

# Encapsulation\_Lab3

May 9, 2020

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In [ ]: #include <string>
        #include <cstring>
        #include <iostream>
        using std::string;
        using std::cout;

        class Car {
            // TODO: Declare private attributes
        private:
            double horsepower;
            double weight;
            char *brand;

            // TODO: Declare getter and setter for brand
        public:
            void setHorsepower(double hp);
            void setWeight(double w);
            void setBrand(string b);
            double getHorsepower() const;
            double getWeight() const;
            string getBrand() const;
        };

        // Define setters
        void Car::setHorsepower(double hp){horsepower = hp;}
        void Car::setWeight(double w){weight = w;}
        void Car::setBrand(string b){
            int size = b.length();
            brand = new char[size+1];
            strcpy(brand, b.c_str());
        }

        // Define getters
        double Car::getHorsepower() const{return horsepower;}
        double Car::getWeight() const{return weight;}
        string Car::getBrand() const{
            string result = "";
```

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        result = result + brand;
        return result;
    }

    // Test in main()
    int main() {
        Car car;
        car.setBrand("Peugeot");
        std::cout << car.getBrand() << "\n";
    }

```

Compile & Run

Explain

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Hide Solution

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In [ ]: // Partial example solution for Car class
        // getters and setters for brand only
        #include <string>
        #include <cstring>
        #include <iostream>
        // Define Car class
        class Car {
            // Define private attributes
        private:
            int horse_power;
            int weight;
            char *brand;
            // Declare public getter and setter
        public:
            void SetBrand(std::string brand_name);
            std::string GetBrand() const;
        };

        // Define setter
        void Car::SetBrand(std::string brand_name) {
            // Initialization of char array
            Car::brand = new char[brand_name.length() + 1];
            // copying every character from string to char array;
            strcpy(Car::brand, brand_name.c_str());
        }

        // Define getter
        std::string Car::GetBrand() const {
            std::string result = "Brand name: ";
            // Specifying string for output of brand name
            result += Car::brand;
        }

```

```
        return result;
    };

    // Test in main()
    int main() {
        Car car;
        car.SetBrand("peugeot");
        std::cout << car.GetBrand() << "\n";
    }
```