Week 6: Introduction to OOP

W6_Practical.cpp

Objective: Define a class with attributes and methods, then create objects from it. **Task:** Create a `Car` class. The class should have private attributes for `make` (string) and `year` (int). It should have a public constructor to initialize these attributes and a public `printDetails()` method to display the car's information. In `main()`, create two different `Car` objects and call their `printDetails()` method.

Solution:

C++

```cpp
#include <iostream>
#include <string>

class Car {
// Public members are accessible from outside the class.
public:
  // Constructor: Used to initialize the object's attributes when it's created.
  Car(std::string carMake, int carYear) {
    make = carMake;
    year = carYear;
  }

  // A public method to print the car's details.
  void printDetails() {
    std::cout << "Car Details: [Make: " << make << ", Year: " << year << "]" << std::endl;
  }

// Private members are only accessible from within the class.
private:
  std::string make;
  int year;
};
```

```cpp
int main() {
    // Create (instantiate) a Car object named 'myCar'.
    Car myCar("Ford", 2021);

    // Create another Car object named 'yourCar'.
    Car yourCar("Toyota", 2023);

    // Call the public method on each object.
    myCar.printDetails();
    yourCar.printDetails();

    return 0;
}
```