Exercise 1

Follow the steps:

1) Create a class, Triangle. Its \_*\_init\_\_() method* should take self, angle1, angle2, and angle3 as arguments. Make sure to set these appropriately in the body of the*\_\_init\_\_()method.*

2) Create a variable named *number\_of\_sides* and set it equal to 3.

3) Create a method named *check\_angles*. It should return True if the sum of a triangle's three angles is equal 180, and False otherwise.

5) Create a variable named my\_triangle and set it equal to a new instance of your Triangle class.

6) Pass it three angles that sum to 180 (e.g. 90, 30, 60).

7) Print out *my\_triangle.number\_of\_sides* and print out *my\_triangle.check\_angles().*

Exercise 2

Define a class called Songs, it will show the lyrics of a song. Its \_\_init\_\_() method should have two arguments:self and lyrics. lyrics is a list.

Inside your class create a class method called sing\_me\_a\_song that prints each element of lyricson his own line.

Define a varible:

happy\_bday = Song(["Have a sunshine on you,",

"Happy Birthday to you !"])

Call the sing\_me\_song mehod on this variable.

Exercise 3:

Create a Bus class that inherits from the Vehicle class. Give the capacity argument of Bus.seating\_capacity() a default value of 50.

**The Vehicle is defined as following:**

class Vehicle:

def \_\_init\_\_(self, name, max\_speed, mileage):

self.name = name

self.max\_speed = max\_speed

self.mileage = mileage

def seating\_capacity(self, capacity):

return f"The seating capacity of a {self.name} is {capacity} passengers"

**Expected Output:**

The seating capacity of a school\_bus is 50 passengers.

Exercise 4:

Create a Bus child class that inherits from the Vehicle class. The default fare charge of any vehicle is seating capacity \* 100. If Vehicle is Bus instance, we need to add an extra 10% on full fare as a maintenance charge. So total fare for bus instance will become the final amount = total fare + 10% of the total fare.

Note: The bus seating capacity is 50. so the final fare amount should be 5500. You need to override the fare() method of a Vehicle class in Bus class.

***Use the following code for your parent Vehicle class. We need to access the parent class from inside a method of a child class.***

class Vehicle:

def \_\_init\_\_(self, name, mileage, capacity):

self.name = name

self.mileage = mileage

self.capacity = capacity

def fare(self):

return self.capacity \* 100 class

Bus(Vehicle):

pass

School\_bus = Bus("School Volvo", 12, 50)

print("Total Bus fare is:", School\_bus.fare())

**Expected Output:**

Total Bus fare is: 5500