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PyDealer is a simple to use Python package for “simulating” decks of standard playing cards (also known as a French deck). PyDealer lets you easily create Deck instances, each containing a full 52 card deck of playing cards. Each card is a separate Card instance, with a name, value, suit, and abbreviation. There is also the Stack class, which is useful for creating hands, or discard piles, etc. It is the backbone of the PyDealer package, and actually the Deck class is just a subclass of the Stack class.

PyDealer could possibly be used as part of a CLI (command line interface) card-based game, or even a graphical game as well, I suppose. It may also be of interest to beginner Python programmers, since it’s a relatively simple package, which I created as a way to learn Python, packaging, testing, documentation (Sphinx), etc. I even ended up learning how to use Git a bit, which I must say was slightly frustrating at first. This package has taught me a lot, and maybe someone else can benefit from it as well. Or maybe not. Either way, here it is.
Quick Usage Example

Here is a quick example, using IDLE, demonstrating how to construct a new Deck instance, representing a full French deck of cards, as well as how to shuffle the deck, and deal some cards (7 of them) from it, to a hand. We’ll then sort the hand, and print a listing of its contents, in a human readable way, with a simple print statement.

```python
>>> import pydealer
>>> deck = pydealer.Deck()
>>> deck.shuffle()
>>> hand = deck.deal(7)
>>> hand.sort()
>>> print(hand)
2 of Diamonds
5 of Hearts
9 of Hearts
9 of Spades
Jack of Spades
King of Clubs
Ace of Clubs
```
2.1 Getting Started

This is an overview of all of the methods/functions that users will likely use most.

2.1.1 Install/Uninstall with pip

I recommend downloading and installing pip, if you haven’t already, and using that to install PyDealer, from the Python Package Index.
Enter one of the following commands into your *nix Bash console, Windows Command Prompt, etc. (after installing pip).

**Install**

```
$pip install pydealer
```

**Update**

```
$pip install pydealer -U
```

**Uninstall**

```
$pip uninstall pydealer
```

## 2.1.2 Import PyDealer

I’m sure most of you know how this is done already, but for those that don’t, here is how you import pydealer.

```
# Import PyDealer
import pydealer

# I, personally, prefer to import PyDealer with a shorter name:
# import pydealer as pd

# I also like to alias the utility functions:
# import pydealer.utils as utils
```

### Import Specific Classes/Functions

You can, of course also just import the specific classes/functions that you need.

```
# Import the base classes:
from pydealer import { Card, Deck, Stack }

# Import specific utility functions:
from pydealer.utils import { build_cards, compare_stacks, check_sorted
  # And/or any other functions you wish to import
}
```
2.1.3 Stack/Deck Manipulation

Construct a Deck

Constructing a new, full deck of cards is about as simple as it gets, but let’s just get it out of the way, so I don’t have to explain it in every subsequent example.

```python
import pydealer

deck = pydealer.Deck()
```

Set Rank Dict to Reference for Sorting, Etc.

You may supply a new Deck/Stack instance with a rank dict, which it will refer to when sorting, etc. If none is provided, it defaults to `pydealer.const.DEFAULT_RANKS`.

```python
import pydealer
from pydealer.const import POKER_RANKS

deck = pydealer.Deck(ranks=POKER_RANKS)
```

You can, of course always change the rank dict after instantiation as well.

```python
deck.ranks = POKER_RANKS
```

Construct a Deck that Rebuilds when Empty

You can construct a deck that will rebuild itself when you have dealt all of the cards from it, and try to deal any more, with the `rebuild` argument.

```python
import pydealer

deck = pydealer.Deck(rebuild=True)
```

Construct an Empty Stack

Constructing a new, empty stack, for use as a hand, discard pile, etc., is as simple as constructing a deck.

```python
import pydealer

der = pydealer.Stack()
```
Shuffle a Stack/Deck

Shuffling is also simple, and done probably exactly how you might expect. Pretty much everything with PyDealer is simple, because it’s such a simple package.

```python
import pydealer
deck = pydealer.Deck()
# Shuffle the deck, in place.
deck.shuffle()
```

