

## TITLE – KDTree vs QUADTree Analysis

Experiment 1 –

Height of Trees in each experiment has been included in the screenshots of other experiments and not done individually.

1. Parameters –

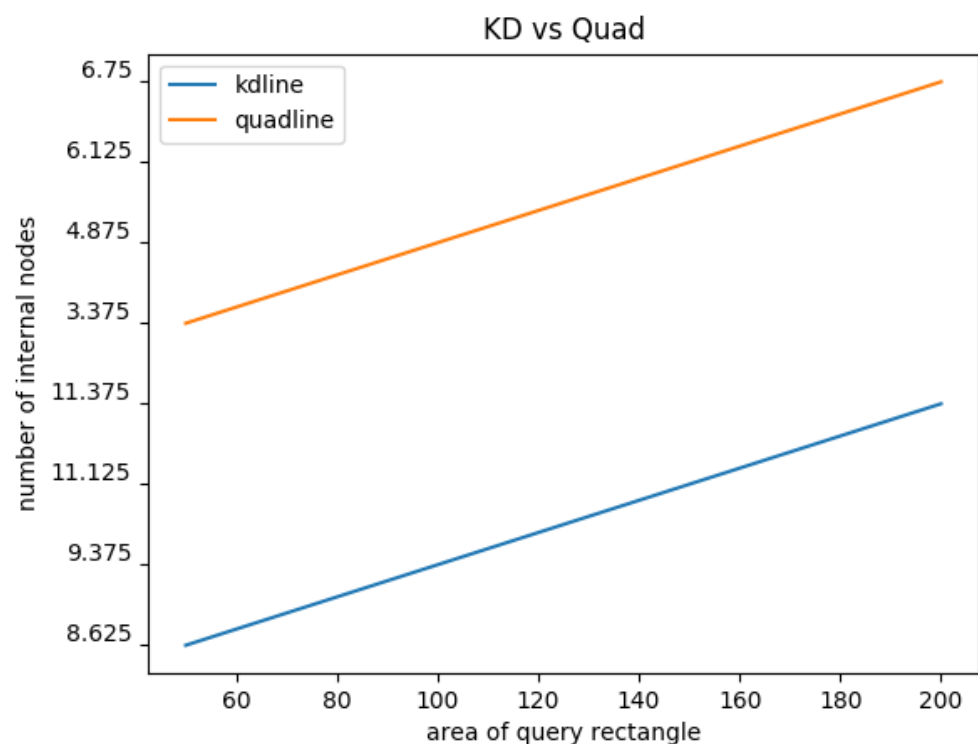
- a. Alpha = 50
- b. Dataset = A
- c. Algorithms used – Kdtree and Quadtree

```
miniproject phase b : bash — Konsole
File Edit View Bookmarks Settings Help
Height is 7
for 50 0.02966982126235962
for 100 0.036206185817718506
for 150 0.04581698775291443
for 200 0.09662094712257385
```

1.1 KD Tree height and running time

```
miniproject phase b : bash — Konsole
File Edit View Bookmarks Settings Help
Height is 3
for 50 0.0436132550239563
for 100 0.06161943078041077
for 150 0.08089178800582886
for 200 0.12449082732200623
```

1.2 Quad Tree Height and running time



## 1.3 KD Tree vs Quad Tree Comparison

### 2. Parameters –

- Alpha = 50
- Dataset = B
- Algorithms used – Kdtree and Quadtree

```
Height is 7
for 50 0.030305415391921997
for 100 0.07488995790481567
for 150 0.08270391821861267
for 200 0.11897468566894531
[50, 100, 150, 200] [12.375, 11.625, 15.875, 13.75]
```

