Python Quiz 2

Graded

Student
苏慧哲

Total Points
82 / 100 pts

Question 1
Question 1
4 / 4 pts

✔ **– 0 pts** T

Question 2
Question 2
4 / 4 pts

✔ **– 0 pts** F

Question 3
Question 3
4 / 4 pts

✔ **– 0 pts** T

Question 4
Question 4
4 / 4 pts

✔ **– 0 pts** T

Question 5
Question 5
0 / 4 pts

✔ **– 4 pts** F or unanswered

Question 6
Question 6
0 / 4 pts

✔ **– 4 pts** T or unanswered

Question 7
Question 7
4 / 4 pts

✔ **– 0 pts** F

Question 8

Question 8

4 / 4 pts

✔ – 0 pts T

Question 9

Question 9

4 / 4 pts

✔ – 0 pts F

Question 10

Question 10

0 / 4 pts

✔ – 4 pts T or unanswered

Question 11

Question 11

4 / 4 pts

✔ – 0 pts T

Question 12

Question 12

4 / 4 pts

✔ – 0 pts T

Question 13

Question 13

4 / 4 pts

✔ – 0 pts F

Question 14

Question 14

4 / 4 pts

✔ – 0 pts T

Question 15

Question 15

4 / 4 pts

✔ – 0 pts T

Question 16

Question 16

4 / 4 pts

✔ – 0 pts T

Question 17

Question 17

4 / 4 pts

✔ – 0 pts F

Question 18

Question 18

4 / 4 pts

✔ – 0 pts F

Question 19

Question 19

0 / 6 pts

✔ – 6 pts Otherwise

Question 20

Question 20

6 / 6 pts

✔ – 0 pts Correct

Question 21

Question 21

8 / 8 pts

✔ – 0 pts Correct

Question 22

Question 22

8 / 8 pts

22.1 **1st call**

2 / 2 pts

✔ – 0 pts Correct

22.2 **2nd call**

2 / 2 pts

✔ – 0 pts Correct

22.3 **3rd call**

2 / 2 pts

✔ – 0 pts Correct

22.4 **4th call**

2 / 2 pts

✔ – 0 pts Correct

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SI100B Python Programming Quiz 2

- **English-only Rule: In this quiz, you may only answer the questions in English.** Answers in other languages (e.g. Chinese) will result in **0 point for the corresponding question.**
- Before you start, **please fill your FULL CHINESE name, student ID and your ShanghaiTech email address** in the related blanks in Question 0 **AND** the blanks on the top of every page. Failing to do so may result in 0 point of this quiz.
- Please **fill your answers in the table at the end of each section.** Answers written in other places will not be graded.

Question 0: Please Identify Yourself

Please **fill your FULL CHINESE name, student ID and your ShanghaiTech email address** in the related blanks below **AND** the blanks on the top of every page. Failing to do so may result in 0 point of this quiz.

Your FULL CHINESE name: 苏慧雯

Your student ID: 2020533009

Your ShanghaiTech email address: suhzh @shanghaitech.edu.cn

True or False (4 pts each, 72 pts in total)

Please decide whether the statements in the following questions are correct. If correct, fill in **T** in the following table. If wrong, fill in **F**.

1. In a `try` statement, there must be at least one `except` clause if there is no `finally` clause. T
2. A file handle opened for read can be treated as an unordered sequence of strings where each line in the file is a string in the sequence. F.
3. Subclass could not inherit any private class attributes of Base classes. T
4. A list is usually slower than a NumPy array during operations. T

Please read the following piece of code and answer Question 5 -7

```
1  class Foo:
2      x = 1
3      def __init__(self):
4          [YOUR CODE]   改为. Foo.x = 2.
5
6  print(Foo.x == Foo().x)
```

5. If `[YOUR CODE]` is replaced with `x = 2`, the program will output `True` if it is executed in an interactive Python 3 interpreter. F.
6. If `[YOUR CODE]` is replaced with `Foo.x = 2`, the program will output `True` if it is executed in an interactive Python 3 interpreter. T
7. If `[YOUR CODE]` is replaced with `self.x = 2`, the program will output `True` if it is executed in an interactive Python 3 interpreter. F
8. `__init__()` is an instance method. T

