

LU02.L10 - Immutable Dataclass

car.py

```
"""
This module contains the Car dataclass.
"""

from dataclasses import dataclass, field
from typing import List

@dataclass(frozen=True)
class Car:
    """
    A simple Car class that contains the brand, mileage, and service
    dates.
    """

    brand: str
    mileage: int
    service_dates: List[str] = field(default_factory=list)
```

main.py

```
"""
This script demonstrates the usage of the Car class and the
functions add_mileage and check_service.
"""

from car import Car

def add_mileage(car, distance):
    """
    Returns a new Car instance with updated mileage and possibly an
    updated service date.
    """

    new_mileage = car.mileage + distance
    new_service_dates = car.service_dates[:]

    if new_mileage > 10000 and (car.mileage <= 10000):
        new_service_dates.append('2024-08-28')

    return Car(brand=car.brand, mileage=new_mileage,
service_dates=new_service_dates)
```

```
def check_service(car):  
    """  
    Checks if the car's mileage exceeds 10,000 km.  
    """  
    return car.mileage > 10000  
  
if __name__ == '__main__':  
    my_car = Car(brand='Toyota', mileage=9500)  
    print(f'Vor der Fahrt: {my_car}')  
  
    my_car = add_mileage(my_car, 600) # Sollte den Service hinzufügen  
    print(f'Nach der ersten Fahrt: {my_car}')  
  
    if check_service(my_car):  
        print('Service erforderlich!')  
  
    my_car = add_mileage(my_car, 100) # Keine Änderung bei Service-  
Daten  
    print(f'Nach der zweiten Fahrt: {my_car}')  
    print(f'Service-Daten: {my_car.service_dates}')
```



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