Sort a Stack/Deck

Sorting is also done like you might expect.

```python
import pydealer
deck = pydealer.Deck()
# Sort the deck, in place.
deck.sort()
```

Deal Cards from a Stack/Deck

In this example we will create a `Deck` instance, and then deal 7 cards from it.

```python
import pydealer
deck = pydealer.Deck()
# Deal some cards from the deck.
dealt_cards = deck.deal(7)
```

Add Cards to a Stack/Deck

Add to the Top

In this example we will create a `Deck` instance, representing a deck of cards, and a `Stack` instance, which will represent a hand. We will then deal 7 cards from the deck, and add them to the existing hand.

```python
import pydealer
deck = pydealer.Deck()
hand = pydealer.Stack()
dealt_cards = deck.deal(7)
# Add the cards to the top of the hand (Stack).
hand.add(dealt_cards)
```
If you don’t care where the dealt cards are placed in the Stack, or are just adding them to the top, you can just use the `+=` operand to add cards to the top of a Stack.

```
hand += deck.deal(7)
```

**Add to the Bottom**

You can also add cards to the bottom of a Stack/Deck as well, if that is preferred.

```
from pydealer.const import BOTTOM

# Note that the constant ''BOTTOM'' is just the string ''"bottom"''.
# The constant ''TOP'' is the string ''"top"''. This is the default value.
hand.add(dealt_cards, end=BOTTOM)
```

**Insert Card Into Position of a Stack/Deck**

You can also insert a card into any given position (indice) of the Stack/Deck.

```
# ''deck'' is a Deck instance, and ''card'' is a Card instance. ''20'' is
# the position (or indice) the card is inserted to.
dek.insert(card, 20)
```

**Insert List of Cards Into Position of a Stack/Deck**

You can also insert a card into any given position (indice) of the Stack/Deck.

```
# ''stack'' is a Stack instance, and ''cards'' is a list of Card instances,
# or a Stack/Deck instance. ''20'' is the position (or indice) the card is
# inserted into.
stack.insert_list(cards, 20)
```

**Retrieve a Card at a Given Stack/Deck Indice**

In this example we will retrieve (but not remove) the card at a given Deck indice (or position, if you prefer). You can access the cards in a PyDealer Stack or Deck instance just like you would access the items in a list or other sequence in Python.

```
import pydealer

deck = pydealer.Deck()

# Access the indice of the ''Deck'' instance.
card = deck[25]
```
Find Specific Card Locations in a Stack/Deck

Single Card

In this example we will search for a given card in the deck. Users can search using full card names, abbreviations, suits, or values. Just remember that `Deck.find` (and `Stack.find`) return the indices of the cards, not the cards themselves, and they always return a list, even if there is only one item in it.

```python
import pydealer

d = pydealer.Deck()

# Find the indice(s) of the Ace of Spades.
indices = d.find("Ace of Spades")
```

List of Cards

In this example we will search for a given list of cards in the deck. Users can search using full card names, abbreviations, suits, or values, or a mixture of any/all of those. Just remember that `Deck.find_list` (and `Stack.find_list`) return the indices of the cards, not the cards themselves, always return a list, even if there is only one item in it.

```python
import pydealer

d = pydealer.Deck()

# Construct a list of terms to search for.
terms = ["Ace of Spades", "QH", "2", "Clubs"]

# Find the indices of the cards matching the terms in the given list.
indices = d.find_list(terms)
```

Get & Remove Specific Cards from a Stack/Deck

You can get & remove specific cards from a `Stack` or `Deck` instance with a given full card name, abbreviation, suit, value, or indice.

Note that the `Stack` and `Deck` “get methods” always return a list, even if there is only one item in it. And also remember that unlike `Stack` and `Deck` “find methods”, which return indices, the `Stack` and `Deck` “get methods” return the card instances themselves.