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9. The first parameter of all instance methods is bound to the instance object. The name of the first parameter must be `self`. Otherwise, an error will occur during execution. F
10. Calling a class method on an instance object never affect attributes of other instances. T
11. Private attributes in a module cannot be imported using `from {module_name} import *` (Note: `{module_name}` represents the name of the module to be imported). T
12. Function `open()` returns a "file handler", which is a variable used to perform operations on the file. T
13. Sub class always inherits all public instance variables of the Base class. F.
14. In NumPy, the function `savez(file, *args, **kwds)` saves arrays into a file in `.npz` format. T
15. A NumPy `ufunc` (i.e. universal function) is a "vectorized" wrapper for a function that takes a fixed number of specific inputs and produces a fixed number of specific outputs.
16. Either a dictionary or a 2d NumPy array could be used to create a Pandas `DataFrame`.
17. Lists are homogenous while NumPy arrays are heterogeneous.
18. If the following program is executed by an interactive Python 3 interpreter:

```
1  import numpy as np
2
3  a = np.array(
4      [[1, 2, 3],
5      [4, 5, 6]])
6  num = 2
7
8  print(a / num)
```

the program will output:

```
1  [[0.5 1.  1.5]
2   [4.  5.  6. ]]
```

Please fill your answers to questions in this section in the table below.

Question 01	Question 02	Question 03	Question 04	Question 05	Question 06
T	F	T	T	F	T

Question 07	Question 08	Question 09	Question 10	Question 11	Question 12
F	T	F	T	T	T

Question 13	Question 14	Question 15	Question 16	Question 17	Question 18
F	T	T	T	F	F.

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Multiple Choices (20 pts)

Attention:

Each of the follow questions has **only one correct answer.**

Question 19 (6 pts)

What is the behavior of the following program? Assume that the code is written in a file and being executed in a terminal.

```
1  try:
2      1 +
3  except:
4      print('good for you')
5  finally:
6      print('goodbye world')
```

A. Only raises `SyntaxError`

B. Only prints `goodbye world`

C. Only prints `good for you`

D. Prints `good for you`, then prints `goodbye world`

E. Prints `goodbye world`, then prints `good for you`

F. Prints `goodbye world`, then raises `SyntaxError`

Question 20 (6 pts)

Evaluate the output of the following code

```
1  class Foo:
2      def __init__(self):
3          self.k = 10
4          self.bar()
5          print(self.k)
6
7      def bar(self):
8          self.k = 2 * self.k
9
10 class Foooo(Foo):
11     def __init__(self):
12         self.k = 20
13         Foo()
14         self.bar()
15         print(self.k)
16
17     def bar(self):
18         self.k = 3 * self.k
19
20 class Baz(Foooo):
21     pass
22
23 foo = Baz()
```

Foo Foooo bar.
10 20
20

20 20 60

A.

```
1  20
2  40
```

B.

```
1  20
2  60
```

C.

```
1  30
2  60
```

D.

```
1  30
2  30
3  90
```

E.

```
1  20
2  20
3  60
```

F.

```
1  90
2  180
```

Question 21 (8 pts)

Read the following code snippet in the file `bar.py`, determine what will be printed on your console.

```
1  class BarError(BaseException):
2    pass
3
4  class BarZeroEncountered(BarError):
5    pass
6
7  def bar(a, b=1, *c, **d):
8    print('a:', a)
9    print('b:', b)
10   print('c:', c)
11   print('d:', d)
12   if b == 0:
13     raise BarZeroEncountered('b could not be zero.')
14
15 if __name__ == '__main__':
16   try:
17     bar(1, 0, 1, 2, 3, x=1, y=2, z=3)
18   except BarZeroEncountered as e:
19     print("Emmm,", e)
20   except BarError as e:
21     print("Hummm,", e)
22   except Exception as e:
23     print("Ha,", e)
```

a: 1 b: 0
c: (1, 2, 3)
d: {x: 1, y: 2, z: 3}

Please choose the correct output from the following options if the program is run as `python3 bar.py`.

