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# Complex Python program
# Program to play Blackjack
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# import modules
import sys
import random
from random import choice
from copy import deepcopy


def play_game():
    """
    Maintains a bankroll for the player,
       and keeps track of the number of  games
       in outside files.
       Asks the player to place a bet.
    Deals a hand of blackjack to the player and the dealer,
       asks if the player wants to hit or stand,
       hits the dealer if the dealer total is < 17,
       calculates a winner based on  the rules of blackjack,
       and adjusts the player's bankroll.
    """

    f = open('count.txt', 'r')  # Open file for reading
    global count
    for line in f:
       count = int(line)
    f.close()

    count += 1

    play_again = 'n'

    print "Welcome to BlackJack"
    # make a deck of cards
    deck = ['A', 'A', 'A', 'A', 2, 2, 2, 2, 3, 3, 3, 3, 4, 4, 4, 4, 5, 5,
            5, 5, 6, 6, 6, 6, 7, 7, 7, 7, 8, 8, 8, 8, 9, 9, 9, 9, 'J',
            'J', 'J', 'J', 'Q', 'Q', 'Q', 'Q', 'K', 'K', 'K', 'K']

    f = open('bank.txt', 'r')  # Open file for reading
    global money
    for line in f:
       money = int(line)
    f.close()

    raw_input("Press enter to begin")

    print "You have $", money, "in your bank."
    print "This is game", count

    # set the bet
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bet = raw_input("How much would you like to bet?")
if bet == "":
    bet = 0
    print "You are betting $0 on this hand."
else:
    bet = int(bet)
    print "You are betting $", bet, "on this hand"

# shuffle the cards
random.shuffle(deck)

# deal the initial hands
c1 = choice(deck)
deck.remove(c1)

c2 = choice(deck)
deck.remove(c2)

player_cards = [c1, c2]

c3 = choice(deck)
deck.remove(c3)

c4 = choice(deck)
deck.remove(c4)

# show cards
dealer_cards = [c3, c4]

def show_dealer_cards(cards):
    """
    reveal all but the first of the dealer's cards
    """

    global visible_cards
    visible_cards = deepcopy(cards)
    visible_cards.remove(c3)

show_dealer_cards(dealer_cards)

def total(hand):
    """
    calculate the total of the cards
    """

    # create a copy of the hand to be totalled
    subhand = deepcopy(hand)

    # count the number of face cards
    # and remove them from the  copy of the hand
    # so that a sum of integer cards can be calculated
    kings = subhand.count('K')
    while 'K' in subhand:
        subhand.remove('K')
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    queens = subhand.count('Q')
    while 'Q' in subhand:
        subhand.remove('Q')
    jacks = subhand.count('J')
    while 'J' in subhand:
        subhand.remove('J')
    subtotal = int(10 * kings) + int(10 * queens) + int(10 * jacks)

    # count the number  of aces
    # and  remove them from the copy of the hand
    # so that a sum of the integer cards can be calculated
    aces = subhand.count('A')
    while 'A' in subhand:
        subhand.remove('A')

    # calculate the sum of any integer cards in the hand
    if not subhand:
        b = 0
    elif len(subhand) > 1:
        b = sum(subhand)
    else:
        b = subhand[0]

    total = b + subtotal

    # add in the aces: Ace = 11 if the total is <= 10
    # else Ace = 1
    while aces > 0 and total <= 10:
            total += 11
            aces -= 1
    while aces > 0 and total > 10:
            total += 1
            aces -= 1
    return total

player_total = total(player_cards)
print "You were dealt", player_cards, "with a total value", player_total,
print "\n"

dealer_total = total(dealer_cards)
print "The dealer has a hidden card and ", visible_cards,
print "\n"

deal = " "
# ask the player to choose hit or stand
# and deal a card to the dealer if
# the dealer's cards total less than 17
while player_total < 21 and dealer_total < 17 and "s" not in deal:
    deal = raw_input("Hit or Stand (h or s): ").lower()
    if "h" in deal:
        c5 = choice(deck)
        deck.remove(c5)
        player_cards.append(c5)
        player_total = total(player_cards)
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        print "You were dealt a ", c5, "for a total of ", player_total,
        print "\n"
        c6 = choice(deck)
        deck.remove(c6)
        dealer_cards.append(c6)
        show_dealer_cards(dealer_cards)
        print "The dealer was dealt", c6, "\n"
        print "The dealer now has a hidden card and", visible_cards
        dealer_total = total(dealer_cards)

# ask the player  to hit or stand
# even if the dealer's cards total > 17
while player_total < 21 and "s" not in deal:
    deal = raw_input("Hit or Stand (h or s): ").lower()
    if "h" in deal:
        c5 = choice(deck)
        deck.remove(c5)
        player_cards.append(c5)
        print "You were dealt", c5,
        player_total = total(player_cards)
        print "You were dealt a ", c5, "for a total of ", player_total,
        print "\n"
    elif "s" in deal:
        print "Your total is ", player_total,
        print "\n"

# deal to the dealer if total <17
while dealer_total < 17:
    c6 = choice(deck)
    deck.remove(c6)
    dealer_cards.append(c6)
    show_dealer_cards(dealer_cards)
    print "The dealer was dealt", c6, "\n"
    print "The dealer now has a hidden card and", visible_cards
    dealer_total = total(dealer_cards)

def play_again():
    """
    Updates the bankroll and number of games
    and asks if the player wants to play again
    """

    f = open('bank.txt', 'w')  # Open file for writing
    global money
    f.write(str(money))
    f.close()

    f = open('count.txt', 'w')  # Open file for writing
    global count
    f.write(str(count))
    f.close()

    play_again = raw_input("Would you like to play again? (y or n): ")
    play_again = play_again.lower()
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    while play_again == 'y':
        play_game()
    else:
        print "See ya later alligator \n" "Your total bank is $", money
        sys.exit()

# define lose/win and draw functions
def lose():
    """
    The player has lost
    """

    print "You lose."
    global money
    money = money - bet
    print "You now have $ ", money, "in your bank."
    play_again()

def win():
    """
    The player has won
    """

    print "You win!" "\n"
    global money
    money = money + bet
    print "You now have $ ", money, "in your bank."
    play_again()

def draw():
    """
    It is a tie
    """

    print "Your total is ", player_total, "; the dealer's total is", dealer_total, "\n"
    print "Draw." "\n"
    global money
    print "You now have $ ", money, "in your bank."
    play_again()

def dealer_loses():
    """
    The dealer has lost
    """

    print "Dealer's total is ", dealer_total, "\n"
    print "Dealer loses"
    global money
    money = money + bet
    print "You now have $ ", money, "in your bank."
    play_again()

def blackjack():
    """
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        The player has Blackjack!
        """

        print "Blackjack!" "\n""You win!" "\n"
        global money
        money = money + bet
        print "You now have $ ", money, "in your bank."
        play_again()

    def win_or_lose():
        """
        Find the winner
        """

        print "The dealer's cards are", dealer_cards, "totalling", dealer_total
        print "Your cards are", player_cards, "totalling", player_total

        if player_total == 21:
            blackjack()

        if player_total > 21 and dealer_total > 21:
            draw()

        elif player_total > 21:
            lose()

        elif dealer_total > 21:
            dealer_loses()

        elif dealer_total < player_total:
            win()

        elif dealer_total > player_total:
            lose()

        elif dealer_total == player_total:
            draw()

    win_or_lose()

play_game()
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