Single Card

In this example we will retrieve and remove a given card from the deck. If there were more than one “Ace of Spades” in the deck, it would retrieve them all.

```python
import pydealer

d = pydealer.Deck()

# Get the card with the given name from the deck.
cards = d.get("Ace of Spades")
```
List of Cards

In this example we will retrieve and remove a given list of terms from the deck. For demonstration purposes, I am going to construct a mixed list of terms, including a full card name, abbreviation, face, suit, and indice, just to show that you can do that, if you really want to.

```python
import pydealer
deck = Deck()

# Construct a list of terms to search for.
terms = ["Queen of Hearts", "KD", "2", "Clubs", 25]

# Get the cards matching the terms and indices in the given list.
cards = deck.get_list(terms)
```

Empty a Stack/Deck

If, for some reason, you want to empty a Stack/Deck of it’s cards, you can use the `Stack.empty` method. This will remove all of the cards from the Stack/Deck and will also return them in a list.

```python
import pydealer
deck = pydealer.Deck()

deck.empty()

# Or if you would like to keep the emptied cards elsewhere:
cards = deck.empty()
```

2.1.4 Comparisons/Checks

Get the Size of a Stack/Deck

To get the number of cards in a Stack/Deck, simply access the `size` property. It’s the same as doing `len(deck)`, which you could also do.

```python
import pydealer
deck = pydealer.Deck()

deck_size = deck.size
```

Compare Two Stacks/Decks

Using the `compare_stacks()` function, you can compare two given `Stack` or `Deck` instances, checking whether or not they contain all of the same cards, based on card faces and suits, not card instance. This function does not take into account the ordering of either Stack/Deck.
import pydealer
from pydealer.utils import compare_stacks

delext_x = pydealer.Deck()
delext_y = pydealer.Deck()

result = compare_stacks(delext_x, delext_y)

If you care about the ordering of the Stack/Deck instances as well, you can simply use the == (or !=) operand. This is the same as using the compare_stacks() function, except it also takes into account the order of each Stack/Deck.

import pydealer
from pydealer.utils import compare_stacks

delext_x = pydealer.Deck()
delext_y = pydealer.Deck()

result = delext_x == delext_y

You can also, obviously, check whether two Stack/Deck are the same object, using is.

import pydealer
from pydealer.utils import compare_stacks

delext_x = pydealer.Deck()
delext_y = pydealer.Deck()

result = delext_x is delext_y

---

**Compare Two Cards**

You can compare two cards just as you would compare a couple of integers, using the standard operands (==, !=, >, >=, <, <=). By default, it will compare based on DEFAULT_RANKS.

import pydealer

deck = pydealer.Deck()

card_x = deck.deal()
card_y = deck.deal()

result = card_x == card_y
result = card_x != card_y
result = card_x > card_y
result = card_x >= card_y
result = card_x < card_y
result = card_x <= card_y

If you would prefer to compare using a different rank dictionary, you can use the comparison methods built into the card, and supply the dictionary.

import pydealer
from pydealer.const import POKER_RANKS

deck = pydealer.Deck()
card_x = deck.deal()
card_y = deck.deal()
result = card_x.eq(card_y, POKER_RANKS)  # ==
result = card_x.ne(card_y, POKER_RANKS)  # !=
result = card_x.gt(card_y, POKER_RANKS)  # >
result = card_x.ge(card_y, POKER_RANKS)  # >=
result = card_x.lt(card_y, POKER_RANKS)  # <
result = card_x.le(card_y, POKER_RANKS)  # <=

Check if a Stack/Deck is Sorted

Using the check_sorted() function, you can check to see if the cards in a given Stack/Deck or list are sorted.

```python
import pydealer
from pydealer.utils import check_sorted

deck = pydealer.Deck()
result = check_sorted(deck)
```

2.1.5 Defining New Rank Dictionaries

Defining your own rank dictionaries, for use with sorting functions/methods, etc., is straight forward.

