

## Quiz: OOP II (Practice Problems)

### 1 Inheritance

**Note 1.** Whenever an attribute is not found in a subclass, Python will check the superclass for the attribute before raising the `AttributeError` exception.

**Problem 1.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     pass
5 class Bar(Foo):
6     pass
7 a = Foo()
8 Foo.message = 'hello world'
9 b = Bar()
10 Bar.message = 'hola mundo'
11 try:
12     print('b.message=', b.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 2.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     pass
5 class Bar(Foo):
6     pass
7 a = Foo()
8 Foo.message = 'hello world'
9 b = Bar()
10 a.message = 'hola mundo'
11 try:
12     print('b.message=', b.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 3.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     pass
5 class Bar(Foo):
6     pass
7 a = Foo()
8 Foo.message = 'hello world'
9 b = Bar()
10 a.message = 'hola mundo'
11 try:
12     print('b.message=', b.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 4.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     pass
5 class Bar(Foo):
6     pass
7 a = Foo()
8 a.message = 'hello world'
9 b = Bar()
10 try:
11     print('b.message=', b.message)
12 except AttributeError:
13     print('AttributeError')
14 EOF
15 $ python3 foo.py
```

**Problem 5.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     pass
5 class Bar(Foo):
6     pass
7 a = Foo()
8 Foo.message = 'hello world'
9 b = Bar()
10 Bar.message = 'hola mundo'
11 try:
12     print('a.message=', a.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

## 1.1 With Constructors

**Note 2.** The constructor of a superclass will only be called if it is explicitly called in the constructor of the subclass. You should use the `super` function to get the superclass.

**Problem 6.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self):
5         self.message = 'hello world'
6 class Bar(Foo):
7     def __init__(self):
8         self.message = 'hola mundo'
9 a = Foo()
10 b = Bar()
11 try:
12     print('b.message=', b.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 7.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self):
5         self.message = 'hello world'
6 class Bar(Foo):
7     def __init__(self):
8         self.message = 'hola mundo'
9         super().__init__()
10 a = Foo()
11 b = Bar()
12 try:
13     print('b.message=', b.message)
14 except AttributeError:
15     print('AttributeError')
16 EOF
17 $ python3 foo.py
```

**Problem 8.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self):
5         self.message = 'hello world'
6 class Bar(Foo):
7     def __init__(self):
8         super().__init__()
9         self.message = 'hola mundo'
10 a = Foo()
11 b = Bar()
12 try:
13     print('b.message=', b.message)
14 except AttributeError:
15     print('AttributeError')
16 EOF
17 $ python3 foo.py
```

**Problem 9.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         self.message = message
6 class Bar(Foo):
7     def __init__(self, message=None):
8         self.message = message
9         super().__init__(message)
10 a = Foo('hello world')
11 b = Bar('hola mundo')
12 try:
13     print('b.message=', b.message)
14 except AttributeError:
15     print('AttributeError')
16 EOF
17 $ python3 foo.py
```

**Problem 10.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         Foo.message = message
6 class Bar(Foo):
7     def __init__(self, message=None):
8         super().__init__(message)
9 a = Foo('hello world')
10 b = Bar('hola mundo')
11 try:
12     print('b.message=', b.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 11.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         Foo.message = message
6 class Bar(Foo):
7     def __init__(self, message=None):
8         super().__init__(message)
9 b = Bar('hola mundo')
10 a = Foo('hello world')
11 try:
12     print('b.message=', b.message)
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 12.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     pass
5 class Bar(Foo):
6     def __init__(self, message=None):
7         super().__init__()
8         Foo.message = message
9 a = Foo()
10 b = Bar('hola mundo')
11 c = Bar()
12 try:
13     print('b.message=', b.message)
14 except AttributeError:
15     print('AttributeError')
16 EOF
17 $ python3 foo.py
```

## 2 Static Methods

### 2.1 Without Inheritance

**Problem 13.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         self.message = message
6     def foo(self):
7         return self.message
8 a = Foo('hello world')
9 try:
10     print('a.foo()=', a.foo())
11 except AttributeError:
12     print('AttributeError')
13 EOF
14 $ python3 foo.py
```

