Iterators

Announcements

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`next(iterator)`: Return the next element in an iterator

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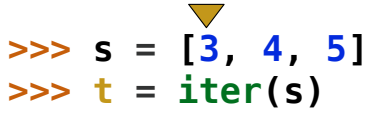

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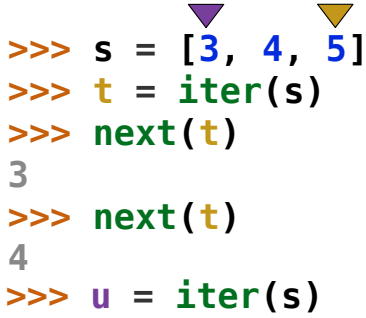

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(Demo)

Dictionary Iteration

Views of a Dictionary

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'two'
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>>> v = iter(d.values())
>>> next(v)
1
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>>> next(v)
2
```

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('two', 2)
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(Demo)

For Statements

(Demo)

Built-In Iterator Functions

Built-in Functions for Iteration

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map(func, iterable):     Iterate over func(x) for x in iterable
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                map(func, iterable):     Iterate over func(x) for x in iterable
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         zip(first_iter, second_iter):   Iterate over co-indexed (x, y) pairs
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list(iterable):     Create a list containing all x in iterable
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Zip

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>>> palindrome([3, 1, 4, 1, 3])
True
>>> palindrome([3, 1, 4, 1, 5])
False
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>>> palindrome([3, 1, 4, 1, 3])
True
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False
```

```
>>> palindrome('seveneves')
True
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```

Using Iterators

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Code that processes an iterator (via **next**) or iterable (via **for** or **iter**) makes few assumptions about the data itself.

