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int16

This package provides a fixed-width 16-bit signed integer type.

Range and Constants

The Int16 type represents values from -32768 to 32767 (inclusive). The package provides these boundary values as constants:

```

  test "int16 range" {
    inspect(@int16.min_value, content="-32768")
    inspect(@int16.max_value, content="32767")
  }
```

Arithmetic Operations

The Int16 type supports standard arithmetic operations:

```

  test "int16 arithmetic" {
    let a : Int16 = 100
    let b : Int16 = 50

    inspect(a + b, content="150")
    inspect(a - b, content="50")
    inspect(a * b, content="5000")
    inspect(a / b, content="2")

    let max = @int16.max_value
    let min = @int16.min_value
    inspect(max + 1, content="-32768")
    inspect(min - 1, content="32767")
  }
```

Bitwise Operations

Int16 supports standard bitwise operations:

```
1
2   test "int16 bitwise" {
3     let a : Int16 = 0b1100
4     let b : Int16 = 0b1010
5
6
7     inspect(a & b, content="8")
8     inspect(a | b, content="14")
9     inspect(a ^ b, content="6")
10
11
12    let x : Int16 = 8
13    inspect(x << 1, content="16")
14    inspect(x >> 1, content="4")
15  }
```

Comparison Operations

Int16 implements the Compare trait for total ordering:

```
1
2   test "int16 comparison" {
3     let a : Int16 = 100
4     let b : Int16 = 50
5     let c : Int16 = 100
6
7
8     inspect(a == b, content="false")
9     inspect(a == c, content="true")
10
11
12    inspect(a > b, content="true")
13    inspect(b < c, content="true")
14
15
16    inspect(a.compare(b), content="1")
17    inspect(b.compare(c), content="-1")
18    inspect(a.compare(c), content="0")
19  }
```

Default Value

Int16 implements the Default trait, with 0 as its default value:

```
1
2   test "int16 default" {
3     let x = Int16::default()
4     inspect(x, content="0")
5   }
```

Type Coercion and Conversion

Integer literals can be coerced to Int16 when the type is explicitly specified:

```
1
2   test "int16 coercion" {
3     let a : Int16 = 42
4     let b : Int16 = 0xFF
5     let c : Int16 = 0b1111
6     inspect(a, content="42")
7     inspect(b, content="255")
8     inspect(c, content="15")
9   }
```