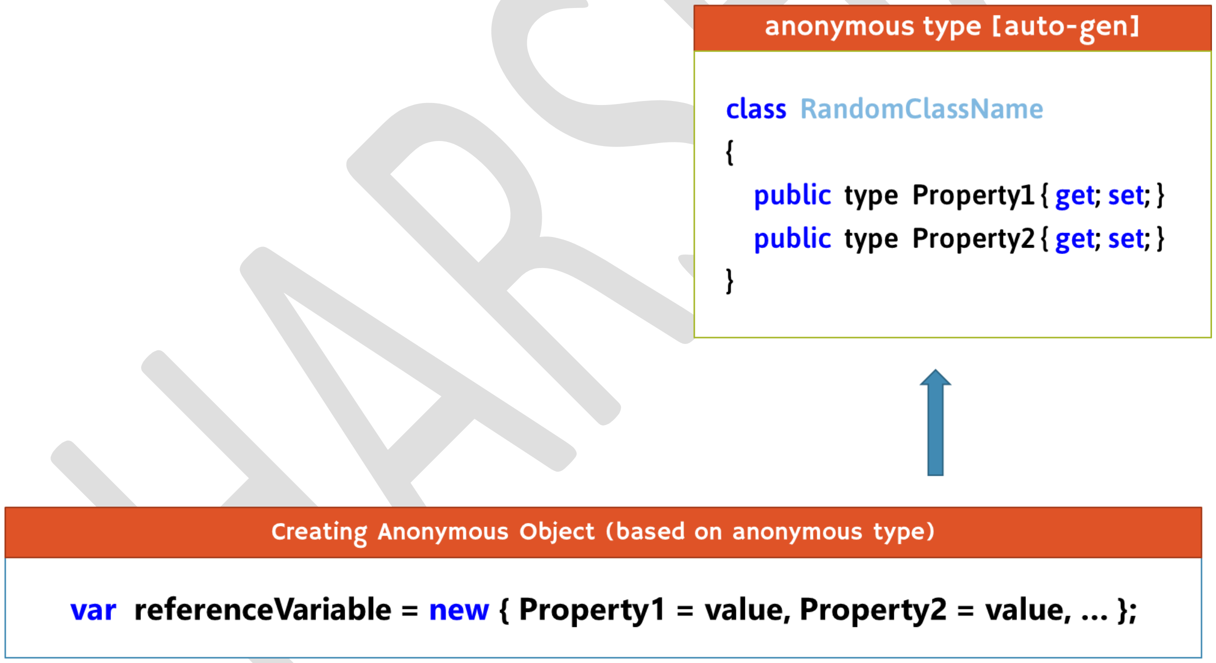
37

Anonymous Types

Introducing Anonymous Types

- When you create an object with a set of properties along with values; automatically C# compiler creates a class (with a random name) with specified properties. It is called as 'anonymous type' or 'anonymous classes'.
- Useful when you want to quickly create a class that contains a specific set of properties.


anonymous type [auto-gen]
Creating Anonymous Object (based on anonymous type)

```
class RandomClassName
{
   public type Property1 { get; set; }
   public type Property2 { get; set; }
}
```

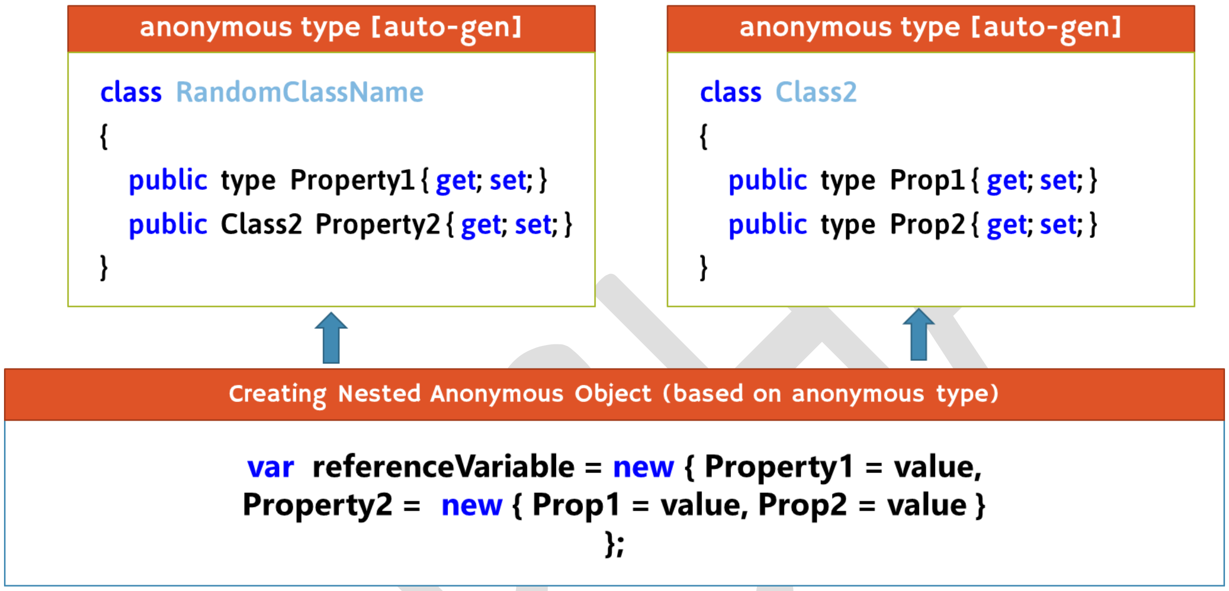
```
var referenceVariable = new { Property1 = value, Property2 = value, ... };
```

- Anonymous types are created by the C# compiler automatically at compilation time.
- The data types of properties of anonymous types will be automatically taken based on the value assigned into the property.
- Anonymous types are derived from System.Object class directly.
- Anonymous types are by default sealed class.

