test

October 30, 2022

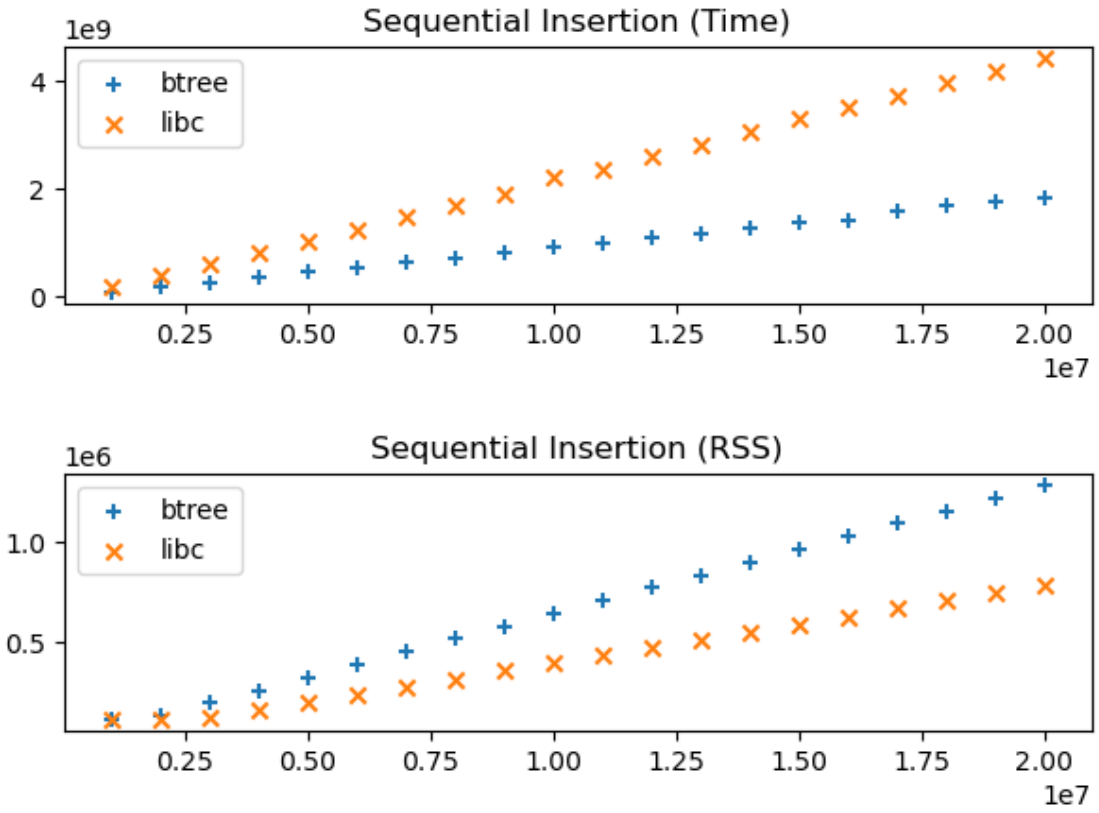
[ ]:
```
import subprocess as sp
import json as js
import matplotlib.pyplot as plt
```

[ ]:
```
def run(suite, *args, step=1000000, limit=20000000):
    i = step
    idx = (list(), list())
    time = (list(), list())
    rss = (list(), list())
    while i <= limit:
        output = sp.run(["build/btree", suite, "btree", str(i), *args],␣
 ↪capture_output=True)
        obj = js.loads(output.stdout)
        time[0].append(obj["time"])
        rss[0].append(obj["rss"])
        idx[0].append(i)
        i = i + step
    i = step
    while i <= limit:
        output = sp.run(["build/btree", suite, "libc", str(i), *args],␣
 ↪capture_output=True)
        obj = js.loads(output.stdout)
        time[1].append(obj["time"])
        rss[1].append(obj["rss"])
        idx[1].append(i)
        i = i + step
    return idx, time, rss
```