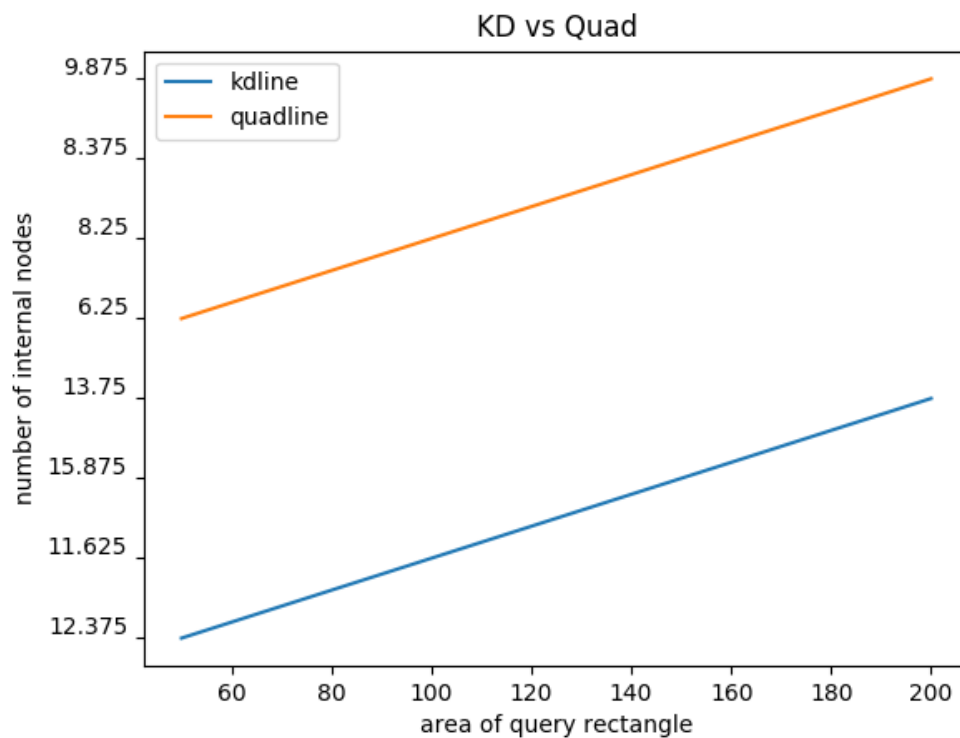
miniproject phase b : bash

### 2.1 KD Tree height and running time

```
Height is 4
for 50 0.08357089757919312
for 100 0.11305469274520874
for 150 0.13446864485740662
for 200 0.15486738085746765
[50, 100, 150, 200] [6.25, 8.25, 8.375, 9.875]
```

