TC JH TS 8C 9C 3C 9S 7C JD

Legal plays: 7C 2D

Player1 plays 2D.

Cards on the table:

Clubs:

Diamonds: 2 3 4 5 6 7 8

Hearts: 6 7 8

Spades: 7

Your hand: 2S AD 3H 5H QC JC JS 6C TD 4C

Legal plays: AD 5H

Player2 plays AD.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 6 7 8

Spades: 7

Your hand: 5C KS 2H KD KH 9H 3S 2C QH 5S

Legal plays: 9H

Player3 plays 9H.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 6 7 8 9

Spades: 7

Your hand: QD 8S 4H TH 4S AC QS KC 6S

Legal plays: TH

Player4 plays TH.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 6 7 8 9 T

Spades: 7

Your hand: TC JH TS 8C 9C 3C 9S 7C JD

Legal plays: 7C JH

Player1 plays JH.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 6 7 8 9 T J

Spades: 7

Your hand: 2S 3H 5H QC JC JS 6C TD 4C

Legal plays: 5H

Player2 plays 5H.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 5 6 7 8 9 T J

Spades: 7

Your hand: 5C KS 2H KD KH 3S 2C QH 5S

Legal plays: QH

Player3 plays QH.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 5 6 7 8 9 T J Q

Spades: 7

Your hand: QD 8S 4H 4S AC QS KC 6S

Legal plays: 4H

Player4 plays 4H.

Cards on the table:

Clubs:

Diamonds: A 2 3 4 5 6 7 8

Hearts: 4 5 6 7 8 9 T J Q

Spades: 7

Your hand: TC TS 8C 9C 3C 9S 7C JD

Legal plays: 7C

Player1 plays 7C.

Cards on the table:

Clubs: 7

Diamonds: A 2 3 4 5 6 7 8

Hearts: 4 5 6 7 8 9 T J Q
Spades: 7
Your hand: 2S 3H QC JC JS 6C TD 4C
Legal plays: 6C 3H
Player2 plays 6C.
Cards on the table:
Clubs: 6 7
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q
Spades: 7
Your hand: 5C KS 2H KD KH 3S 2C 5S
Legal plays: 5C KH
Player3 plays 5C.
Cards on the table:
Clubs: 5 6 7
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q
Spades: 7
Your hand: QD 8S 4S AC QS KC 6S
Legal plays:
Player 4 discards QD.
Cards on the table:
Clubs: 5 6 7
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q
Spades: 7
Your hand: TC TS 8C 9C 3C 9S JD
Legal plays: 8C
Player1 plays 8C.
Cards on the table:
Clubs: 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q
Spades: 7
Your hand: 2S 3H QC JC JS TD 4C
Legal plays: 4C 3H
Player2 plays 4C.
Cards on the table:
Clubs: 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q
Spades: 7
Your hand: KS 2H KD KH 3S 2C 5S
Legal plays: KH

Player3 plays KH.
Cards on the table:
Clubs: 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: 8S 4S AC QS KC 6S

Legal plays:
Player 4 discards 8S.
Cards on the table:
Clubs: 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: TC TS 9C 3C 9S JD

Legal plays: 9C 3C
Player1 plays 3C.
Cards on the table:
Clubs: 3 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: 2S 3H QC JC JS TD

Legal plays: 3H
Player2 plays 3H.
Cards on the table:
Clubs: 3 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: KS 2H KD 3S 2C 5S

Legal plays: 2C 2H
Player3 plays 2C.
Cards on the table:
Clubs: 2 3 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8
Hearts: 3 4 5 6 7 8 9 T J Q K
Spades: 7
Your hand: 4S AC QS KC 6S

Legal plays: AC
Player4 plays AC.
Cards on the table:
Clubs: A 2 3 4 5 6 7 8
Diamonds: A 2 3 4 5 6 7 8

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TC TS 9C 9S JD

Legal plays: 9C

Player1 plays 9C.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9

Diamonds: A 2 3 4 5 6 7 8

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 2S QC JC JS TD

Legal plays:

Player 2 discards 2S.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9

Diamonds: A 2 3 4 5 6 7 8

Hearts: 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: KS 2H KD 3S 5S

Legal plays: 2H

Player3 plays 2H.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 4S QS KC 6S

Legal plays:

Player 4 discards 4S.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TC TS 9S JD

Legal plays: TC

Player1 plays TC.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: QC JC JS TD

Legal plays: JC

Player2 plays JC.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: KS KD 3S 5S

Legal plays:

Player 3 discards KS.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: QS KC 6S

Legal plays:

Player 4 discards QS.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TS 9S JD

Legal plays:

Player 1 discards 9S.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: QC JS TD

Legal plays: QC

Player2 plays QC.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: KD 3S 5S

Legal plays:

Player 3 discards KD.

Cards on the table:

Clubs: A 2 3 4 5 6 7 8 9 T J Q

Diamonds: A 2 3 4 5 6 7 8

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: KC 6S

Legal plays: KC

Player4 plays KC.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TS JD

Legal plays:

Player 1 discards TS.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: JS TD

Legal plays:

Player 2 discards JS.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 3S 5S

Legal plays:

Player 3 discards 3S.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 6S

Legal plays:

Player 4 discards 6S.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: JD

Legal plays:

Player 1 discards JD.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: TD

Legal plays:

Player 2 discards TD.

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

Hearts: 2 3 4 5 6 7 8 9 T J Q K

Spades: 7

Your hand: 5S

Legal plays:

Player 3 discards 5S.

Player1's discards: 9S TS JD

Player1's score: $45 + 30 = 75$

Player2's discards: 9D 2S JS TD

Player2's score: $52 + 32 = 84$

Player3's discards: AH KS KD 3S 5S

Player3's score: $36 + 35 = 71$

Player4's discards: AS QD 8S 4S QS 6S

Player4's score: $27 + 43 = 70$

Player4 wins!