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Code that processes an iterator (via **next**) or iterable (via **for** or **iter**) makes few assumptions about the data itself.

- Changing the data representation from a **list** to a **tuple**, **map object**, or **dict_keys** doesn't require rewriting code.

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- Passing that object to another function always retains the position.
- Useful for ensuring that each element of a sequence is processed only once.
- Limits the operations that can be performed on the sequence to only requesting **next**.

Example: Casino Blackjack

Player:

Dealer:

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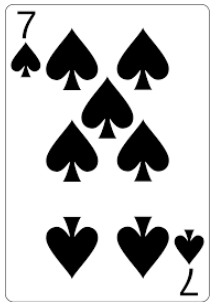
Player:



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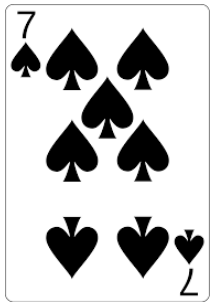

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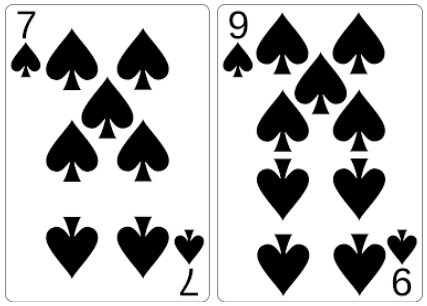

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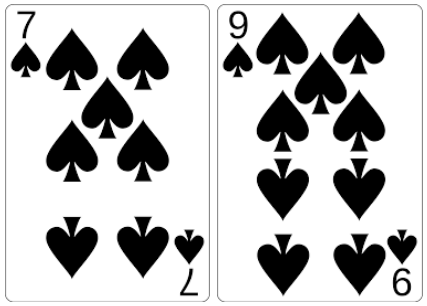

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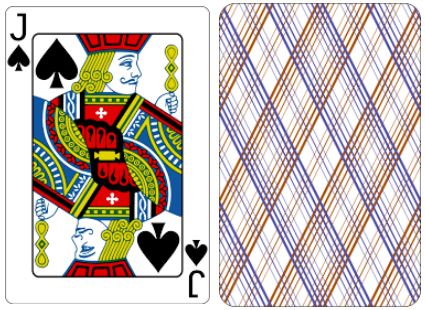

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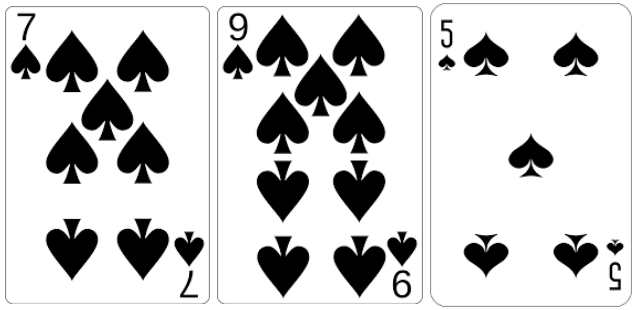

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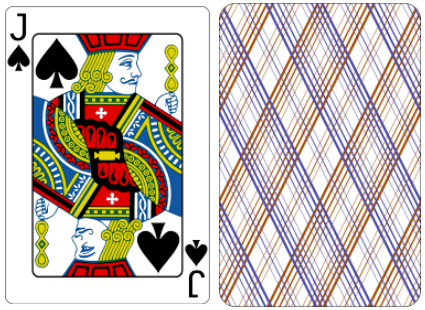

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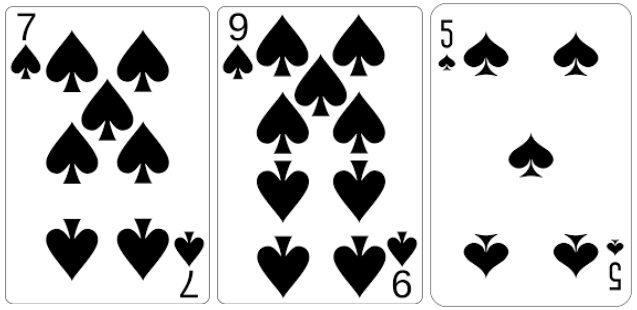

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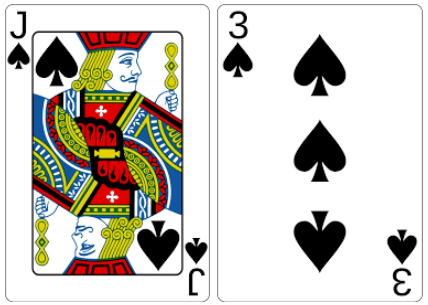

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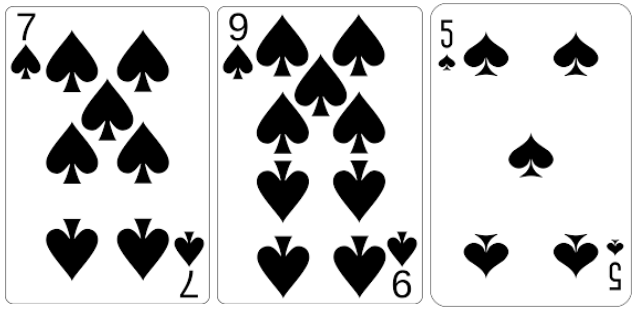

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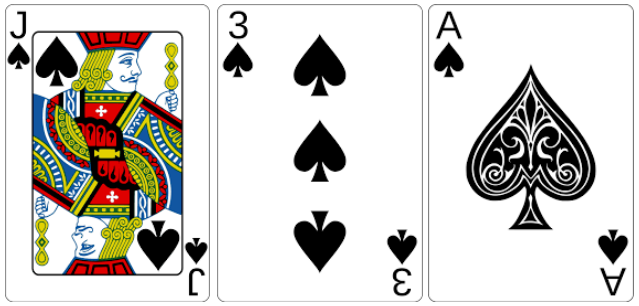

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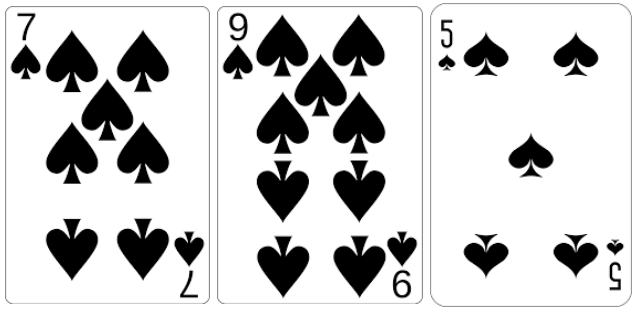

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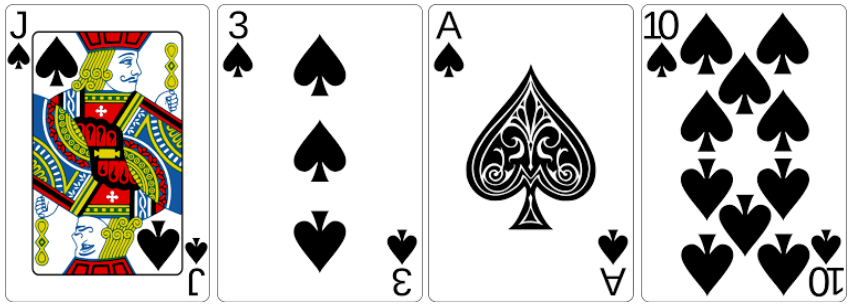

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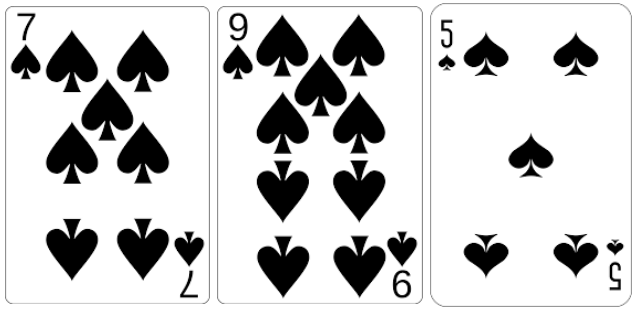

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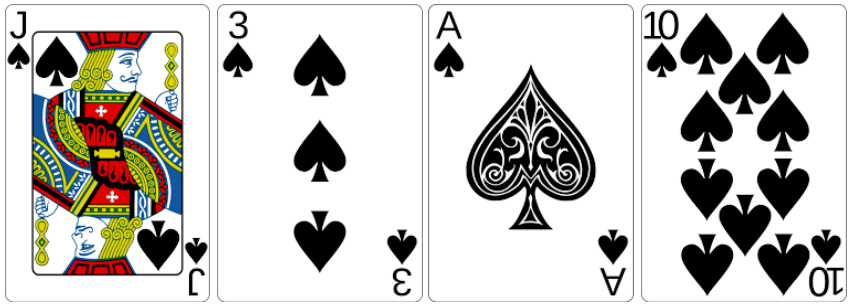

(Demo)