A.

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```
a: 1
b: 1
c: (1, 2, 3)
d: {'x': 1, 'y': 2, 'z': 3}
```

B.

```
a: 1
b: 0
c: (1, 2, 3)
d: {'x': 1, 'y': 2, 'z': 3}
Emmm, `b` could not be zero.
```

C.

```
a: 1
b: 0
c: (1, 2, 3)
d: {'x': 1, 'y': 2, 'z': 3}
Emmm, BarZeroEncountered
```

D.

```
a: 1
b: 0
c: (1, 2, 3)
d: {'x': 1, 'y': 2, 'z': 3}
Ha, `b` could not be zero.
```

E.

```
a: 1
b: 0
c: [1, 2, 3]
d: {'x': 1, 'y': 2, 'z': 3}
Hummm, `b` could not be zero.
```

F

```
a: 1
b: 0
c: (1, 2, 3)
d: {'a': 1, 'b': 1, 'c': (1, 2, 3) 'x': 1, 'y': 2, 'z': 3}
Hummm, `b` could not be zero.
```

Please fill your answers to questions in this section in the table below.

Question 19	Question 20	Question 21
D.	~~E~~ B	B.

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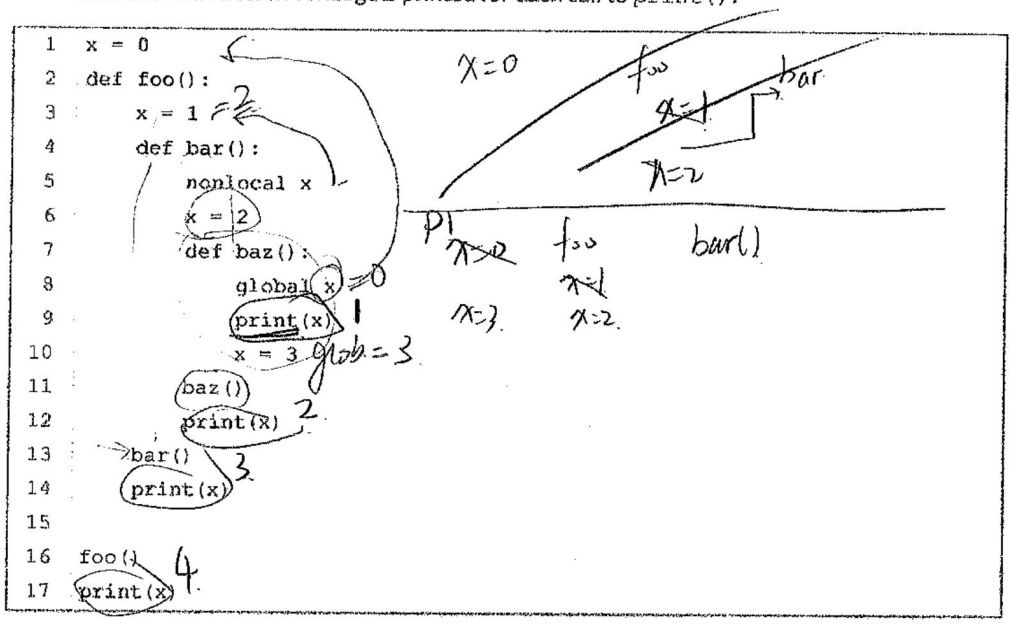
Blank Fillings

Question 22 (2 pts each, 8 pts in total)

Read the code below. What gets printed for each call to `print()`?

```
1  x = 0
2  def foo():
3      x = 1
4      def bar():
5          nonlocal x
6          x = 2
7          def baz():
8              global x
9              print(x)
10             x = 3
11         baz()
12         print(x)
13     bar()
14     print(x)
15
16 foo()
17 print(x)
```



Please fill your answers in the following table in the order of execution of every call to `print()`.

1st call	2nd call	3rd call	4th call
0	2.	2.	3.

End of the Quiz