The Prototype Pattern

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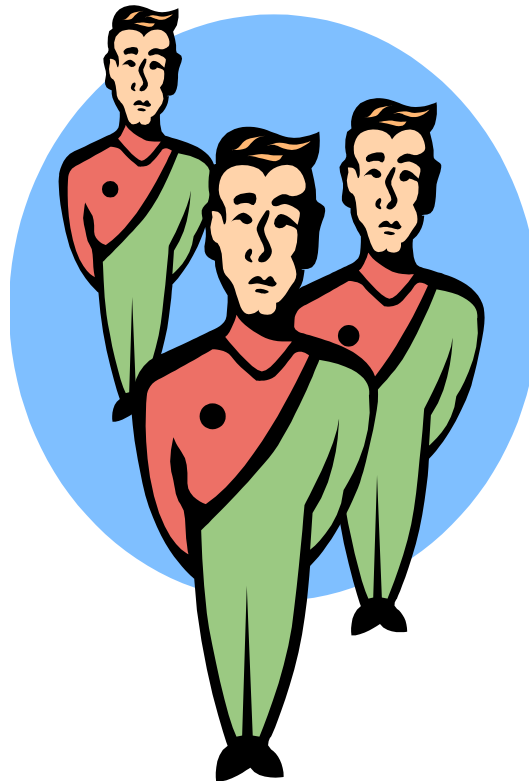**pluralsight**
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Introduction

- **Overview of Prototype**
- **Problem 1: Construction is expensive**
- **Problem 2: State is important**
- **Problem 3: Hiding the constructor**
- **Prototype design**
- **Examples**

Prototype

- **Specify the kinds of objects to create using a prototypical instance, and create new objects by copying this prototype.**

A Dialog

- **I see you have the water bill there**
  - Yes I do
- **I need my own copy of that water bill**
  - Ok, I will call the utility service and have them send you a new printed one
- **Hmm, there must be a better way**
  - No, I don't have the software they used to generate it, so you must get it from them
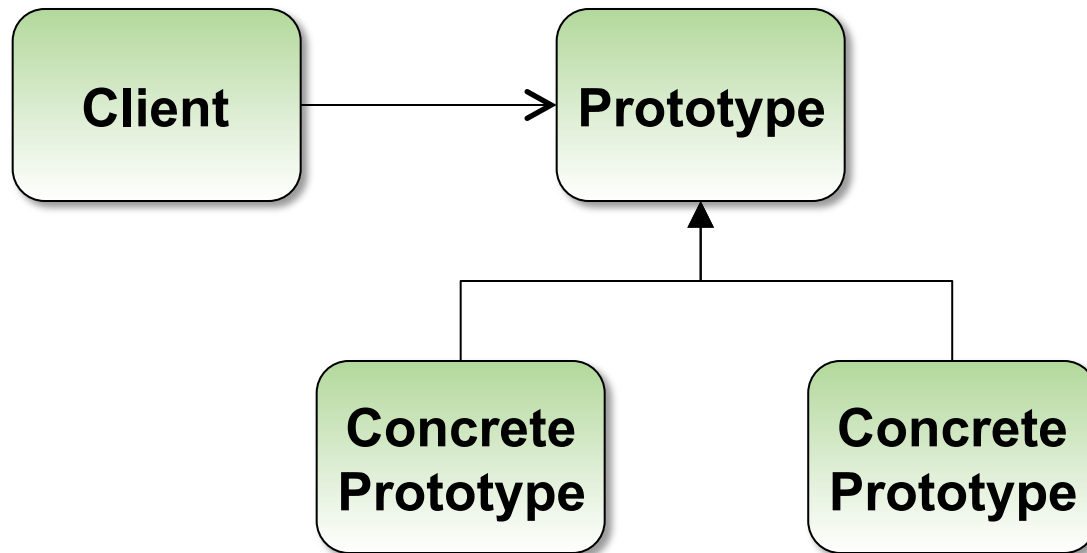
Another Dialog

- **I see you have the water bill there**
  - Yes, I do
- **Can you make a copy of that bill for me**
  - Sure, I will put it on the copy machine
- **Cool, now we both have copies**
  - Yes, but you have to pay the bill!

The Prototype Design

Roles

- **Prototype**
    - Interface or abstract class
    - Defines a method to clone an object

Roles

- **Concrete Prototype**
    - An class implementing the **Prototype**
    - Basically has a way to copy itself
    - Deep or shallow copy

Examples

- **Javascript!**
  - http://www.pluralsight-training.net/microsoft/courses/TableOfContents?courseName=structuring-javascript

Examples

- **C#**
  - IClonable
  - MemberwiseClone
- **Java**
  - Clonable
  - clone

Summary

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- **Examples**