**SMART CAR PARKING SYSTEM**

* NAME : D.MARI GANESH
* REG NO. :953021106037
* COLLEGE CODE:9530
* COLLEGE NAME:ST. MOTHER THERESA ENGINEERING COLLEGE
* NAAN MUDHALVAN:au953021106037

**PYTHON CODE:**

**classParkingSpot:**

**def \_init\_(self, spot\_number):**

**self.spot\_number = spot\_number**

**self.is\_available = True**

**self.car = None**

**defpark\_car(self, car):**

**Park a car in the parking spot.**

**ifself.is\_available:**

**self.car = car**

**self.is\_available = False**

**print(f"Car {car} parked in spot {self.spot\_number}")**

**else:**

**print(f"Parking spot {self.spot\_number} is occupied.")**

**defretrieve\_car(self):**

**Retrieve a car from the parking spot.**

**if not self.is\_available:**

**car = self.car**

**self.car = None**

**self.is\_available = True**

**print(f"Car {car} retrieved from spot {self.spot\_number}")**

**return car**

**else:**

**print(f"Parking spot {self.spot\_number} is already empty.")**

**return None**

**classParkingLot:**

**def \_init\_(self, num\_spots):**

**self.parking\_spots = [ParkingSpot(i) for i in range(1, num\_spots + 1)]**

**defpark\_car(self, car):**

**Park a car in the first available parking spot.**

**for spot in self.parking\_spots:**

**ifspot.is\_available:**

**spot.park\_car(car)**

**return**

**print("No available parking spots.")**

**defretrieve\_car(self, spot\_number):**

**Retrieve a car from the specified parking spot.**

**ifspot\_number< 1 or spot\_number>len(self.parking\_spots):**

**print("Invalid spot number.")**

**return**

**spot = self.parking\_spots[spot\_number - 1]**

**returnspot.retrieve\_car()**

**# Example usage**

**parking\_lot = ParkingLot(10)**

**parking\_lot.park\_car("ABC123") # Park car with license plate "ABC123"**

**parking\_lot.park\_car("XYZ789") # Park car with license plate "XYZ789"**

**parking\_lot.retrieve\_car(1) # Retrieve car from spot 1**

**parking\_lot.retrieve\_car(2) # Retrieve car from spot 2**

**OUTPUT:**

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