Rank dictionaries are just nested dictionaries containing a "values" dict, which itself contains all of the card values, and/or a "suits" dict, which itself contains all of the card suits, and their associated values.

```python
# Define a new rank dict, 'new_ranks', with ranks for card faces only.
new_ranks = {
    "values": {
        "Ace": 13,
        "King": 12,
        "Queen": 11,
        "Jack": 10,
        "10": 9,
        "9": 8,
        "8": 7,
        "7": 6,
        "6": 5,
        "5": 4,
        "4": 3,
        "3": 2,
        "2": 1
    }
}

# Define a new rank dict, with ranks for card suits only.
new_ranks = {
    "suits": {
        "Spades": 4,
        "Hearts": 3,
    }
}
```
# Define a new rank dict, with both faces & suits.

```python
define_new_ranks = {
    "values": {
        "Ace": 13,
        "King": 12,
        "Queen": 11,
        "Jack": 10,
        "10": 9,
        "9": 8,
        "8": 7,
        "7": 6,
        "6": 5,
        "5": 4,
        "4": 3,
        "3": 2,
        "2": 1
    },
    "suits": {
        "Spades": 4,
        "Hearts": 3,
        "Clubs": 2,
        "Diamonds": 1
    }
}
```

## 2.2 API Documentation

This is the PyDealer API documentation. It contains the documentation extracted from the docstrings of the various classes, methods, and functions in the PyDealer package. If you want to know what a certain function/method does, this is the place to look.

### Contents

- API Documentation
  - card Module
  - stack Module
  - deck Module
  - tools Module
  - const Module

### 2.2.1 card Module

**Source** This module contains the Card class. Each Card instance represents a single playing card, of a given value and suit.

```python
class pydealer.card.Card(value, suit)
```

The Card class, each instance representing a single playing card.
Parameters

• **value** *(str)* – The card value.
• **suit** *(str)* – The card suit.

**eq** *(other, ranks=None)*

Compares the card against another card, `other`, and checks whether the card is equal to `other`, based on the given rank dict.

**Parameters**

• **other** *(Card)* – The second Card to compare.
• **ranks** *(dict)* – The ranks to refer to for comparisons.

**Returns** True or False.

**ge** *(other, ranks=None)*

Compares the card against another card, `other`, and checks whether the card is greater than or equal to `other`, based on the given rank dict.

**Parameters**

• **other** *(Card)* – The second Card to compare.
• **ranks** *(dict)* – The ranks to refer to for comparisons.

**Returns** True or False.

**gt** *(other, ranks=None)*

Compares the card against another card, `other`, and checks whether the card is greater than `other`, based on the given rank dict.

**Parameters**

• **other** *(Card)* – The second Card to compare.
• **ranks** *(dict)* – The ranks to refer to for comparisons.

**Returns** True or False.

**le** *(other, ranks=None)*

Compares the card against another card, `other`, and checks whether the card is less than or equal to `other`, based on the given rank dict.

**Parameters**

• **other** *(Card)* – The second Card to compare.
• **ranks** *(dict)* – The ranks to refer to for comparisons.

**Returns** True or False.

**lt** *(other, ranks=None)*

Compares the card against another card, `other`, and checks whether the card is less than `other`, based on the given rank dict.

**Parameters**

• **other** *(Card)* – The second Card to compare.
• **ranks** *(dict)* – The ranks to refer to for comparisons.

**Returns** True or False.
ne (other, ranks=None)
    Compares the card against another card, other, and checks whether the card is not equal to other,
    based on the given rank dict.

Parameters
    • other (Card) – The second Card to compare.
    • ranks (dict) – The ranks to refer to for comparisons.

Returns True or False.

pydealer.card.card_abbrev (value, suit)
    Constructs an abbreviation for the card, using the given value, and suit.

Parameters
    • value (str) – The value to use.
    • suit (str) – The suit to use.

Returns A newly constructed abbreviation, using the given value & suit

pydealer.card.card_name (value, suit)
    Constructs a name for the card, using the given value, and suit.

Parameters
    • value (str) – The value to use.
    • suit (str) – The suit to use.

Returns A newly constructed name, using the given value & suit.

