True/FalseQuestions

1. zip() modifies the original iterables that it combines.
2. zip() can only combine two iterables at a time
3. The resulting iterator from zip() contains elements up to the length of the longest input iterable.
4. Lazy objects in Python conserve memory as they calculate values only when requested.
5. map() applies a function to each item in an iterable and returns a list of the results.
6. List comprehensions are eager and generate the entire list immediately when executed.
7. List comprehensions are limited to iterating over only one iterable.
8. List comprehensions allow the use of statements like if and else for conditional filtering and value assignment
9. In Python, everything is an object.
10. Python supports method overloading, where multiple methods with the same name can have different parameters.
11. Is Method overriding is possible between the class having composition Relationship
12. Types of Inheritance depend upon the number of child and parent classes involved
13. There can be multiple except statement in exception handling
14. Is it possible to create an empty class in Python
15. Inheritance in Python allows a class to inherit properties and methods from multiple parent classes.
16. The raise statement allows the programmer to force a specific exception to occur
17. Python has a garbage collector that handles memory management automatically
18. An except block in Python can handle multiple exceptions by specifying them within a single block separated by commas
19. The order of except blocks in Python matters; more specific exceptions should be listed before broader ones.
20.finally block in Python is executed only when an exception occurs.

Fill in the blanks.

21	The return type of the zip() function is an _____ object in Python.
22	The zip() function is commonly used to iterate over multiple iterables. _____
23	When applying zip() with iterables of different lengths, the resulting iterator will contain elements up to the length of the _____ input iterable.
24	Using map() with a lambda function can be useful for applying simple operations or transformations to _____.

25	The filter() function in Python constructs an iterator from elements of an iterable for which a function returns _____.
26	The map() function in Python applies a given function to every item in an iterable and returns a new iterator, effectively creating a _____.
27	map() can take multiple iterables as arguments and apply a function _____.
28	reduce() takes a function and an iterable as arguments, repeatedly applying the function to pairs of elements, _____.
29	———— concept ensures access to only the implementation of a function and not its internal data and function.
30	Function that accepts multiple parameters but can have only one statement is_____
31	———— Function is created by default when a object is created.
32	__init__() method in Python classes is used to _____.
33	A----------method is a method that is bound by the class itself and not the object
34	Using ------------, the child class can refer to any method of the parent class.
35	In _____inheritance, features of the base class and the derived class are further inherited into the new derived class
36.	Inheritance consisting of multiple types of inheritance is called _____ inheritance
37.	The _____ was called after the program ended or when all the references to object are deleted
38	Attributes are always _____and can be accessed using the dot (.) operator
39.	_____ functions are quick, throwaway single line functions
40	Composition in Python refers to the design principle where a class contains objects of other classes as _____.
41	Method overriding occurs when a subclass provides a specific implementation of a method that is already defined in its _____.

42	Instance methods in Python take the instance itself as the first parameter, typically referred to as _____.
43	Class attributes in Python are shared among all instances of the class, whereas instance attributes are specific to each _____.
	Question
44	What is the purpose of the zip() function in Python?
45	Can you use zip() to combine more than two iterables? If so, how?
46	How does zip() handle iterables of different lengths?
47	How can you unzip a zipped object created by zip()?
48	Can you use map() with multiple iterables? If so, how?
49	Is filter() eager or lazy in its evaluation?
50	Is it possible to accomplish the same task using a loop instead of reduce()?
51	Can you use filter() with a lambda function? Show an example.
52	Compare and contrast map, filter, and reduce.
53	Can you describe the role of the finally block when handling exceptions in Python?
54	What is the syntax for List comprehension in Python?
55	How are map calls and list comprehensions related? Compare and contrast the two.
56	Explain the syntax of handling multiple exceptions using separate except blocks.
57	Discuss inheritance in Python programming language. Write a Python program to demonstrate the use of super() function
58	Define class.
59	Define Inheritance
60	Define Polymorphism
61	What do you think are the merits of object-oriented programming?
62	Explain constructors and Destructors
63	How does Python support multiple inheritances? What are the potential issues and how can they be mitigated?
64	What is composition in Python? How does it differ from inheritance?
65	Explain the concept of method resolution order (MRO) in Python multiple inheritance.
	Programming Question
66	Write a Python program to filter a list of integers using Lambda. Original list of integers: [1, 2, 3, 4, 5, 6, 7, 8, 9, 10] Even numbers from the said list: [2, 4, 6, 8, 10] Odd numbers from the said list: [1, 3, 5, 7, 9]
67	Write a Python program to convert all the characters into uppercase and eliminate duplicate

