BIS 420 PROGRAMMING FOR DATA SCIENCE
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CHAPTER 18 EXERCISE 18.2
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Write a Deck method named sort that uses the list method sort to sort the cards in a Deck. sort uses the __cmp__ method we defined to determine sort order.

```
class Card:

    suit_names = ["Clubs", "Diamonds", "Hearts", "Spades"]

    rank_names = [None, "Ace", "2", "3", "4", "5", "6", "7",
             "8", "9", "10", "Jack", "Queen", "King"]


    def __init__(self, suit=0, rank=2):
        self.suit = suit
        self.rank = rank


    def __lt__(self, other):
        return (self.suit, self.rank) < (other.suit, other.rank)


    def __str__(self):
        return f"{Card.rank_names[self.rank]} of {Card.suit_names[self.suit]}"


class Deck:
    def __init__(self):
        self.cards = [Card(suit, rank)
                for suit in range(4)
                for rank in range(1, 14)]


    def sort(self):
```

```
        self.cards.sort()


    def __str__(self):

        return '\n'.join(str(card) for card in self.cards)


deck = Deck()

import random

random.shuffle(deck.cards)


print("Shuffled Deck:")

print(deck)


deck.sort()

print("\nSorted Deck:")

print(deck)
```

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        return (self.suit, self.rank) < (other.suit, other.rank)

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                        for rank in range(1, 14)]

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