

Python Assessment

1.

Scenario: You are working with a list of numbers and need to create a new list that contains only the even numbers from the original list.

Question: Write a Python oneliner using list comprehension to create a new list containing only the even numbers from the list `[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]`.

2.

Scenario: You are creating a class representing a person and want to customize the string representation of the object.

Question: Define a class `Person` with attributes `name`, `age`, and `gender`. Implement the `__str__` method to return a string in the format `"Name: {name}, Age: {age}, Gender: {gender}"`

3.

Scenario: You are building a Python script to fetch data from a REST API and process the results.

Question: Write a Python function that uses the `requests` library to make a GET request to the URL `https://api.example.com/data` and returns the JSON response.

4.

Scenario: You are working with a list of strings and need to sort them based on their lengths.

Question: Write a Python lambda function to use as the `key` parameter in the `sorted` function to sort the list `['apple', 'banana', 'cherry', 'date']` based on the length of each string.

5.

Scenario: You are creating a set of classes to represent different types of vehicles. You have a base class `Vehicle` and subclasses `Car`, `Truck`, and `Motorcycle`.

Question: Define the `Vehicle` class with a method `drive` that prints `"Driving a vehicle."` Then, define the subclasses `Car`, `Truck`, and `Motorcycle`, each with their own `drive` method that prints a message specific to that type of vehicle.