Python Exercise 5

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1 Instructions

Finish the following exercises **without referring to your notes** on a piece of paper and scan a PDF file by 20:59 PM CST, Jan 16. The exercise takes no more than **30** minutes in total. Record the time it takes to finish, and write it down at the end of your answers.

2 Class Recap

In today's lesson, we learnt two types of parameters and their rules, scope of variable, and conditionals.

3 Exercise

3.1 Two Types of Parameter

1. What are the differences between positional argument and keyword argument?
2. Can I pass in no value to keyword argument when calling the function?
3. Can I exchange the order in which I pass in several values to positional argument?
4. Can I exchange the order in which I pass in one positional argument and one keyword argument?
5. Write down if the following ways of calling are appropriate for function:

```
def hexagon(x, y, s, penWidth=5, interiorColor="yellow"):
    # lots of code in here
```

   (a) `hexagon(300, 300, 0.5, penWidth=5, 3)`
   (b) `hexagon(300, 300, penWidth=5)`
   (c) `hexagon(300, 300, 0.5, interiorColor='yellow', penWidth=5)`
   (d) `hexagon(x=300, y=300, s=0.5)`

3.2 Variable Scope

1. What is variable scope in Python?
2. If I decide to introduce a new variable in the definition of a function, can I access this variable outside the function?
3. If I decide to introduce a new variable in a loop, can I call this variable outside the loop? What variable in a loop cannot be accessed outside the loop?
4. What keyword should we use when we want to access a variable defined in the function?

3.3 Conditionals

1. Simplify the following boolean statement.

   (a) `0 > 1 and 0 < 1`

   (b) `2 + 3 >= 5 and 3 % 2 == 1`

   (c) `not 100 // 9 != 11 or not 100 / 9 == 11`

   (d) `bool("False") + 10 // 3 == 3`

   (e) `bool(10) + (10 // 3 == 3) == 4`

   (f) `not bool("True") and 10 // 3 == 3 and 888888 // 1399 == 634 and 89 * 43 // (23 + bool(23)) == 159`