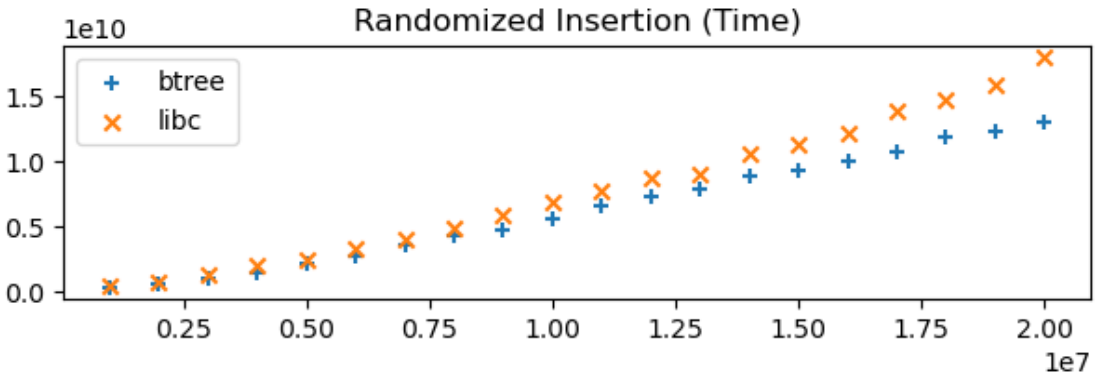
[ ]:
```
def run_and_plot(title, suite, *args, step=1000000, limit=20000000):
    idx, time, rss = run(suite, *args, step=step, limit=limit)
    fig = plt.figure()
    ax1 = fig.add_subplot(211)
    ax1.set_title(title + " (Time)")
    ax1.scatter(idx[0], time[0], label="btree", marker='+')
    ax1.scatter(idx[1], time[1], label="libc", marker='x')
    ax1.legend()
```

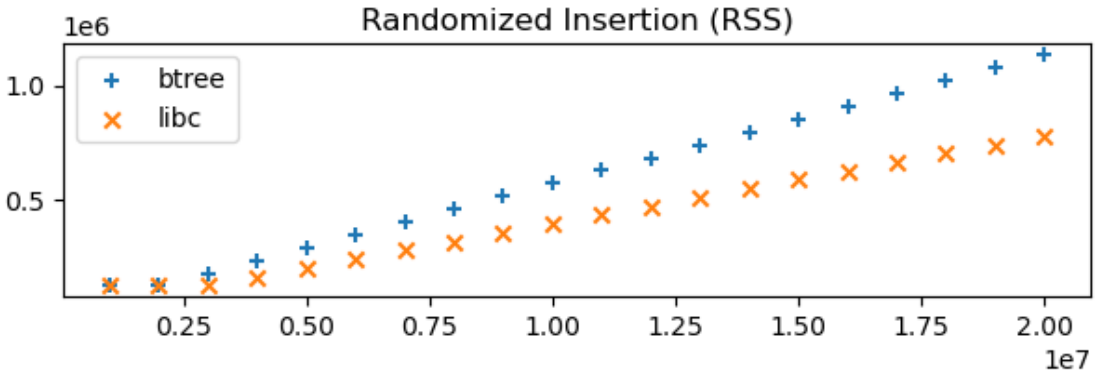
```
    ax2 = fig.add_subplot(212)
    ax2.set_title(title + " (RSS)")
    ax2.scatter(idx[0], rss[0], label="btree", marker='+')
    ax2.scatter(idx[1], rss[1], label="libc",  marker='x')
    ax2.legend()
    fig.tight_layout(pad=2)
```