- Properties of anonymous types are by default readonly properties.
- Anonymous types can't contain other members such as normal properties, events, methods, fields etc.
- Properties of anonymous types will be always 'public' and 'readonly'.
- You can't add additional members of anonymous types once after compiler creates it automatically.
- 'null' can't be assigned into property of anonymous type.
- The data type of anonymous objects are always given as "var".
- Anonymous types can't casted to any other type, except into System.Object type.
- You can't create a field, property, event or return type of a method, parameter type as of anonymous type.
- It is recommended to use the anonymous objects within the same method, in which they are created.
    - You can pass anonymous type object to method as parameter as 'System.Object' type; but it's not recommended.

Nested Anonymous Types

- You can nest an anonymous object into another.
- Then two anonymous types will be created.



anonymous type [auto-gen]

```
class RandomClassName
{
   public type Property1 { get; set; }
   public Class2 Property2 { get; set; }
}
```

anonymous type [auto-gen]

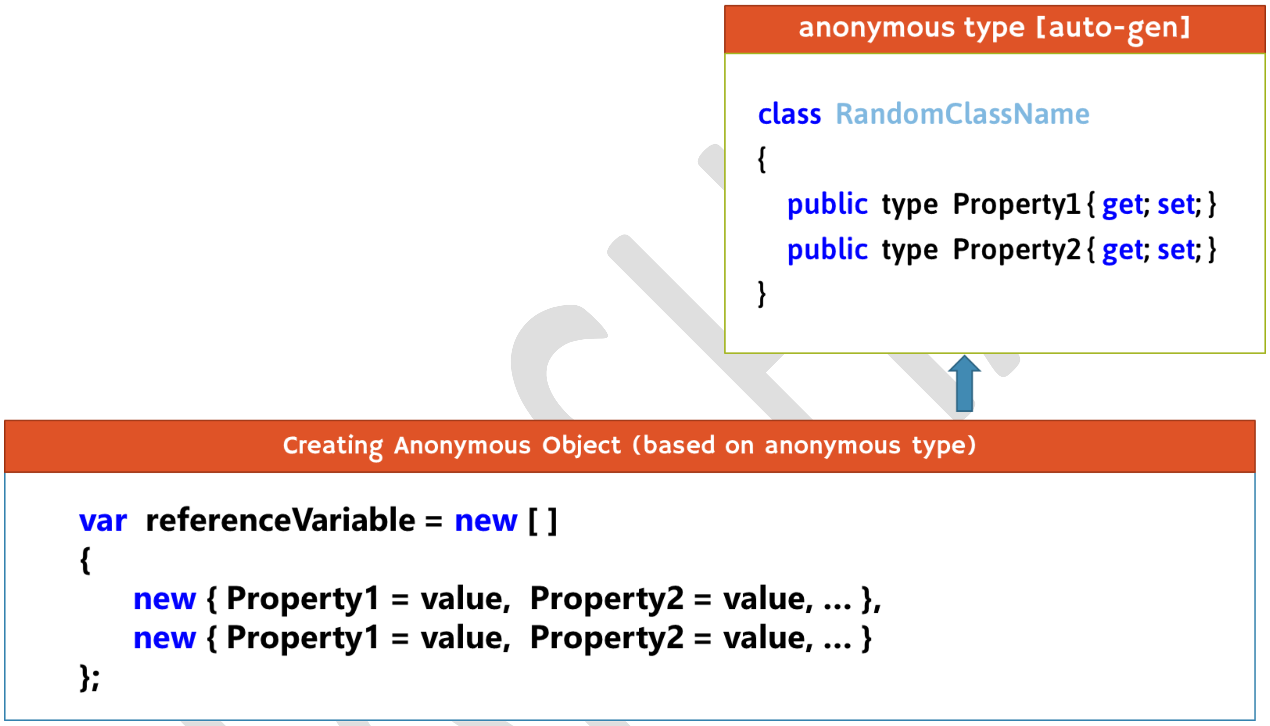
```
class Class2
{
   public type Prop1 { get; set; }
   public type Prop2 { get; set; }
}
```

Creating Nested Anonymous Object (based on anonymous type)

```
var referenceVariable = new { Property1 = value,
Property2 = new { Prop1 = value, Prop2 = value }
};
```

Anonymous Arrays

- You can create 'array of anonymous objects' or 'implicitly typed array' with group of anonymous objects.
- All objects must contain same set of properties.


anonymous type [auto-gen]
Creating Anonymous Object (based on anonymous type)

```
class RandomClassName
{
   public type Property1 { get; set; }
   public type Property2 { get; set; }
}
```

```
var referenceVariable = new [ ]
{
     new { Property1 = value, Property2 = value, ... },
     new { Property1 = value, Property2 = value, ... }
};
```