# Python Inheritance

# Inheritance is a mechanism for creating a new class from an existing class.

# Parent class is the class being inherited from, also called base class.

# Child class is the class that inherits from another class, also called derived class.

# Child class inherits all the methods and properties of the parent class.

# Child class can have its own properties and methods.

class Person:

def \_\_init\_\_(self, firstname, lastname):

self.firstname = firstname

self.lastname = lastname

def printname(self):

print("This is from the parent class")

print(self.firstname, self.lastname)

# Create a child class of Person called Student

class Student(Person):

def \_\_init\_\_(self, firstname, lastname, graduationyear, major):

Person.\_\_init\_\_(self,firstname, lastname)

self.graduationyear = graduationyear

self.major = major

# Create methods for the child class

def printstudentinfo(self):

print("This is from the child class")

print(self.firstname, self.lastname, "in the class of", self.graduationyear, "planning to major in", self.major, ".")

# Create a Person

person1 = Person("John", "Doe")

person1.printname()

#Create another Person

person2 = Person("Jane", "Foe")

person2.printname()

#Create a Student

student1 = Student("Johnny", "Moe", 2024, "Computer Science")

student1.printname()

student1.printstudentinfo()

# Multiple Inheritance

# Multiple inheritance is when a class inherits from multiple classes.

# To do this, we use the keyword "super()".

# To define multiple inheritance, we use the keyword "class" and the "(", ", ", ")" syntax.

class GradStudent(Student):

def \_\_init\_\_(self, firstname, lastname, graduationyear, major, college):

super().\_\_init\_\_(firstname, lastname, graduationyear, major)

self.college = college

def printgradstudentinfo(self):

print("This is from the gradstudent class")

print(self.firstname, self.lastname, "in the class of", self.graduationyear, "planning to get a graduate degree in", self.major, "at", self.college, ".")

#Create a grad student

gradstudent1 = GradStudent("Marie", "Wright", 2026, "Data Analytics", "University of Oregon")

#Call the grad student functions

gradstudent1.printname()

gradstudent1.printstudentinfo()

gradstudent1.printgradstudentinfo()