[ ]:
```
run_and_plot("Sequential Insertion", "seqins")
```

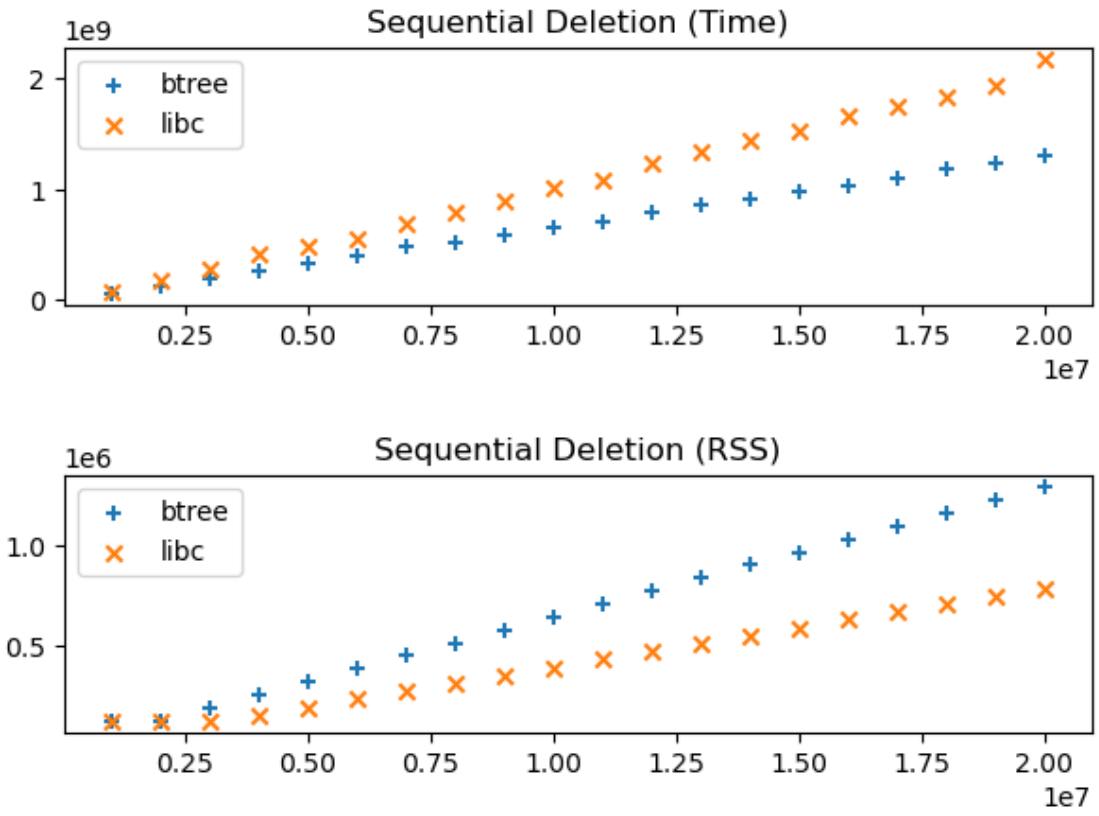


[ ]:
```
run_and_plot("Randomized Insertion", "randins", "63641362238467930O5")
```

