Inheritance in Python

Inheritance is the capability of one class to derive or inherit the properties from some another class. The benefits of inheritance are:

1. It represents real-world relationships well.
2. It provides **reusability** of a code. We don’t have to write the same code again and again. Also, it allows us to add more features to a class without modifying it.
3. It is transitive in nature, which means that if class B inherits from another class A, then all the subclasses of B would automatically inherit from class A.

Below is a simple example of inheritance in Python:-

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| # A Python program to demonstrate inheritance    # Base or Super class. Note object in bracket.  # (Generally, object is made ancestor of all classes)  # In Python 3.x "class Person" is  # equivalent to "class Person(object)"  class Person(object):        # Constructor      def \_\_init\_\_(self, name):          self.name = name        # To get name      def getName(self):          return self.name        # To check if this person is employee      def isEmployee(self):          return False      # Inherited or Sub class (Note Person in bracket)  class Employee(Person):        # Here we return true      def isEmployee(self):          return True    # Driver code  emp = Person("Person1")  # An Object of Person  print(emp.getName(), emp.isEmployee())    emp = Employee("Person2") # An Object of Employee  print(emp.getName(), emp.isEmployee()) |

**Output:**

Person1 False

Person2 True

**Different forms of Inheritance:**  
**1. Single inheritance**: When a child class inherits from only one parent class, it is called as single inheritance. We saw an example above.

**2. Multiple inheritance**: When a child class inherits from multiple parent classes, it is called as multiple inheritance.  
Unlike Java and like C++, Python supports multiple inheritance. We specify all parent classes as comma separated list in bracket.

**3. Multilevel inheritance**: When we have child and grand child relationship.

**4. Hierarchical inheritance** More than one derived classes are created from a single base.

**4. Hybrid inheritance**: This form combines more than one form of inheritance. Basically, it is a blend of more than one type of inheritance.