Fleet Management System Documentation

Overview

The Fleet Management System is a command-line interface (CLI) application designed to manage cars and drivers within a fleet. The system allows users to add cars and drivers, assign drivers to cars, and list all cars and drivers. This documentation provides details on the system's structure, usage, and functionality.

Classes

Car Class

Attributes:

registration_number (str): The car's registration number.

model (str): The car's model.

year (int): The year the car was manufactured.

mileage (int): The car's mileage.

assigned_driver (Driver): The driver assigned to this car (initially None).

Methods:

__init__(self, registration_number, model, year, mileage): Initializes a Car object with the given details.

assign_driver(self, driver) : Assigns a driver to the car.

__str__(self) : Returns a string representation of the car, including its assigned driver.

Driver Class

<u>Attributes:</u>

license_number (str) : The driver's license number.

name (str) : The driver's name.

experience_years (int) : The number of years the driver has been driving.

assigned_car (Car) : The car assigned to this driver (initially None).

<u>Methods:</u>

__init__(self, license_number, name, experience_years) : Initializes a Driver object with the given details.

assign_car(self, car) : Assigns a car to the driver.

__str__(self) : Returns a string representation of the driver, including the assigned car.

<u>FleetManagementSystem Class</u>

<u>Attributes:</u>

cars (dict) : A dictionary of cars, keyed by their registration number.

drivers (dict) : A dictionary of drivers, keyed by their license number.

Methods:

__init__(self): Initializes the FleetManagementSystem with empty dictionaries for cars and drivers.

add_car(self, registration_number, model, year, mileage): Adds a car to the fleet.

add_driver(self, license_number, name, experience_years) : Adds a driver to the fleet.

assign_driver_to_car(self, license_number, registration_number) : Assigns a driver to a car.

list_cars(self) : Lists all cars in the fleet.

list_drivers(self) : Lists all drivers in the fleet.

Command-Line Interface

The CLI provides a menu-driven interface for interacting with the Fleet Management System. The menu options are:

Add Car

Add Driver

Assign Driver to Car

List Cars

List Drivers

Exit

Menu Options:

Add Car

Prompts the user to enter the registration number, model, year, and mileage of the car.

Adds the car to the fleet.

Add Driver

Prompts the user to enter the license number, name, and

years of experience of the driver.

Adds the driver to the fleet.

Assign Driver to Car

Prompts the user to enter the driver's license number and the car's registration number.

Assigns the specified driver to the specified car.

List Cars

Displays all cars in the fleet, including their details and assigned drivers.

List Drivers

Displays all drivers in the fleet, including their details and assigned cars.

Exit

Exits the program.