	letters from a given sequence. Use the map() function.
68	Write a Python program that prompts the user to input an integer and raises a ValueError exception if the input is not a valid integer.
69	Write a Python program that opens a file and handles a FileNotFoundError exception if the file does not exist.
70	Write a Python program that executes an operation on a list and handles an IndexError exception if the index is out of range
71	Write a Python program to create a person class. Include attributes like name, country and date of birth. Implement a method to determine the person's age.
72	Write a Python program to create a class that represents a shape. Include methods to calculate its area and perimeter. Implement subclasses for different shapes like circle, triangle, and square.
73	Write a Python program to create a class representing a shopping cart. Include methods for adding and removing items, and calculating the total price.
74	Given the Coordinates (x, y) of a center of a Circle and its radius, write Python program to determine whether the Point lies inside the Circle, on the Circle or outside the Circle
75	Create a Bus child class that inherits from the Vehicle class. The default fare charge of any vehicle is seating capacity * 100. If Vehicle is Bus instance, we need to add an extra 10% on full fare as a maintenance charge. So total fare for bus instance will become the final amount = total fare + 10% of the total fare.

76	Let a be the list of values produced by range(1, 11). Using the function filter and a lambda argument, write an expression that will produce each of the following:
	      a. A list of the even values in a
	      b. A list of the values in a divisible by 3

77	Explain the following execution of the function filter .Hint: remember how integer values are interpreted when a Boolean is required.
	      >>>filter(lambda x:x,[4,0,6,3,0,2])
	      [4,6,3,2]Write a lambda function for each of the following:
	      a. Take one argument and return true if it is nonzero
	      b. Take one argument and return true if it is odd
	      c. Take two arguments, and return their sum
	      d. Take two arguments, and return true if their sum is odd
	      e. Take three arguments, and return true if the produce of the first two is less than or equal to the third

78	Let a be the list of values produced by range(1, 11). Using the function map and a lambda argument, write an expression that will produce each of the following
	      a. A list of squares of the values
	      b. A list of cubes of the values
	      c. A list where each element is larger by one than the corresponding element in the original list

79	Write a function named Square that returns the squares of all the numbers of a list argument passed to it in sorted order from lowest to highest. Your code must make use of list comprehensions
	Using list comprehension print the Fibonacci Sequence in comma separated form for given

	input n.
80	Using list comprehension ,write a program to print the list with numbers which are divisible by 5 and 7 in [12,24,35,70,88,120,155].
81	For class FullName that contains an __init__ method that is passed a first and last name to construct a new object with, define a subclass of the FullName class named FullNamePlus that also stores a person's middle name. The subclass should include an __init__ method, getter/setter methods, and a __str__ methods that displays a name in the form lastname, firstname middle name. (Assume that class Full Name contains getter methods accessing the first and last names.)
82	Give the definition of an abstract class named Currency that stores a currency amount (as an integer value). Include in the class an __init__ method and an abstract __str__ method. Define three subclasses of the Currency class named US Currency (dollars), Euro Currency (euros), and the Chinese Currency (yuan). Implement the __str__ method of each so that the proper currency symbol is displayed. The Unicode string for displaying Euro and Chinese currency symbols are '\u20AC' and '\u5143, respectively.
83	Give section of code that prompts the user for an integer value, and displays the number entered if no exception is raised, otherwise catches the exception when a non-numeric character is entered, displaying the message "non-digit found in input."
84	Write a function called getYearOfBirth that prompts the user to enter their year of birth as a four-digit number, and returns the year entered. The function should throw a ValueError exception if the entered number is not within the range 1900 to the present year. Write a program that calls this function, and keeps calling it until a valid year has been entered.
85	Give appropriate getter and setter methods for an XYCoord class containing private instance variables x and y.Give an appropriate __init__ method for a class named FullName that stores the first and last name of a given individual. Assume that the class contains (private) instance variables first_name and last_name.
86	For person1, an object instance of classFullName containing private instance variables first_name and last_name, indicate how each of these instance variables can be directly accessed from outside the class.
87	For a class named FullName that contains an __init__ method that is passed a first and last name to construct a new object with, give an instruction that creates a new object of type FullName containing the name "Yu Huang."
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