

Q1. What is the difference between getattr and getattribute?

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1 main difference
2 __getattr__: It is invoked after the default attribute lookup has failed, raising
  an AttributeError.
3 __getattribute__: It is invoked before the normal attribute lookup.
```

Q2. What is the difference between properties and descriptors?

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1 Properties:
2
3 Properties are accessed and modified using the dot notation
  (obj.attribute), providing a natural and intuitive syntax.
4 Properties are primarily used for encapsulating attribute access and adding
  validation or computation logic to
5 attribute accessors.
6
7 Descriptors:
8
9 Descriptors are typically assigned to class attributes, and they intercept
  attribute access and modification
10 at the class level.
11 Descriptors can provide custom behavior for attribute access, allowing you to
  define how the attribute is retrieved,
12 set, or deleted.
```

Q3. What are the key differences in functionality between getattr and getattribute, as well as properties and descriptors?

In []:

```
1 __getattr__ is invoked only when the attribute is not found through the normal
2 attribute lookup.
3 __getattribute__ is called for every attribute access, regardless of whether the
4 attribute exists or not.
5
6 Properties are defined using the @property decorator, allowing you to define getter,
7 setter, and deleter methods for an attribute.
8 Descriptors are defined by creating a class with __get__, __set__, or
9 __delete__ methods.
10 They are typically assigned to class attributes and intercept attribute access
11 and modification at the class level.
```