miniproject phase b : bash

### 2.2 Quad Tree height and running time



### 2.3 KD tree vs Quad Tree comparison

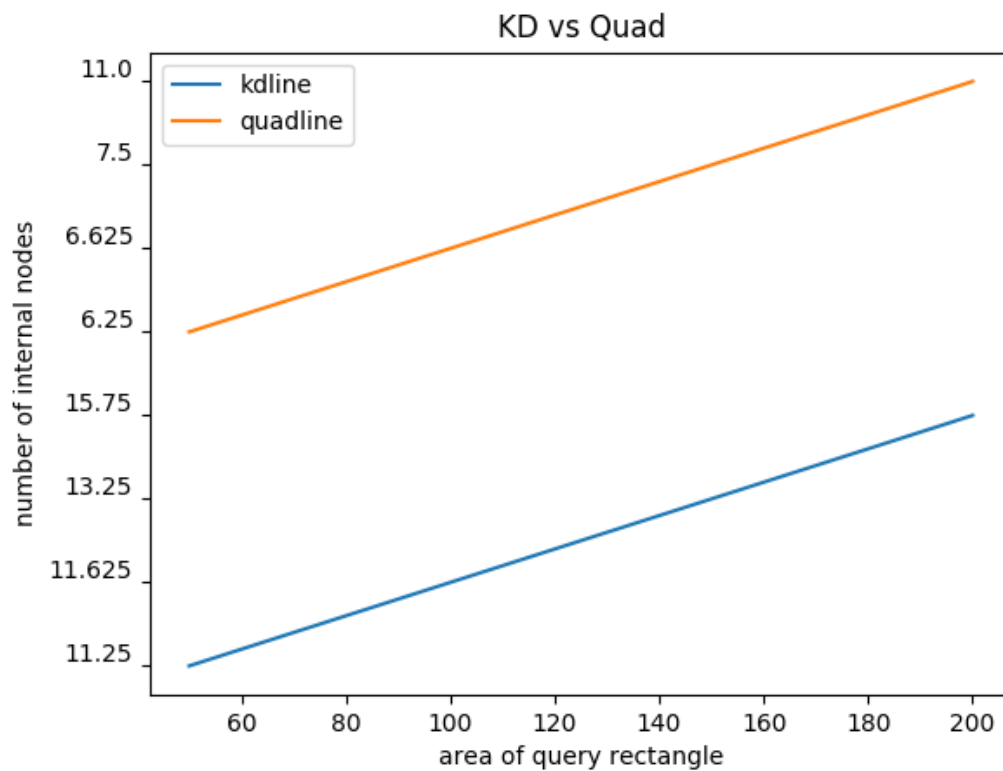
3. Parameters –
- a. Alpha = 50
  - b. Dataset = C
  - c. Algorithms used – Kdtree and Quadtree

```
miniproject phase b : bash — Konsole
File Edit View Bookmarks Settings Help
Height is 8
for 50 0.06583267450332642
for 100 0.16356834769248962
for 150 0.16531136631965637
for 200 0.23364201188087463
miniproject phase b : bash
```

3.1 KD Tree height and running time

```
miniproject phase b : bash — Konsole
File Edit View Bookmarks Settings Help
Height is 4
for 50 0.09102082252502441
for 100 0.14196240901947021
for 150 0.15947547554969788
for 200 0.2422291338443756
miniproject phase b : bash
```

3.2 Quad Tree height and running time



3.3 KD Tree height vs Quad Tree comparison

## EXPERIMENT 2 –

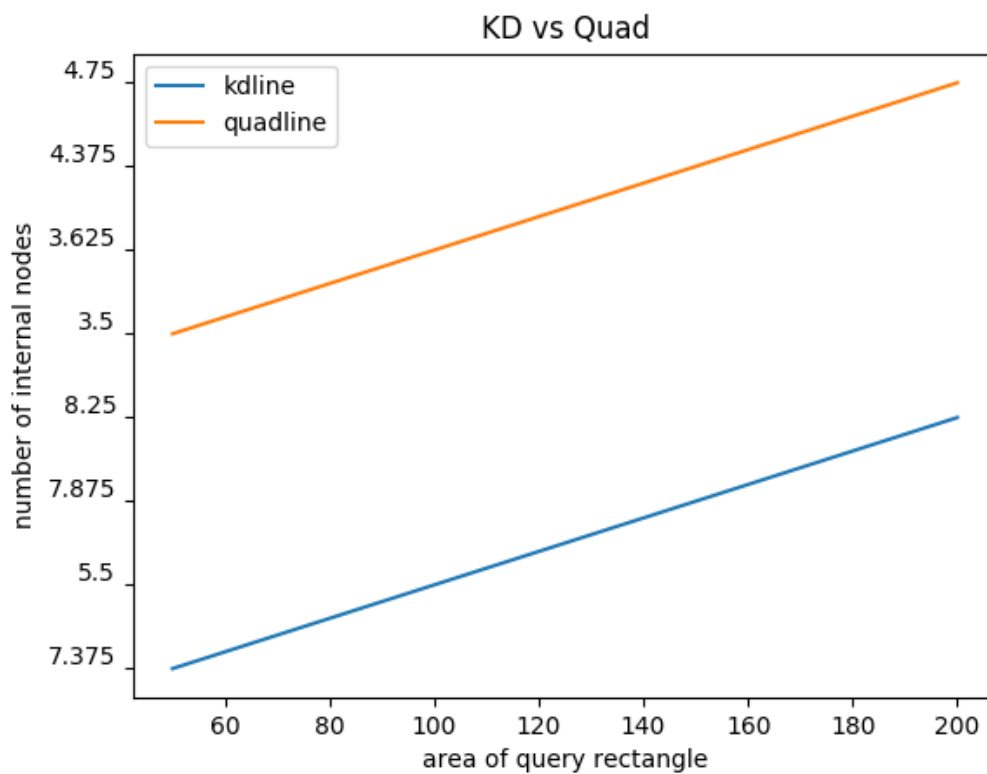
1. Parameters –
  - a. Alpha = 150
  - b. Dataset = A
  - c. Algorithms used – Kdtree and Quadtree

```
miniproject phase b : bash — Konsole
File Edit View Bookmarks Settings Help
Height is 5
for 50 0.030694693326950073
for 100 0.05078962445259094
for 150 0.05831769108772278
for 200 0.05278262495994568
```