2.2.2 stack Module

Source This module contains the Stack class, which is the backbone of the PyDealer package. A Stack is essen-
tially just a generic “card container”, with all of the methods users may need to work with the cards they contain. A
Stack can be used as a hand, or a discard pile, etc.

class pydealer.stack.Stack (**kwargs)
    The Stack class, representing a collection of cards. This is the main ‘card container’ class, with methods for
    manipulating it’s contents.

Parameters
    • cards (list) – A list of cards to be the initial contents of the Stack.
    • ranks (dict) – If sort=True, The rank dict to reference for sorting. Defaults to
    DEFAULT_RANKS.
    • sort (bool) – Whether or not to sort the stack upon instantiation.

add (cards, end='top')
    Adds the given list of Card instances to the top of the stack.

Parameters
    • cards – The cards to add to the Stack. Can be a single Card instance, or a list of
    cards.
    • end (str) – The end of the Stack to add the cards to. Can be TOP (“top”) or BOTTOM
    (“bottom”).
cards
The cards property.

Returns The cards in the Stack/Deck.

deal (num=1, end='top')
Returns a list of cards, which are removed from the Stack.

Parameters

• num (int) – The number of cards to deal.

• end (str) – Which end to deal from. Can be 0 (top) or 1 (bottom).

Returns The given number of cards from the stack.

eempty (return_cards=False)
Empties the stack, removing all cards from it, and returns them.

Parameters return_cards (bool) – Whether or not to return the cards.

Returns If return_cards=True, a list containing the cards removed from the Stack.

find (term, limit=0, sort=False, ranks=None)
Searches the stack for cards with a value, suit, name, or abbreviation matching the given argument, ‘term’.

Parameters

• term (str) – The search term. Can be a card full name, value, suit, or abbreviation.

• limit (int) – The number of items to retrieve for each term. 0 equals no limit.

• sort (bool) – Whether or not to sort the results.

• ranks (dict) – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.

Returns A list of stack indices for the cards matching the given terms, if found.

find_list (terms, limit=0, sort=False, ranks=None)
Searches the stack for cards with a value, suit, name, or abbreviation matching the given argument, ‘terms’.

Parameters

• terms (list) – The search terms. Can be card full names, suits, values, or abbreviations.

• limit (int) – The number of items to retrieve for each term.

• sort (bool) – Whether or not to sort the results, by poker ranks.

• ranks (dict) – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.

Returns A list of stack indices for the cards matching the given terms, if found.

gget (term, limit=0, sort=False, ranks=None)
Get the specified card from the stack.

Parameters

• term – The search term. Can be a card full name, value, suit, abbreviation, or stack indice.

• limit (int) – The number of items to retrieve for each term.

• sort (bool) – Whether or not to sort the results, by poker ranks.

• ranks (dict) – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.
Returns A list of the specified cards, if found.

get_list (terms, limit=0, sort=False, ranks=None)
Get the specified cards from the stack.

Parameters

• term – The search term. Can be a card full name, value, suit, abbreviation, or stack indice.
• limit (int) – The number of items to retrieve for each term.
• sort (bool) – Whether or not to sort the results, by poker ranks.
• ranks (dict) – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.

Returns A list of the specified cards, if found.

insert (card, indice=-1)
Insert a given card into the stack at a given indice.

Parameters

• card (Card) – The card to insert into the stack.
• indice (int) – Where to insert the given card.

insert_list (cards, indice=-1)
Insert a list of given cards into the stack at a given indice.

Parameters

• cards (list) – The list of cards to insert into the stack.
• indice (int) – Where to insert the given cards.

is_sorted (ranks=None)
Checks whether the stack is sorted.

Parameters ranks (dict) – The rank dict to reference for checking. If None, it will default to DEFAULT_RANKS.

Returns Whether or not the cards are sorted.

open_cards (filename=None)
Open cards from a txt file.

Parameters filename (str) – The filename of the deck file to open. If no filename given, defaults to “cards-YYYYMMDD.txt”, where “YYYYMMDD” is the year, month, and day. For example, “cards-20140711.txt”.

random_card (remove=False)
Returns a random card from the Stack. If remove=True, it will also remove the card from the deck.

