

Accessing and Checking for Null Values



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Overview



More on `Nullable<T>`

Convenience properties and methods

Comparing `Nullable<T>` instances

Implicit and explicit conversions to/from `Nullable<T>`

C# operators for working with nulls

General purpose conditional operator

Null-coalescing operator

Null-conditional operator

Thread-safe null delegate invocation



More on Nullable<T>

`.HasValue` // false if null, true if valid value

`.Value` // gets underlying value

`.GetValueOrDefault()` // underlying value or default

`.GetValueOrDefault(default)` // value or specified default



Comparing Nullable<T> Instances

```
int? i = 42;
```

```
int? j = 42;
```

```
bool areEqual = i == j; // true
```



Comparing Nullable<T> Instances

```
int? i = 42;
```

```
int? j = null;
```

```
bool areEqual = i == j; // false
```



Comparing Nullable<T> Instances

```
int? i = null;
```

```
int? j = null;
```

```
bool areEqual = i == j; // true
```



Nullable<T> Implicit and Explicit Conversions

```
// Implicit conversion from T --> Nullable<T>
```

```
int i = 42;
```

```
int? j = i; // no explicit cast required
```



Nullable<T> Implicit and Explicit Conversions

// **Explicit conversion** required from Nullable<T> to T

```
int? i = 42;
```

```
int j = i; // error, invalid cast
```

```
int j = (int)i; // explicit cast
```



Overview of C# Null-Checking Operators

Conditional
Operator

`? :`

Null-Coalescing
Operator

`??`

Null-Conditional
Operator

`?.` `?[`



Thread-Safe Null Delegate Invocation

```
PropertyChangedEventHandler eventHandler = PropertyChanged;  
if (eventHandler != null)  
{  
    eventHandler(this, new PropertyChangedEventArgs(...));  
}  
  
PropertyChanged?.Invoke(this, new PropertyChangedEventArgs(...));
```



Summary



HasValue, Value, & GetValueOrDefault()

Comparing Nullable<T> instances

Implicit and explicit conversions to/from
Nullable<T>

C# operators for working with nulls

Conditional operator ? :

Null-coalescing operator ??

Null-conditional operator ?. ?[

PropertyChanged?.Invoke(...)



Next:

Eliminating Null Reference Exceptions