**Problem 14.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     message = 'salve munde'
5     def __init__(self, message=None):
6         self.message = message
7     @staticmethod
8     def foo():
9         return Foo.message
10 a = Foo('hello world')
11 try:
12     print('a.foo()=', a.foo())
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 15.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     message = 'salve munde'
5     def __init__(self, message=None):
6         self.message = message
7     @staticmethod
8     def foo():
9         return Foo.message
10 a = Foo('hello world')
11 try:
12     print('Foo.foo()=', Foo.foo())
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

**Problem 16.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     message = 'salve munde'
5     def __init__(self, message=None):
6         Foo.message = message
7     @staticmethod
8     def foo():
9         return Foo.message
10 a = Foo('hello world')
11 try:
12     print('Foo.foo()=', Foo.foo())
13 except AttributeError:
14     print('AttributeError')
15 EOF
16 $ python3 foo.py
```

## 2.2 With Inheritance



**Problem 17.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         self.message = message
6     def foo(self):
7         return self.message
8 class Bar(Foo):
9     def __init__(self, message=None):
10         super().__init__(message)
11     def bar(self):
12         return self.message
13 a = Foo('hello world')
14 b = Bar('hola mundo')
15 try:
16     print('b.foo()=', b.foo())
17 except AttributeError:
18     print('AttributeError')
19 EOF
20 $ python3 foo.py
```

**Problem 18.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         self.message = message
6     def foo(self):
7         return self.message
8 class Bar(Foo):
9     def __init__(self, message=None):
10         super().__init__(message)
11     def bar(self):
12         return self.message
13 a = Foo('hello world')
14 b = Bar('hola mundo')
15 try:
16     print('a.bar()=', a.bar())
17 except AttributeError:
18     print('AttributeError')
19 EOF
20 $ python3 foo.py
```

**Problem 19.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         self.message = message
6     def foo(self):
7         return self.message
8 class Bar(Foo):
9     message = 'salve munde'
10    def __init__(self, message=None):
11        super().__init__(message)
12    @staticmethod
13    def bar():
14        return Bar.message
15 a = Foo('hello world')
16 b = Bar('hola mundo')
17 try:
18     print('b.bar()=', b.bar())
19 except AttributeError:
20     print('AttributeError')
21 EOF
22 $ python3 foo.py
```

**Problem 20.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     def __init__(self, message=None):
5         self.message = message
6     def foo(self):
7         return self.message
8 class Bar(Foo):
9     message = 'salve munde'
10    def __init__(self, message=None):
11        super().__init__(message)
12    @staticmethod
13    def bar():
14        return Bar.message
15 a = Foo('hello world')
16 b = Bar('hola mundo')
17 try:
18     print('Bar.bar()=', Bar.bar())
19 except AttributeError:
20     print('AttributeError')
21 EOF
22 $ python3 foo.py
```

**Problem 21.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     message = 'salve munde'
5     def __init__(self, message=None):
6         Bar.message = message
7     @staticmethod
8     def foo():
9         return Bar.message
10 class Bar(Foo):
11     def __init__(self, message=None):
12         super().__init__(message)
13     @staticmethod
14     def bar():
15         return Foo.message
16 a = Foo('hello world')
17 b = Bar('hola mundo')
18 try:
19     print('Bar.foo()=', Bar.foo())
20 except AttributeError:
21     print('AttributeError')
22 EOF
23 $ python3 foo.py
```

**Problem 22.** Write the output of the final command in the following terminal session. If the command has no output, then leave the problem blank.

```
1 $ cd; rm -rf quiz; mkdir quiz; cd quiz
2 $ cat > foo.py <<EOF
3 class Foo:
4     message = 'salve munde'
5     def __init__(self, message=None):
6         Bar.message = message
7     @staticmethod
8     def foo():
9         return Bar.message
10 class Bar(Foo):
11     def __init__(self, message=None):
12         super().__init__(message)
13     @staticmethod
14     def bar():
15         return Foo.message
16 a = Foo('hello world')
17 b = Bar('hola mundo')
18 try:
19     print('Bar.bar()=', Bar.bar())
20 except AttributeError:
21     print('AttributeError')
22 EOF
23 $ python3 foo.py
```