1. What is a lambda function in Python, and how does it differ from a regular function?
2. Can a lambda function in Python have multiple arguments? If yes, how can you define and use them?
3. How are lambda functions typically used in Python? Provide an example use case.
4. What are the advantages and limitations of lambda functions compared to regular functions in Python?
5. Are lambda functions in Python able to access variables defined outside of their own scope? Explain with an example.
6. Write a lambda function to calculate the square of a given number.
7. Create a lambda function to find the maximum value in a list of integers.
8. Implement a lambda function to filter out all the even numbers from a list of integers.
9. Write a lambda function to sort a list of strings in ascending order based on the length of each string.
10. Create a lambda function that takes two lists as input and returns a new list containing the common elements between the two lists.
11. Write a recursive function to calculate the factorial of a given positive integer.
12. Implement a recursive function to compute the nth Fibonacci number.
13. Create a recursive function to find the sum of all the elements in a given list.
14. Write a recursive function to determine whether a given string is a palindrome.
15. Implement a recursive function to find the greatest common divisor (GCD) of two positive integers.