Parameters remove (bool) – Whether or not to remove the card from the deck.

Returns A random Card object, from the Stack.

reverse ()
Reverse the order of the Stack in place.

save_cards (filename=None)
Save the current stack contents, in plain text, to a txt file.

Parameters filename (str) – The filename to use for the file. If no filename given, defaults to “cards-YYYYMMDD.txt”, where “YYYYMMDD” is the year, month, and day. For example, “cards-20140711.txt”.
**set_cards** *(cards)*
Change the Deck’s current contents to the given cards.

**Parameters**
- **cards** *(list)* – The Cards to assign to the stack.

**shuffle** *(times=1)*
Shuffles the Stack.

**Note:** Shuffling large numbers of cards (100,000+) may take a while.

**Parameters**
- **times** *(int)* – The number of times to shuffle.

**size**
Counts the number of cards currently in the stack.

**Returns**
The number of cards in the stack.

**sort** *(ranks=None)*
Sorts the stack, either by poker ranks, or big two ranks.

**Parameters**
- **ranks** *(dict)* – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.

**Returns**
The sorted cards.

**split** *(indice=None)*
Splits the Stack, either in half, or at the given indice, into two separate Stacks.

**Parameters**
- **indice** *(int)* – Optional. The indice to split the Stack at. Defaults to the middle of the Stack.

**Returns**
The two parts of the Stack, as separate Stack instances.

**pydealer.stack.convert_to_stack** *(deck)*
Convert a Deck to a Stack.

**Parameters**
- **deck** *(Deck)* – The Deck to convert.

**Returns**
A new Stack instance, containing the cards from the given Deck instance.

### 2.2.3 deck Module

**Source** This module contains the Deck class. Each Deck instance contains a full, 52 card French deck of playing cards upon instantiation. The Deck class is a subclass of the Stack class, with a few extra/differing methods.

**class** pydealer.deck.Deck(**kwargs**)
**Bases:** pydealer.stack.Stack

The Deck class, representing the deck that the cards will be in. It is a subclass of Stack, sharing all of the same methods, in addition to a couple of others you would expect a deck class to have.

**Warning:** At the moment, adding Jokers may cause some (most) functions/methods to throw errors.

**Parameters**
- **cards** – A list of cards to be the initial contents of the Deck. If provided, the deck will not automatically build a new deck. Can be a Stack, Deck, or list instance.
- **jokers** *(bool)* – Whether or not to include jokers in the deck.
- **num_jokers** *(int)* – How many jokers to add to the deck.
• **build** *(bool)* – Whether or not to build the deck on instantiation.

• **rebuild** *(bool)* – Whether or not to rebuild the deck when it runs out of cards due to dealing.

• **re_shuffle** *(bool)* – Whether or not to shuffle the deck after rebuilding.

• **ranks** *(dict)* – The rank dict that will be referenced by the sorting methods etc. Defaults to `DEFAULT_RANKS`.

### `build(jokers=False, num_jokers=0)`
Builds a standard 52 card French deck of Card instances.

**Parameters**

• **jokers** *(bool)* – Whether or not to include jokers in the deck.

• **num_jokers** *(int)* – The number of jokers to include.

### `deal(num=1, rebuild=False, shuffle=False, end='top')`
Returns a list of cards, which are removed from the deck.

**Parameters**

• **num** *(int)* – The number of cards to deal.

• **rebuild** *(bool)* – Whether or not to rebuild the deck when cards run out.

• **shuffle** *(bool)* – Whether or not to shuffle on rebuild.

• **end** *(str)* – The end of the Stack to add the cards to. Can be **TOP** ("top") or **BOTTOM** ("bottom").

**Returns** A given number of cards from the deck.

### `pydealer.deck.convert_to_deck(stack)`
Convert a Stack to a Deck.

**Parameters**

• **stack** *(Stack)* – The Stack instance to convert.

### 2.2.4 tools Module

**Source** The tools module contains functions for working with sequences of cards, some of which are used by the classes in the PyDealer package, such as the functions `build_cards`, `sort_cards`, and `check_term` for example.

