Object-oriented Programming

Lecture 2

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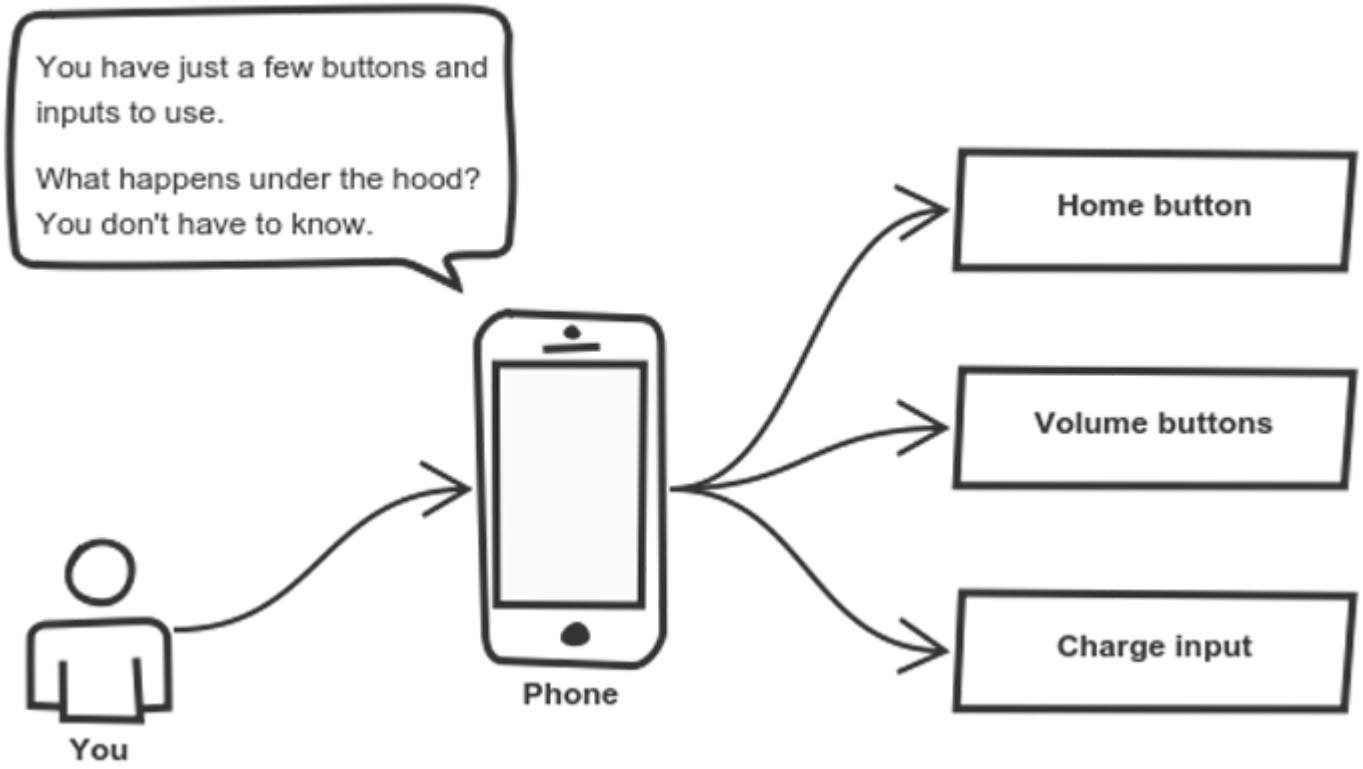
Recap


You have just a few buttons and inputs to use.
What happens under the hood? You don't have to know.
Home button
Volume buttons
Charge input
Phone
You

Information Hiding

- Implementation details are hidden from the outside world
- Information is stored within the object
- It can only be *changed* by the object itself

Example: Smartphone

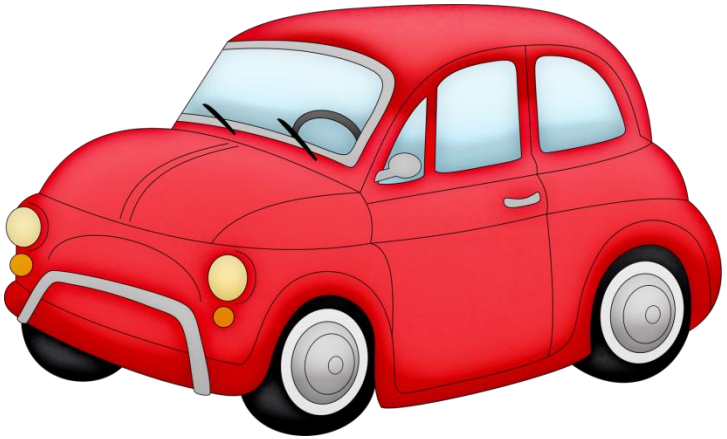
- All logic is hidden inside the handset
- You use HOME button to get to the home screen without knowing “how” it was done

Advantages of Information Hiding

- Simplifies the model by hiding implementation details
- Prevents accidental access
- Prevents illegal access or manipulation

Classes

- Accelerator Pedal
- Brake Pedal
- Steering Wheel



- User-friendly “interfaces” to control the car
- Their mechanism is *housed* inside the engineering drawings or blueprints

Classes

```
class Car
{
        void accelerate()
        { \\ logic for acceleration }

        void brake()
        { \\ logic for brakes }
};
```

Classes

```
class Car
{
        string model;
        int numOfDoors;
        string color;

        void accelerate()
        { \\ logic for acceleration }

        void brake()
        { \\ logic for brakes }

};
```

How to use the car?

```
int main()
{
        Car mycar;
        car.accelerate();
}
```

Class vs Struct

- Members of a class are **private** by default and members of struct are **public** by default

- Struct are value-type whereas classes are reference-type

- A structure can't be abstract, a class can be

Problem

```
int main()
{
        Car mycar;
        car.accelerate();
}
```

The function accelerate() cannot be accessed!