Mod 02 Python Lists & Advanced Flow Control Homework

SCRIPTING ESSENTIALS

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Read through the entire homework problem before starting.

Dealing Cards

I made you a list! Well, a list of lists. It/they represent a deck of cards. I want you to make a function that, when called, returns one card from the deck. The card_deck list has four lists inside, one for each suit of a card deck (spades, diamonds, clubs and hearts). Each of those "inner" lists has 13 cards (index 0 through 12).

Rules:

- When a card is printed from the function it is taken out of the deck
- If the deck is empty print 'There are no more cards' from the function
- Every call to the function returns one card.
- A fresh deck can be made at any time
- The function is called by asking the user how many cards they want to draw. One card is printed in the function each time it is called.
- After drawing the user's cards, ask if they want to draw more cards from that deck, draw from a new deck (if so, then ask how many cards), or quit.

Dealing Cards

Quality checks:

- If I start by drawing 52 cards I should get every card in the deck without duplicates
- If I then draw one more card I should get 'There are no more cards'
- If a non-integer is entered for the number of desired cards I should return a helpful message and ask again.

Notes:

- Get the starter script from the SFTP server at 192.168.1.1
  - Mod_02_hwstarter.py
  - Remember that unless you lcd Desktop for each session your file will be saved in C:\Users\Student
- Rather than make one long list I used \ to break it into readable lines. Always do this with your code for readability
- Comment your code, starting with your name and "Mod 02 Homework Script"
- Use good variable names in the proper Python style
  - a_good_variable_name

```
card_deck = [['Ace of Spades', 'King of Spades', \
        'Queen of Spades', 'Jack of Spades', \
        '10 of Spades', '9 of Spades', \
        '8 of Spades', '7 of Spades', \
        '6 of Spades', '5 of Spades', \
        '4 of Spades', '3 of Spades', \
        '2 of Spades'], \
        ['Ace of Diamonds', 'King of Diamonds', \
        'Queen of Diamonds', 'Jack of Diamonds', \
        '10 of Diamonds', '9 of Diamonds', \
        '8 of Diamonds', '7 of Diamonds', \
        '6 of Diamonds', '5 of Diamonds', \
        '4 of Diamonds', '3 of Diamonds', \
        '2 of Diamonds'],\
        ['Ace of Clubs', 'King of Clubs', \
        'Queen of Clubs', 'Jack of Clubs', \
        '10 of Clubs', '9 of Clubs', \
        '8 of Clubs', '7 of Clubs', \
        '6 of Clubs', '5 of Clubs', \
        '4 of Clubs', '3 of Clubs', \
        '2 of Clubs'],\
        ['Ace of Hearts', 'King of Hearts', \
        'Queen of Hearts', 'Jack of Hearts', \
        '10 of Hearts', '9 of Hearts', \
        '8 of Hearts', '7 of Hearts', \
        '6 of Hearts', '5 of Hearts', \
        '4 of Hearts', '3 of Hearts', \
        '2 of Hearts']]
```

This is in the starter script so you don’t have to type it out.

Guidance

You will need random and copy

Paste my list of lists into your script after your import

Make a deck (a list) by copying (deeply) my card_deck. **Don’t ever manipulate my deck directly.** This will be the game deck.

We can get a new game deck at any time by doing the copy again.

Guidance

Your function:

- Takes no values and returns no values
- In one while statement
  - Check to see if your game deck is empty (length is zero)
    - If so, tell the user that there are no more cards and break out of the while, effectively ending the function
      - You can else: continue or just not do an else
  - Populate a variable with a random number between 0 and the current length of the game deck (minus 1). This will choose a random suit (hearts, diamonds, etc) from the suits that are still populated with cards.
  - Check to see if that random suit is empty (length is zero)
    - If so, delete that suit and continue, returning control to the top of the while statement
      - You would delete game_deck[suit number]
  - Populate a variable with a random number between 0 and the current length of the randomly chosen suit (minus one)
  - Print that card
    - Game_deck[suit number][card number]
  - Delete that card from the current game deck
  - break

Guidance

Your body:

- Let the user know the deck has been shuffled
- Inside another while True:
  - Ask how many cards the user wants to draw
    - Use error checking to make sure they gave an integer. If not, warn them and continue. Use try/except and try casting the user input to an integer int().
  - Use a For statement to call the card drawing function as many times as the user requested
  - Give the user the choices to draw again from the same deck, shuffle and draw or quit
    - Get the input, use IF/ELIF/ELSE
    - If they quit, break
    - If they want to shuffle, deep copy the game deck from the original deck again, let them know it has been shuffled, then continue
    - If they quit, just continue
- After the while, use one input thanking the user for playing and telling them to hit enter to exit the script.

What's the logic in the function?

Keep in mind that it just returns one card out of the game deck. And the game deck is just a copy of our original deck.

See if the game deck is empty. If so, return the message that there are no more cards in the deck.

If there are cards in the deck, pick a random suit from the suits remaining. See if it has any cards. If not, delete the suit and start over. This repeats the check to see if the game deck is empty but we won't worry about that bit of inefficiency.

Once we have a random suit picked out, we want to pick a random card from the cards still in that suit. We will then print out that cards, add it to our list of cards drawn and delete it from the game deck. Then we will exit the function.

All this happens for each time the user draws a card in the body of the script.

Finishing Up

Comment your code. Run your code in IDLE and in the command shell. Remember that your script must run to get any points. And using commands that we haven't covered yet in class will negate your score.

I will also put up a short video of my script in action. Your script must look and behave the same as my script.