Pattern Matching

Matt Honeycutt

HEROIC CONSULTING

@matthoneycutt   www.trycatchfail.com

Overview

Quick review of C# 7 patterns

New C# 8 pattern matching features

Positional patterns

Property patterns

Switch expressions

Tuple patterns

Patterns in C# 7

The 'is' pattern

```csharp
if (o is Circle c)
{
    Console.WriteLine($"Got a circle: {c.Radius}");
}
```

Switch with 'when'

```csharp
switch (shape)
{
    case Rectangle r when r.Length == r.Width:
        return "Square found!";
}
```

Patterns in C# 8

Positional pattern

```
switch (p)
{
    case Point(0, 0):
        return "Origin!";
}
```

Property Pattern

```
public static bool IsUsBasedWithUkManager(object o)
{
    return o is Employee e &&
        e is { Region: "US", ReportsTo: { Region: "UK" } };
}
```

Tuple pattern

```
public static bool MakesBlue(Color c1, Color c2)
{
    return (c1, c2) is (Color.Red, Color.Green) ||
        (c2, c1) is (Color.Red, Color.Green);
}
```

Patterns in C# 8

```
return shape switch
{
    Rectangle r => r switch
    {
        _ when r.Length == r.Width => "Square!",
        _ => $"Rectangle (l={r.Length} w={r.Width})"
    },
    Circle { Radius: 1 } c => $"Small Circle!",
    Circle c => $"Circle (r={c.Radius})",
    Triangle t => $"Triangle ({t.Side1}, {t.Side2}, {t.Side3})",
    _ => "Unknown Shape"
};
```

Demo time!

Demo

Deconstructors

Positional patterns

Demo

Property patterns

Demo

Switch expressions

Demo

Tuple patterns

Summary

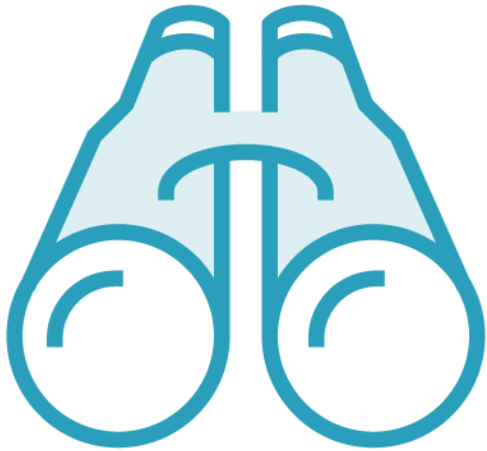**Deconstructors and positional patterns**

Property patterns

Switch expressions

Tuple patterns

Up Next

Indices and ranges