Creating Types and Classes

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Two Kinds of Types

Built in types:
int, double, string

User-defined types:
Employee, Account, Fish...
virtually anything

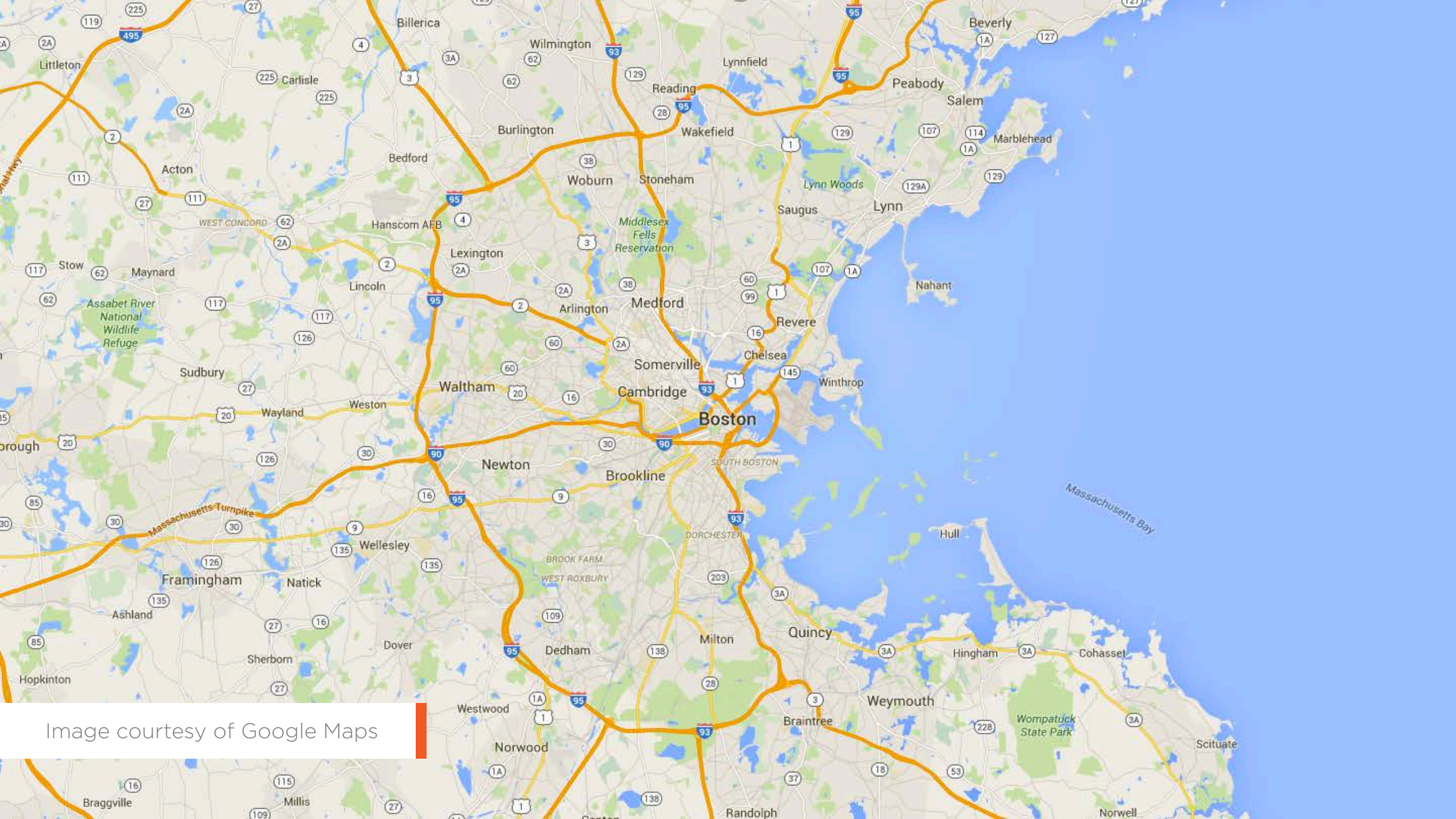


Image courtesy of Google Maps

A class defines a **type**.

```
public class Employee{
    //...
}
```

Defining a Class

An instance of a class
is called an **object**.

```
Employee joe = new Employee();
```

Instantiating an Object

Classes and Objects

Employee Class

Joe in IT

Mary in Development

Tony in HR

Instance (object)

Classes Have ...

```
public class Employee {
    public int CalculateSum(int firstValue, int secondValue){
        return firstValue + secondValue;
    }
}


int sum = CalculateSum(5, 7);
```

Methods

A chunk of code that does something (modifies an object, calculates a value)

Methods can take in information to work with (parameters)

Methods can return a value

A Word About Access Modifiers

Public

can be seen by any method in your program

Private

can be seen only by methods in the same class

Respect your privacy

anything that can be private, should be private.

Virtually every type
has **properties**.

```
public class Car {
    public int NumberOfDoors { get; set; }
    public double TopSpeed { get; set; }
```

Properties

In the “real world” think of a type (e.g., car)

That type has properties (e.g., top speed, 4 doors, etc.)

Fields are just like properties, only private to the class.

```
public class Car {
    private int vehicleIdentificationNumber;
```

Fields

By nature, fields are private, and used by the class to assist methods or to store values.

A Word About Capitalization

camelCase vs. PascalCase

Identical except PascalCase begins with an upper case letter, while camelCase begins with a lower case letter

Fields

Variables and parameters are camelCase. (myValue)

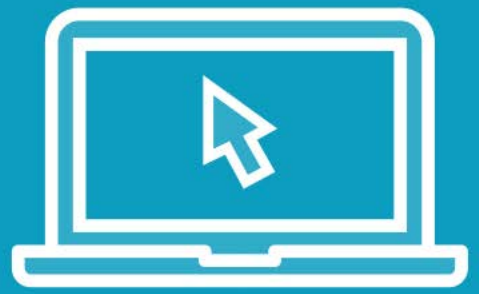
Classes

Constants and properties are PascalCase. (MyValue)

Note

This is just a convention, but you violate it at your own risk.

Demo



Classes and Objects