

Definition of middle

```
def middle(text):
    """Returns: middle 3rd of text
    Param text: a string with
    length divisible by 3"""

    # Get length of text
    size = len(text)
    # Start of middle third
    start2 = size//3
    # Start of last third
    start3 = (2*size)//3
    # Get the substring
    middle_third = text[start2:start3]
    return middle_third
```

IMPORTANT:
Precondition requires that arguments to **middle** have length divisible by 3.

If not? Bad things could happen, and we blame the user (not the author) of the function.

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String Extraction, Round 2

```
def firstparens(text):
    """Returns: substring in ()
    Uses the first set of parens
    Param text: a string with ()"""

    # Find the open parenthesis
    start = text.index('(')

    # Store part AFTER paren
    substr = text[start+1:]

    # Find the close parenthesis
    end = substr.index(')')

    inside = substr[end:]
    return inside
```

```
>>> s = 'One (Two) Three'
>>> firstparens(s)
'Two'
>>> t = '(A) B (C) D'
>>> firstparens(t)
'A'
>>> u = 'A( B (C) D'
>>> firstparens(u)
'B (C'
>>> v = 'A) B (C) D'
>>> firstparens(v)
ERROR
```

OK

ERROR

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String Extraction Fix

```
def second(thelist):
    """Returns: second word in a list
    of words separated by commas, with
    any leading or trailing spaces from the
    second word removed
    Ex: second('A, B, C') => 'B'
    Param thelist: a list of words with
    at least two commas"""

    1 start = thelist.index(',')
    2 tail = thelist[start+1:] → tail = thelist[start+2:] #possible fix ??
    3 end = tail.index(',')      What if there are multiple (or no!) spaces?
    4 result = tail[:end] → result = tail[:end].strip() #better fix!
    5 return result
```

```
>>> second('cat, dog, mouse, lion')
expecting: 'dog'      get: 'dog'

>>> second('apple,pear , banana')
expecting: 'pear'    get: 'pear'
```

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Exercise 1

Module Text

```
# module.py

def foo(x):
    x = 1+2
    x = 3*x
```

Python Interactive Mode

```
>>> import module
>>> print(module.x)
```

... What does Python give me?

A: 9
B: 10
C: 1
D: None
E: Error

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Exercise 1, Solution

Module Text

```
# module.py

def foo(x):
    x = 1+2
    x = 3*x
```

Python Interactive Mode

```
>>> import module
>>> print(module.x)
```

... What does Python give me?

A: 9
B: 10
C: 1
D: None
E: Error **CORRECT**

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Exercise 2

Module Text

```
# module.py

def foo(x):
    x = 1+2
    x = 3*x

y = foo(0)
```

Python Interactive Mode

```
>>> import module
>>> print(module.y)
```

... What does Python give me?

A: 9
B: 10
C: 1
D: None
E: Error

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Exercise 2, Solution

Module Text	Python Interactive Mode
<pre># module.py def foo(x): x = 1+2 x = 3*x y = foo(0)</pre>	<pre>>>> import module >>> print(module.y) ... What does Python give me?</pre> <div style="border: 1px solid purple; padding: 5px; width: fit-content;"> <p>A: 9 B: 10 C: 1 D: None CORRECT E: Error</p> </div>

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Exercise 3

Module Text	Python Interactive Mode
<pre># module.py def foo(x): x = 1+2 x = 3*x return x+1 y = foo(0)</pre>	<pre>>>> import module >>> module.y ... What does Python give me?</pre> <div style="border: 1px solid purple; padding: 5px; width: fit-content;"> <p>A: 9 B: 10 C: 1 D: None E: Error</p> </div>

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Exercise 3, Solution

Module Text	Python Interactive Mode
<pre># module.py def foo(x): x = 1+2 x = 3*x return x+1 y = foo(0)</pre>	<pre>>>> import module >>> module.y ... What does Python give me?</pre> <div style="border: 1px solid purple; padding: 5px; width: fit-content;"> <p>A: 9 B: 10 CORRECT C: 1 D: None E: Error</p> </div>

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Exercise 4

Function Definition	Function Call
<pre>def foo(a,b): 1 x = a 2 y = b 3 return x*y+y</pre>	<pre>>>> x = 2 >>> foo(3,4) >>> x ... What does Python give me?</pre> <div style="border: 1px solid purple; padding: 5px; width: fit-content;"> <p>A: 2 B: 3 C: 16 D: None E: I do not know</p> </div>

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Exercise 4, Solution

Function Definition	Function Call
<pre>def foo(a,b): 1 x = a 2 y = b 3 return x*y+y</pre> <p><i>Global</i> x 2</p> <p><i>Call-frame</i></p> <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <pre>foo x 2 3 --- --- --- --- a 3 b 4 x 3 y 7 RET 4 16</pre> </div>	<pre>>>> x = 2 >>> foo(3,4) >>> x ... What does Python give me?</pre> <div style="border: 1px solid purple; padding: 5px; width: fit-content;"> <p>A: 2 CORRECT B: 3 C: 16 D: None E: I do not know</p> </div>

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