

Quiz 3

Started: Apr 17 at 8:13pm

Quiz Instructions

Inheritance, composition, polymorphism



The questions are all multiple choice or true/false. You may take the quiz twice, with 15 minutes for each attempt. Questions may differ between attempts. The highest score of the two attempts will be considered. You can only view the results once, immediately after finishing an attempt.

This is an open book test, however, you may not share the questions/answers of your quiz with others.

Question 1

4 pts

Which of these is a benefit of inheritance?

- ☐ The subclass methods will use less computer memory.
- ☒ A sub-class can use methods from the superclass.
- ☐ The superclass functions will run faster.
- ☐ The child class will have access to all of the output from all previous executions of functions in the parent class.

Question 2

4 pts

In the context of inheritance, what does it mean to override a method?

- ☒ Instead of using the inherited parent class method as-is, the subclass has its own definition of the method which may behave differently.
- ☐ The file that contains the parent class gets replaced with the code from the subclass' file.
- ☐ Objects of the parent class will use the subclass' methods if the subclass has methods with the same name.

- ☐ The parent class prevents you from creating methods with the same name in any child class.

Question 3**4 pts**

Say you have two classes: a Remote class and a Microphone class, and each has a method called `mute()` in its definition. What would happen if we ran the following code?

```
def mute_it(something):  
    something.mute()  
  
mic = Microphone()  
rem = Remote()  
mute_it(mic)  
mute_it(rem)
```

- ☐ The call `mute_it(rem)` would call the `mute` method from the microphone class.
- ☒ The program would call the `mute` method for both the Microphone object and the Remote object.
- ☐ Only `mic` would call `mute`; the second call to `mute_it()` would yield an error.
- ☐ We would get an error because two classes cannot have a method with the same name.

Question 4**4 pts**

How many levels of inheritance are allowed in Python?

- ☐ 1 (no subclass may also be a superclass).
- ☐ 1, unless the subclass overrides all of the methods in the superclass.
- ☒ There is no limit.
- ☐ 2 (a subclass may have a subclass, but that subclass may not have its own subclass).

Question 5**4 pts**

Say you have a class that you want to inherit from a superclass. You want the `__init__` function of the child class to be slightly different from the parent's. What should you do?

- ☒ use `"super().__init__"` inside the child class' `__init__` function definition.
- ☐ Use the parent class' `__init__` function as normal, but have an extra function `init2()` that is called every time an object of the child class is created, which can fix the object.
- ☐ Rework the program by copying and pasting all of the superclass' functions (except the `__init__` function) into the subclass so that you don't need it to inherit anything.
- ☐ Change the way the super class' `__init__` function works, so that it's more compatible with that one child class' needs.

Question 6**4 pts**

In Python, we can call a method on any object of any type, as long as the method is defined for that object.

- ☐ False
- ☒ True

Quiz saved at 8:15pm

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