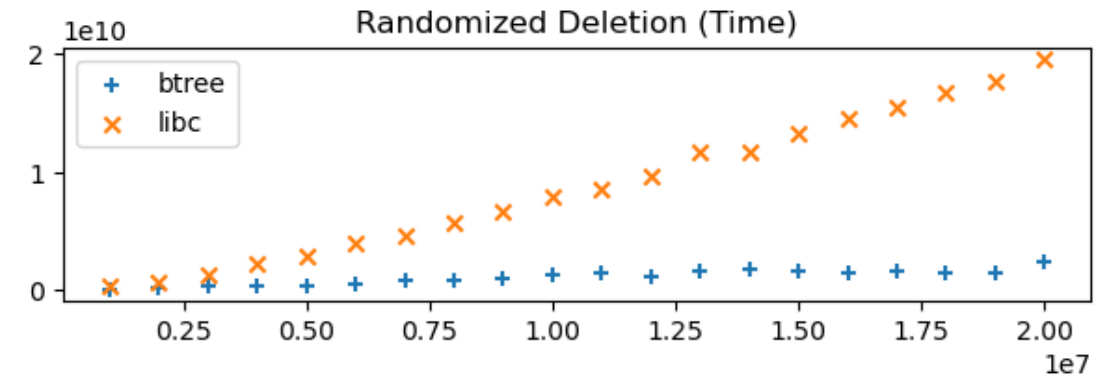


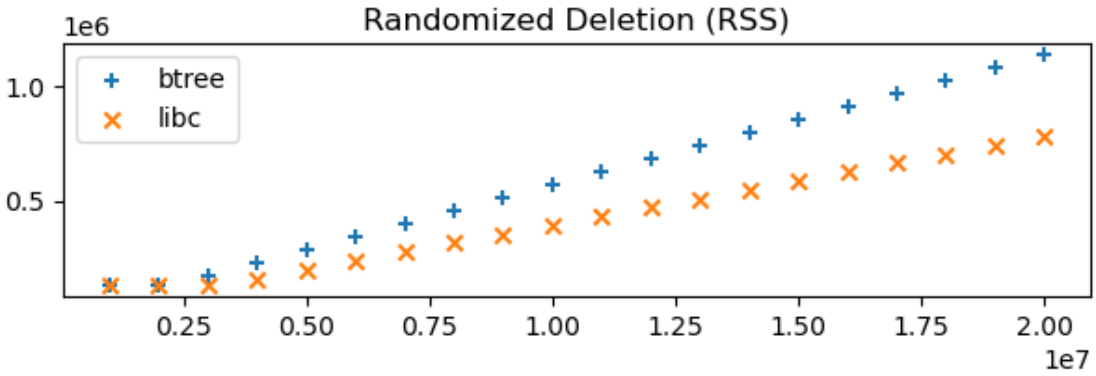


[ ]:
```
run_and_plot("Sequential Deletion", "seqdel")
```

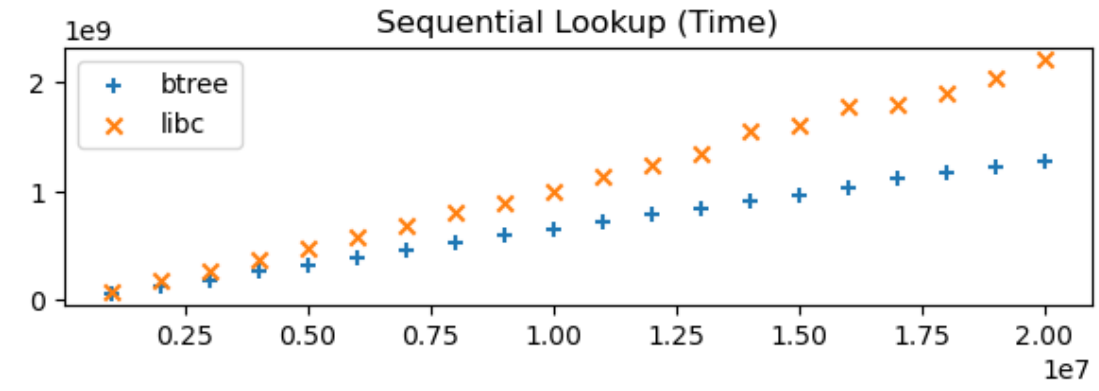


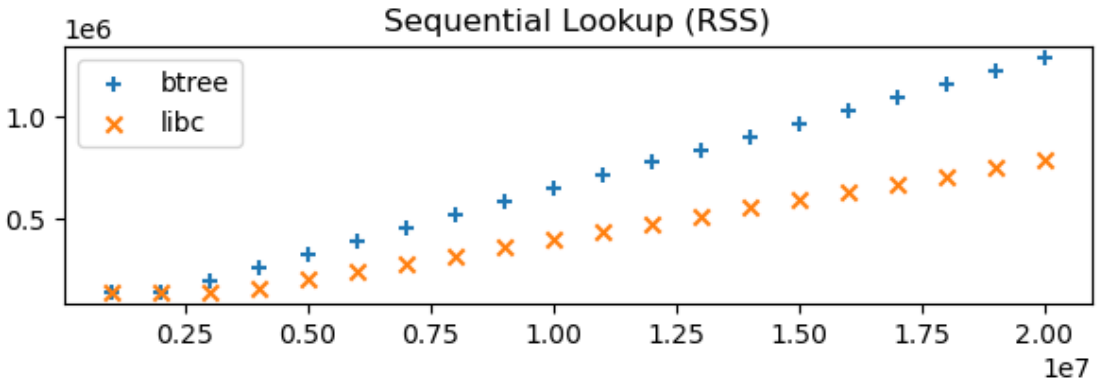
[ ]:
```
run_and_plot("Randomized Deletion", "randdel", "6364136223846793005")
```



