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# **pyinter Documentation**

***Release 0.1***

**Inti Ocean**

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# Contents

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Pyinter is a python interval library which deals with interval arithmetic and sets of intervals (discontinuous ranges).



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# Interval Class

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**class** `pyinter.Interval`

Instances of `Interval` provide the following operations:

**Standard comparison operators:** `<=`, `<`, `==`, `!=`, `>`, `>=`

Note: comparison is performed solely on the lower value of the `Interval`.

**`x in i`**

Tests `x` to see if it is in the range specified by the `Interval i`.

**`interval | other`**

Performs interval intersection just as `intersect()`

`Interval.intersect(other)`

Returns a new `Interval` representing the intersection of this `Interval` with the other `Interval`

**`interval & other`**

Performs interval union just as `union()`

`Interval.union(other)`

Returns a new `Interval` or an `IntervalSet` representing the union of this `Interval` with the other `Interval`.

If the two intervals are overlapping then this will return an `Interval`, otherwise this returns an `IntervalSet`.

## 1.1 Interval Construction helpers

`pyinter.interval.closed(lower_value, upper_value)`

Helper function to construct an interval object with closed lower and upper.

For example:

```
>>> closed(100.2, 800.9)
[100.2, 800.9]
```

`pyinter.interval.closedopen(lower_value, upper_value)`

Helper function to construct an interval object with a closed lower and open upper.

For example:

```
>>> closedopen(100.2, 800.9)
[100.2, 800.9)
```

`pyinter.interval.open` (*lower\_value*, *upper\_value*)

Helper function to construct an interval object with open lower and upper.

For example:

```
>>> open(100.2, 800.9)
(100.2, 800.9)
```

`pyinter.interval.openclosed` (*lower\_value*, *upper\_value*)

Helper function to construct an interval object with a open lower and closed upper.

For example:

```
>>> openclosed(100.2, 800.9)
(100.2, 800.9]
```



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## *IntervalSet* Class

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**class** `pyinter.IntervalSet` (*iterable=None*)

A class to hold collections of intervals, otherwise known as discontinuous ranges

**intersection** (*other*)

Returns a new `IntervalSet` which represents the intersection of each of the intervals in this `IntervalSet` with each of the intervals in the other `IntervalSet`.

**union** (*other*)

Returns a new `IntervalSet` which represents the union of each of the intervals in this `IntervalSet` with each of the intervals in the other `IntervalSet`



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