JEPPIAAR
ENGINEERING COLLEGE

Department of Artificial Intelligence and Data Science

Python Made Simple – A Journey for Beginners

Quiz Day 2 - 24.09.2024

Object-Oriented Programming

Q1. What is the primary purpose of using classes in Object-Oriented Programming?
A. To define data types
B. To organize code into reusable blueprints
C. To increase execution speed
D. To prevent code from being reused

Q2. What is the role of the `self` parameter in Python class methods?
A. It represents the class itself
B. It holds the value returned by the method
C. It refers to the instance of the class calling the method
D. It is used to initialize class attributes

Q3. Why is encapsulation important in OOP?
A. It allows one class to inherit from another
B. It hides the internal state of an object and protects data integrity
C. It allows objects to take many forms
D. It defines how objects are initialized

Q4. In the context of inheritance, how does method overriding work?
A. By hiding a method in the parent class
B. By defining multiple methods with the same name
C. By redefining a method in the child class that exists in the parent class
D. By preventing methods from being inherited

Q5. What is the key difference between a class method and a static method in Python?
A. A class method can modify class-level attributes, while a static method cannot
B. A static method can access the class, while a class method cannot
C. A static method takes the `self` parameter, while a class method does not
D. Both class and static methods have access to instance variables

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Q6. Which of the following best describes polymorphism in Object-Oriented Programming?
A. An object can be converted into multiple data types
B. Different classes can be treated as instances of a common parent class, and they can respond to the same method in different ways
C. A class is restricted from being inherited by other classes
D. An object can have many constructors

Q7. In Python, what is the purpose of `__repr__()` and `__str__()` magic methods?
A. To initialize the class when it is first created

B. To provide string representations for instances of the class
C. To manage errors within a class
D. To call another class from within a class

Q8. What is the advantage of using abstract base classes and the `abc` module in Python?
A. It enforces the implementation of specific methods in derived classes
B. It automatically generates class attributes
C. It allows multiple inheritance without issues
D. It optimizes the performance of the program

Q9. What is the primary goal of inheritance in OOP?
A. To define new methods in the child class
B. To allow multiple objects to share the same attributes
C. To allow a new class to reuse the properties and methods of an existing class
D. To prevent access to class attributes

Q10. What does it mean for a class to be abstract in Python?
A. It contains methods that are not implemented but must be defined in child classes
B. It cannot be instantiated
C. It can only be used as a base class
D. All of the above

Approach towards programming

1. In a program to check if a student passes or fails, what condition is necessary for a student to pass if three subjects are taken as input and the student needs at least 33% in each subject and 40% overall?
    - a) Each subject >= 40%
    - b) Total marks >= 33% of total and 40% in each subject
    - c) Total marks >= 40% of total and each subject >= 33%
    - d) Each subject >= 33% only
2. Which of the following is the correct Python syntax for calculating the factorial of a number using a for loop?
    - a) for i in range(1, num): factorial *= i
    - b) for i in range(1, num + 1): factorial *= i
    - c) for i in range(num): factorial += i
    - d) for i in range(2, num): factorial *= i
3. How would you print the following star pattern for n = 3?

```
\
   *
  **
 ***
```

    - a) Use nested loops and print spaces followed by stars in each iteration
    - b) Use a single for loop and print the stars directly
    - c) Use a while loop to iterate through the rows and print stars
    - d) Use the multiplication operator * to print stars directly
4. Which of the following list comprehensions generates the multiplication table for a user-entered number n?
    - a) [n * i for i in range(1, 11)]
    - b) [i * n for i in range(11)]
    - c) [i ** n for i in range(1, 11)]
    - d) [n * i for i in range(11)]

5. How do you handle the zero-division error in Python when dividing two integers A and B (B might be zero)?
    - a) Use an if-else statement to check if B is zero
    - b) Use a try-except block to catch ZeroDivisionError
    - c) Use the division operator // to avoid division by zero
    - d) Display an error message directly without checking the value of B
6. Which of the following is the correct way to calculate the square of a number entered by the user in Python?
    - a) num = input("Enter a number: "); square = num ** 2
    - b) num = float(input("Enter a number: ")); square = num * num
    - c) num = input("Enter a number: "); square = num * num
    - d) num = int(input("Enter a number: ")); square = num ** 3
7. What method in Python would you use to detect double spaces in a string?
    - a) string.contains(" ")
    - b) string.search(" ")
    - c) string.find(" ")
    - d) string.double(" ")
8. Which of the following escape sequence characters can be used to insert a newline in a formatted string?
    - a) \t
    - b) \n
    - c) \
    - d) \r
9. Can the values inside a list that is part of a set be changed in Python, given a set like S = {(8, 7, 12), 'Harry', [1, 2]}?
    - a) Yes, lists are mutable even when inside a set
    - b) No, because lists cannot be elements of a set
    - c) Yes, but you can only append to the list
    - d) No, sets can only contain immutable objects
10. Which of the following is the correct approach to finding the greatest of four numbers entered by the user?
    - a) Using a series of if-elif-else conditions
    - b) Using the max() function on the four numbers
    - c) Comparing all four numbers using if conditions
    - d) All of the above