Prototype Pattern

Man kan lave et nyt objekt ved at kopiere en prototype.

Prototype (ColorPrototype)
- Interface med en metode til at kopiere sig selv.

ConcretePrototype (Color)
- Implementerer ColorPrototype metoden til at kopiere sig selv.

Client (ColorManager)
- Laver objekter ved at få en prototype til at lave en kopi af sig selv.

```
abstract class ColorPrototype
{
    public abstract ColorPrototype Clone();
}
```

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```csharp
class Color : ColorPrototype
{
    public int Red { get; set; }
    public int Green { get; set; }
    public int Blue { get; set; }

    public Color(int red, int green, int blue)
    {
        this.Red = red;
        this.Green = green;
        this.Blue = blue;
    }

    public override ColorPrototype Clone()
    {
        return MemberwiseClone() as ColorPrototype;
    }

    public override string ToString()
    {
        return "RGB: " + Red + "," + Green + "," + Blue;
    }
}
```

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```csharp
class ColorManager
{
    public Dictionary<string, ColorPrototype> Colors
    {
        get;
        set;
    } = new Dictionary<string, ColorPrototype>();
}
```

```
Prototype: : RGB: 255,0,0
Clone: RGB: 255,0,0
--------
Prototype: : RGB: 255,0,0
Clone: RGB: 150,0,0
```

```csharp
static void Main(string[] args)
{
    ColorManager colormanager = new ColorManager();
    colormanager.Colors["red"] = new Color(255, 0, 0);
    colormanager.Colors["green"] = new Color(0, 255, 0);
    colormanager.Colors["blue"] = new Color(0, 0, 255);

    Color clone = colormanager.Colors["red"].Clone() as Color;

    Console.WriteLine("Prototype: : " + colormanager.Colors["red"].ToString());
    Console.WriteLine("Clone: " + clone.ToString());
    Console.WriteLine("--------");
    clone.Red = 150;
    Console.WriteLine("Prototype: : " + colormanager.Colors["red"].ToString());
    Console.WriteLine("Clone: " + clone.ToString());

    Console.ReadLine();
}
```