class Smartphone:

    def \_\_init\_\_(self, brand, model, storage\_capacity, battery\_life):

        self.brand = brand

        self.model = model

        self.storage\_capacity = storage\_capacity  # in GB

        self.battery\_life = battery\_life          # in hours

        self.\_is\_powered\_on = False               # Encapsulated attribute

    def power\_on(self):

        if not self.\_is\_powered\_on:

            self.\_is\_powered\_on = True

            print(f"{self.brand} {self.model} is now powered on.")

        else:

            print(f"{self.brand} {self.model} is already on.")

    def power\_off(self):

        if self.\_is\_powered\_on:

            self.\_is\_powered\_on = False

            print(f"{self.brand} {self.model} is now powered off.")

        else:

            print(f"{self.brand} {self.model} is already off.")

    def install\_app(self, app\_name):

        if self.\_is\_powered\_on:

            print(f"Installing {app\_name} on {self.brand} {self.model}.")

        else:

            print(f"Cannot install {app\_name}. {self.brand} {self.model} is powered off.")

class SmartphoneWithCamera(Smartphone):

    def \_\_init\_\_(self, brand, model, storage\_capacity, battery\_life, camera\_megapixels):

        super().\_\_init\_\_(brand, model, storage\_capacity, battery\_life)

        self.camera\_megapixels = camera\_megapixels

    def take\_photo(self):

        if self.\_is\_powered\_on:

            print(f"Taking a photo with {self.camera\_megapixels}MP camera.")

        else:

            print(f"Cannot take photo. {self.brand} {self.model} is powered off.")

# Example usage:

phone = SmartphoneWithCamera("TechBrand", "X1000", 128, 24, 12)

phone.power\_on()

phone.install\_app("ChatApp")

phone.take\_photo()

phone.power\_off()

class Vehicle:

    def move(self):

        pass

class Car(Vehicle):

    def move(self):

        print("Driving 🚗")

class Boat(Vehicle):

    def move(self):

        print("Sailing ⛵")

class Plane(Vehicle):

    def move(self):

        print("Flying ✈️")

# Example usage:

vehicles = [Car(), Boat(), Plane()]

for vehicle in vehicles:

    vehicle.move()