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#include <bits/stdc++.h>
using namespace std;
class Poker{
public:
    int bet;
    int chips;
    int total_hands;
    int total_wins;
    int total_loss;
    Poker() {
        chips=100;
        total_hands = 0;
        total_wins = 0;
        total_loss = 0;
        bet=0;
    }
    string randomCard() {
        srand(time(NULL));
        int number = rand() % 9 + 2;
        stringstream its;
        its<<number;
        string suit[4]={"C","S","H","D"};
        int suit_index= rand() % 4;
        string card = its.str()+suit[suit_index];
        return card;
    }
    vector<string> hand() {
        total_hands++;
        vector<string> cards;
        for(int i=0;i<4;i++){
            while(1){
                string card=randomCard();
                if(find(cards.begin(),cards.end(),card) == cards.end()){
                    cards.push_back(card);
                    break;
                }
            }
        }
        for(int i=0;i<cards.size();i++){
            cout<<cards[i]<<" ";
        }
        cout<<endl;
        return cards;
    }
    void checkHand(vector<string> hand){
        vector<int> number;
        vector<char> suit;
        for(int i=0;i<4;i++){
            string number_string=hand[i].substr(0,hand[i].length()-1);
            number.push_back(atoi(number_string.c_str()));
            suit.push_back(hand[i][hand[i].length()-1]);
        }
        sort(number.begin(), number.end());
        if(number[0]==number[1] && number[1]==number[2] && number[2]==number[3]){
            cout<<"Congrats: You got a Four of a kind and have won $400"<<endl;
            total_wins++;
            chips+=400;
        }
        else if(number[0]==number[1]-1 && number[1]==number[2]-1 && number[2]==number[3]-1){
            if(suit[0]==suit[1] && suit[1]==suit[2] && suit[2]==suit[3]){
                cout<<"Congrats: You got a Straight Flush and have won $300"<<endl;
                total_wins++;
                chips+=300;
            }
            else{
                cout<<"Congrats: You got a Flush and have won $250"<<endl;
                total_wins++;
                chips+=250;
            }
        }
        else if((number[0]==number[1] && number[1]==number[2]) ||
                (number[1]==number[2] && number[2]==number[3])){
            cout<<"Congrats: You got a Three of a kind and have won $150"<<endl;
            total_wins++;
            chips+=150;
        }
        else if(number[0]==number[1] && number[2]==number[3]){
            cout<<"Congrats: You got a Two Pairs and have won $100"<<endl;
            total_wins++;
            chips+=100;
        }
        else if((number[0]==number[1]) || (number[1]==number[2]) || (number[2]==number[3])){
            cout<<"Congrats: You got a Two of a kind and have doubled your bet"<<endl;
            total_wins++;
        }
    }
};
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        chips+=bet;
        chips+=bet;
    }
    else{
        cout<<"Sorry: You got a Bubkiss and have lost $"<<bet<<endl;
        total_loss++;
        chips-=bet;
    }
}
};

int main(){
    cout<<"Welcome to single player Poker game"<<endl;
    cout<<"Your initial bank roll is $100.00"<<endl<<endl;
    cout<<"====="<<endl;
    Poker poker;
    string y;
    while(1){
        cout<<"Play a hand [y / n]? ";
        cin>>y;
        if(y=="y" || y=="n"){
            break;
        }
        cout<<"Invalid input, should be y or n"<<endl;
    }
    while(y=="y"){
        cout<<endl<<"Place your bet [1, "<<poker.chips<<]: ";
        cin>>poker.bet;
        if(poker.bet==0){
            cout<<poker.bet<<" Invalid input, cannot bet 0 chips"<<endl;
            continue;
        }
        if(poker.bet>poker.chips){
            cout<<poker.bet<<" Invalid input, the input should be between 1 and "<<poker.chips<<endl;
            continue;
        }
    }
    cout<<"... Shuffling Deck ..."<<endl;
    cout<<"Let the cards fall where they may ..."<<endl;
    vector<string> hand=poker.hand();
    poker.checkHand(hand);
    cout<<endl;
    if(poker.chips<=0){
        cout<<"Your balance is $0"<<endl;
        break;
    }
    while(1){
        cout<<"Play a hand [y / n]? ";
        cin>>y;
        if(y=="y" || y=="n"){
            break;
        }
        cout<<"Invalid input, should be y or n"<<endl;
    }
}

cout<<endl<<"====="<<endl;
cout<<"Thanks for playing ..."<<endl;
cout<<"You playes a total of "<<poker.total_hands<<" hands"<<endl;
cout<<"Of which, you won "<<poker.total_wins<<endl;
cout<<"And you lost "<<poker.total_loss<<endl;
cout<<"But in the end you won $"<<poker.chips-100;
}

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