### `pydealer.tools.build_cards(jokers=False, num_jokers=0)`
Builds a list containing a full French deck of 52 Card instances. The cards are sorted according to `DEFAULT_RANKS`.

**Parameters**

• **jokers** *(bool)* – Whether or not to include jokers in the deck.

• **num_jokers** *(int)* – The number of jokers to include.

**Returns** A list containing a full French deck of 52 Card instances.

### `pydealer.tools.check_sorted(cards, ranks=None)`
Checks whether the given cards are sorted by the given ranks.

**Parameters**

• **cards** – The cards to check. Can be a Stack, Deck, or list of Card instances.

• **ranks** *(dict)* – The ranks to check against. Default is `DEFAULT_RANKS`. 
Returns True or False.

pydealer.tools.check_term(card, term)
Checks a given search term against a given card’s full name, suit, value, and abbreviation.

Parameters
- card (Card) – The card to check.
- term (str) – The search term to check for. Can be a card full name, suit, value, or abbreviation.

Returns True or False.

pydealer.tools.compare_stacks(cards_x, cards_y, sorted=False)
Checks whether two given Stack, Deck, or list instances, contain the same cards (based on value & suit, not instance). Does not take into account the ordering.

Parameters
- cards_x – The first stack to check. Can be a Stack, Deck, or list instance.
- cards_y – The second stack to check. Can be a Stack, Deck, or list instance.
- sorted (bool) – Whether or not the cards are already sorted. If True, then compare_stacks will skip the sorting process.

Returns True or False.

pydealer.tools.find_card(cards, term, limit=0, sort=False, ranks=None)
Searches the given cards for cards with a value, suit, name, or abbreviation matching the given argument, term.

Parameters
- cards – The cards to search. Can be a Stack, Deck or list.
- term (str) – The search term. Can be a card full name, value, suit, or abbreviation.
- limit (int) – The number of items to retrieve for each term.
- sort (bool) – Whether or not to sort the results, by poker ranks.
- ranks (dict) – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.

Returns A list of indices for the cards matching the given terms, if found.

pydealer.tools.find_list(cards, terms, limit=0, sort=False, ranks=None)
Searches the given cards for cards with a value, suit, name, or abbreviation matching the given argument, terms.

Parameters
- cards – The cards to search. Can be a Stack, Deck or list.
- terms (list) – The search terms. Can be card full names, suits, values, or abbreviations.
- limit (int) – The number of items to retrieve for each term. 0 == no limit.
- sort (bool) – Whether or not to sort the results, by poker ranks.
- ranks (dict) – The rank dict to reference for sorting. If None, it will default to DEFAULT_RANKS.

Returns A list of indices for the cards matching the given terms, if found.

pydealer.tools.get_card(cards, term, limit=0, sort=False, ranks=None)
Get the specified card from the stack.
Parameters

- **cards** – The cards to get from. Can be a `Stack`, `Deck` or `list`.
- **term** *(str)* – The card’s full name, value, suit, abbreviation, or stack indice.
- **limit** *(int)* – The number of items to retrieve for each term.
- **sort** *(bool)* – Whether or not to sort the results, by poker ranks.
- **ranks** *(dict)* – If `sort=True`, the rank dict to refer to for sorting.

Returns A copy of the given cards, with the found cards removed, and a list of the specified cards, if found.

```python
pydealer.tools.get_list(cars, terms, limit=0, sort=False, ranks=None)
```

Get the specified cards from the stack.

Parameters

- **cars** – The cards to get from. Can be a `Stack`, `Deck` or `list`.
- **terms** *(list)* – A list of card’s full names, values, suits, abbreviations, or stack indices.
- **limit** *(int)* – The number of items to retrieve for each term.
- **sort** *(bool)* – Whether or not to sort the results, by poker ranks.
- **ranks** *(dict)* – If `sort=True`, the rank dict to refer to for sorting.