1.1 KD Tree height and running time

```
miniproject phase b : bash — Konsole
File Edit View Bookmarks Settings Help
Height is 3
for 50 0.03442871570587158
for 100 0.05414596199989319
for 150 0.10289913415908813
for 200 0.11676070094108582
```

1.2 Quad Tree height and running time



1.3 KD Tree height vs Quad Tree Comparison

## 2. Parameters –

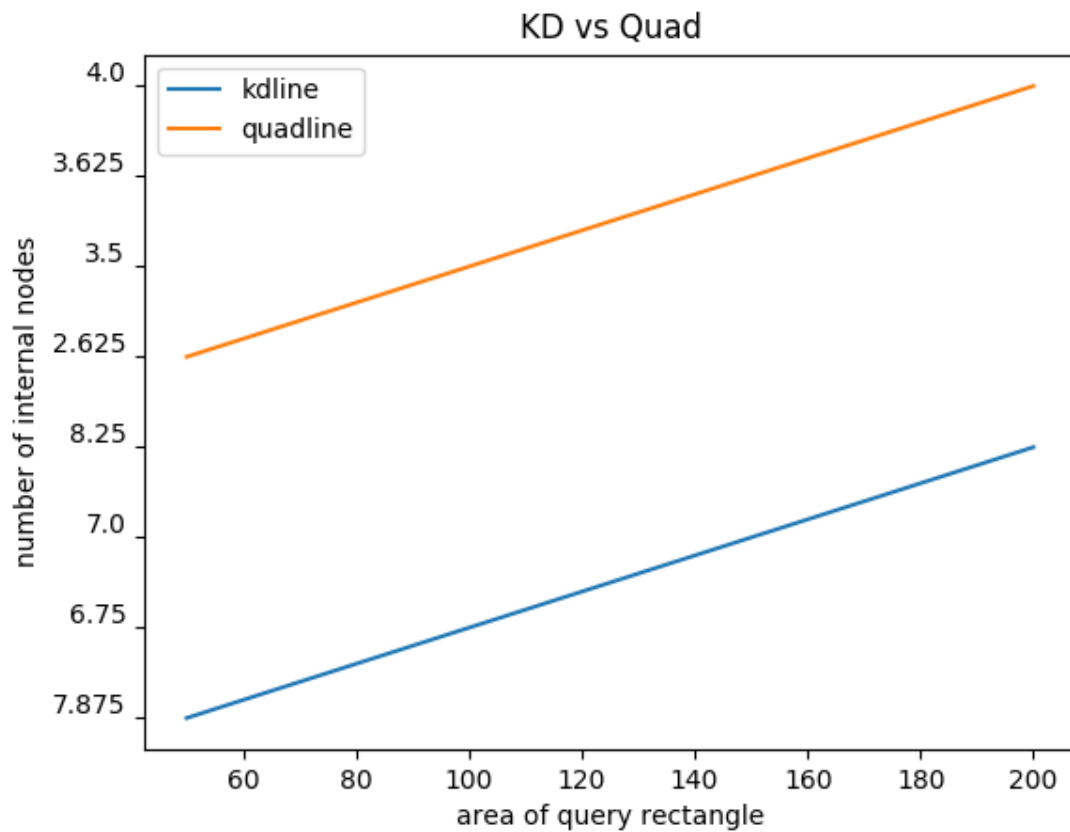
- Alpha = 150
- Dataset = B
- Algorithms used – Kdtree and Quadtree

```
Height is 5
for 50 0.06146442890167236
for 100 0.07843843102455139
for 150 0.11397069692611694
for 200 0.09581133723258972
[50, 100, 150, 200] [7.875, 6.75, 7.0, 8.25]
```

