

# Table of Contents

Spatial Index Recipes ..... 1

    Using STRtree ..... 1

    Using Quadtree..... 1

# Spatial Index Recipes

## Using STRtree

*Create a STRtree spatial index*

```
STRtree index = new STRtree()
```

*Insert Geometries and their Bounds*

```
index.insert(new Bounds(0,0,10,10), new Point(5,5))
index.insert(new Bounds(2,2,6,6), new Point(4,4))
index.insert(new Bounds(20,20,60,60), new Point(30,30))
index.insert(new Bounds(22,22,44,44), new Point(32,32))
```

*Get the size of the index*

```
int size = index.size
println size
```

```
4
```

*Query the index*

```
List results = index.query(new Bounds(1,1,5,5))
results.each { Geometry geometry ->
    println geometry
}
```

```
POINT (4 4)
POINT (5 5)
```

## Using Quadtree

*Create a Quadtree spatial index*

```
Quadtree index = new Quadtree()
```

### *Insert Geometries and their Bounds*

```
index.insert(new Bounds(0,0,10,10), new Point(5,5))
index.insert(new Bounds(2,2,6,6), new Point(4,4))
index.insert(new Bounds(20,20,60,60), new Point(30,30))
index.insert(new Bounds(22,22,44,44), new Point(32,32))
```

### *Get the size of the index*

```
int size = index.size
println size
```

4

### *Query the index with a Bounds*

```
List results = index.query(new Bounds(1,1,5,5))
results.each { Geometry geometry ->
    println geometry
}
```

```
POINT (30 30)
POINT (32 32)
POINT (5 5)
POINT (4 4)
```

### *Query the entire index*

```
List allResults = index.queryAll()
allResults.each { Geometry geometry ->
    println geometry
}
```

```
POINT (30 30)
POINT (32 32)
POINT (5 5)
POINT (4 4)
```

### *Remove an item from the index*

```
Geometry itemToRemove = allResults[0]
boolean removed = index.remove(itemToRemove.bounds, itemToRemove)
println "Removed? ${removed}"
println "Size = ${index.size}"
```

Removed = true

Size = 3