Returns A list of the specified cards, if found.

```python
pydealer.tools.open_cards(filename=None)
```

Open cards from a txt file.

Parameters **filename** *(str)* – The filename of the deck file to open. If no filename given, defaults to “cards-YYYYMMDD.txt”, where “YYYYMMDD” is the year, month, and day. For example, “cards-20140711.txt”.

Returns The opened cards, as a list.

```python
pydealer.tools.random_card(cards, remove=False)
```

Returns a random card from the Stack. If `remove=True`, it will also remove the card from the deck.

Parameters **remove** *(bool)* – Whether or not to remove the card from the deck.

Returns A random Card object, from the Stack.

```python
pydealer.tools.save_cards(cards, filename=None)
```

Save the given cards, in plain text, to a txt file.

Parameters

- **cards** – The cards to save. Can be a `Stack`, `Deck`, or `list`.
- **filename** *(str)* – The filename to use for the cards file. If no filename given, defaults to “cards-YYYYMMDD.txt”, where “YYYYMMDD” is the year, month, and day. For example, “cards-20140711.txt”.

```python
pydealer.tools.sort_card_indices(cards, indices, ranks=None)
```

Sorts the given Deck indices by the given ranks. Must also supply the `Stack`, `Deck`, or `list` that the indices are from.

Parameters

- **cards** – The cards the indices are from. Can be a `Stack`, `Deck`, or `list`
- **indices** *(list)* – The indices to sort.
• **ranks** (*dict*) – The rank dict to reference for sorting. If `None`, it will default to `DEFAULT_RANKS`.

**Returns** The sorted indices.

```python
pydealer.tools.sort_cards(cards, ranks=None)
```

Sorts a given list of cards, either by poker ranks, or big two ranks.

**Parameters**

- **cards** – The cards to sort.
- **ranks** (*dict*) – The rank dict to reference for sorting. If `None`, it will default to `DEFAULT_RANKS`.

**Returns** The sorted cards.

2.2.5 **const Module**

**Source** These are the few constants that are used by the PyDealer package. The poker ranks, and big two ranks could be used for sorting, or by anyone making a game that relies on those ranks. PyDealer references `DEFAULT_RANKS` for sorting order, and ordering of newly instantiated decks by default.

```python
pydealer.const.SUITS
[
"Diamonds", "Clubs", "Hearts", "Spades"
]
```

```python
pydealer.const.VALUES
["2", "3", "4", "5", "6", "7", "8", "9", "10", "Jack", "Queen", "King", "Ace"]
```

```python
pydealer.const.BIG2_RANKS
{  
  "values": {  
    "2": 13,  
    "Ace": 12,  
    "King": 11,  
    "Queen": 10,  
    "Jack": 9,  
    "10": 8,  
    "9": 7,  
    "8": 6,  
    "7": 5,  
    "6": 4,  
    "5": 3,  
    "4": 2,  
    "3": 1,  
  },  
  "suits": {  
    "Spades": 4,  
    "Hearts": 3,  
    "Clubs": 2,  
    "Diamonds": 1  
  }  
}
```

```python
pydealer.const.DEFAULT_RANKS
```
{  
  "values": {  
    "Ace": 13,  
    "King": 12,  
    "Queen": 11,  
    "Jack": 10,  
    "10": 9,  
    "9": 8,  
    "8": 7,  
    "7": 6,  
    "6": 5,  
    "5": 4,  
    "4": 3,  
    "3": 2,  
    "2": 1  
  },  
  "suits": {  
    "Spades": 4,  
    "Hearts": 3,  
    "Clubs": 2,  
    "Diamonds": 1  
  }
}

pydealer.const.POKER_RANKS
{
  "Ace": 13,  
  "King": 12,  
  "Queen": 11,  
  "Jack": 10,  
  "10": 9,  
  "9": 8,  
  "8": 7,  
  "7": 6,  
  "6": 5,  
  "5": 4,  
  "4": 3,  
  "3": 2,  
  "2": 1
}

pydealer.const.TOP
"top"

pydealer.const.BOTTOM
"bottom"

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