2.1 KD Tree height and running time

```
Height is 3
for 50 0.0721864402294159
for 100 0.12269189953804016
for 150 0.17302948236465454
for 200 0.20112615823745728
[50, 100, 150, 200] [2.625, 3.5, 3.625, 4.0]
```

2.2 Quad Tree height and running time



2.3 KD Tree and Quad Tree comparison

### 3. Parameters –

- a. Alpha = 150
- b. Dataset = C
- c. Algorithms used – Kdtree and Quadtree
- d.

```
Height is 6
for 50 0.09337809681892395
for 100 0.15272033214569092
for 150 0.08317461609840393
for 200 0.2221452295780182
[50, 100, 150, 200] [9.0, 9.375, 8.625, 10.75]
```

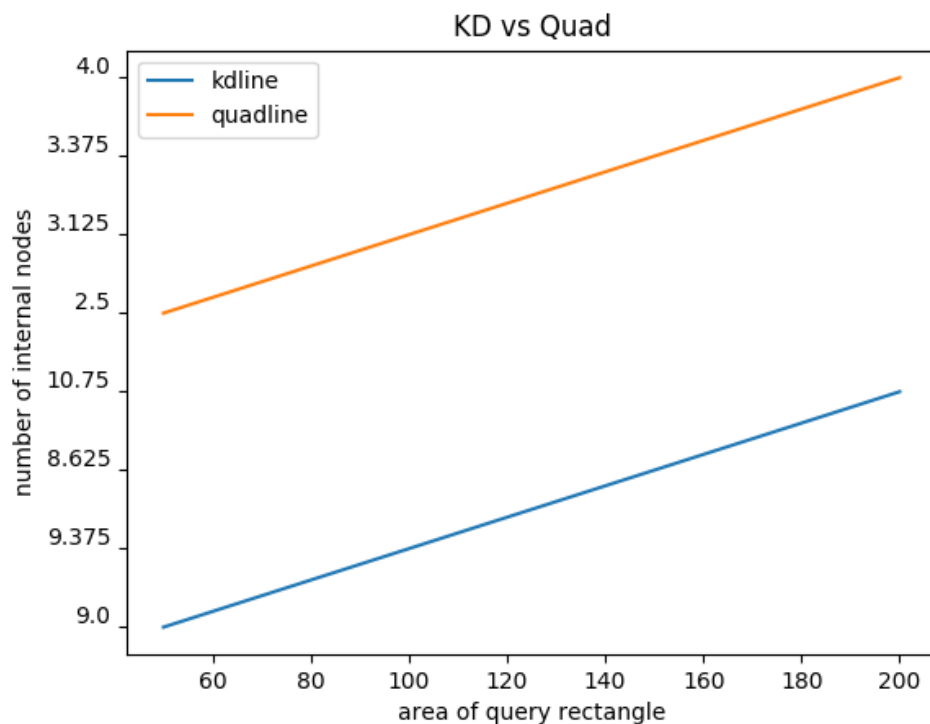
miniproject phase b : bash

3.1 KD Tree height and running time

```
Height is 3
for 50 0.11415848135948181
for 100 0.2407645583152771
for 150 0.28293269872665405
for 200 0.37047240138053894
[50, 100, 150, 200] [2.5, 3.125, 3.375, 4.0]
```

miniproject phase b : bash

3.2 Quad Tree height and running time



3.3 KD Tree And Quad Tree Comparison

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