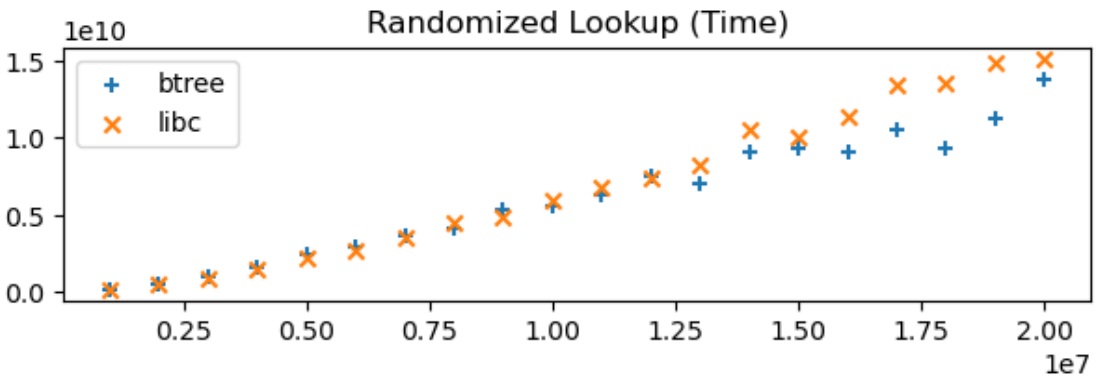


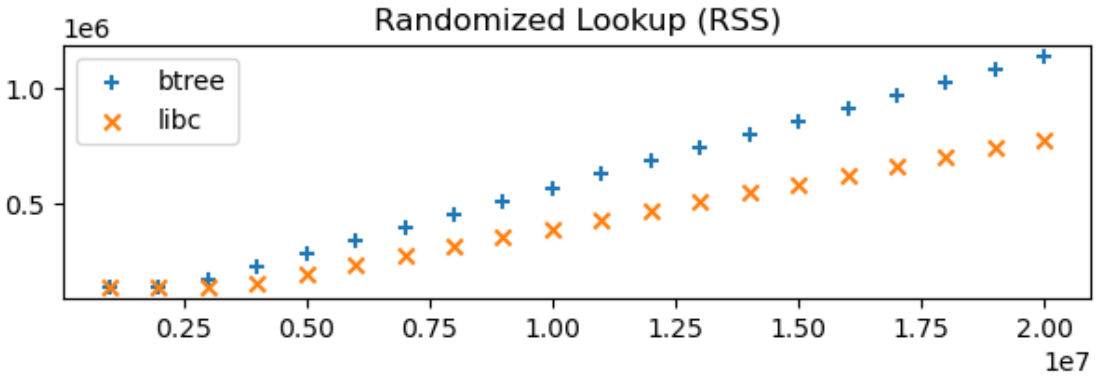
[ ]:
```
run_and_plot("Sequential Lookup", "seqlookup")
```



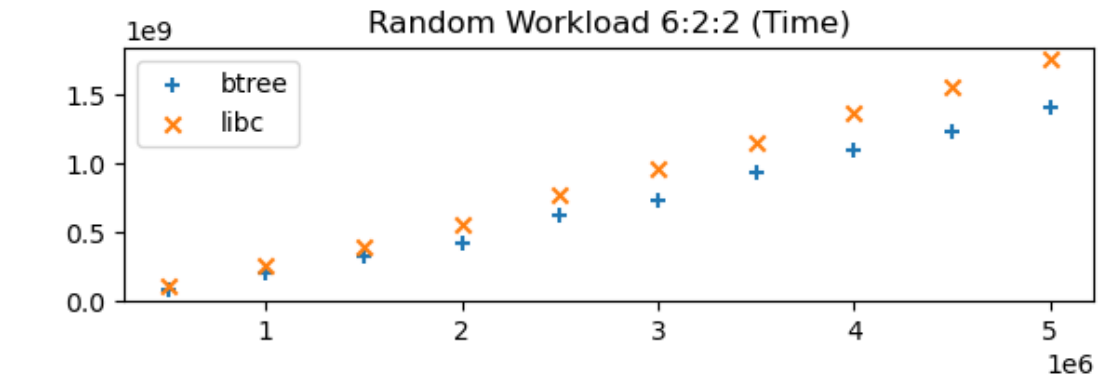


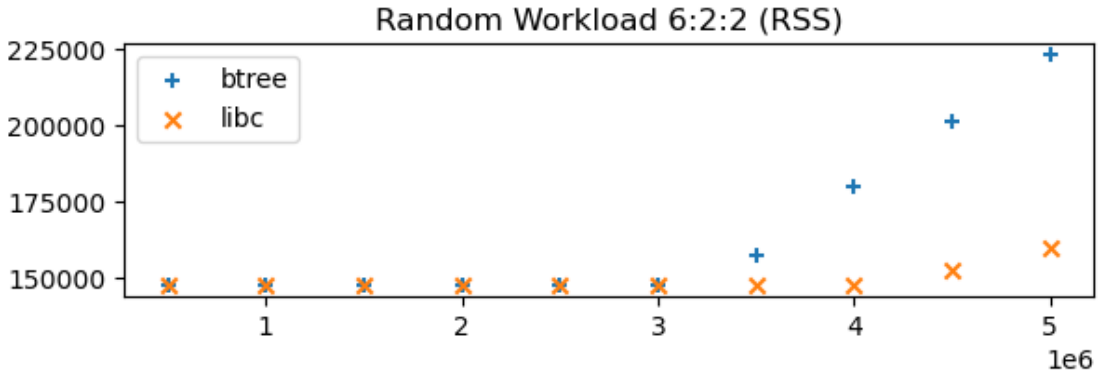
[ ]:
```
run_and_plot("Randomized Lookup", "randlookup", "6364136223846793005")
```



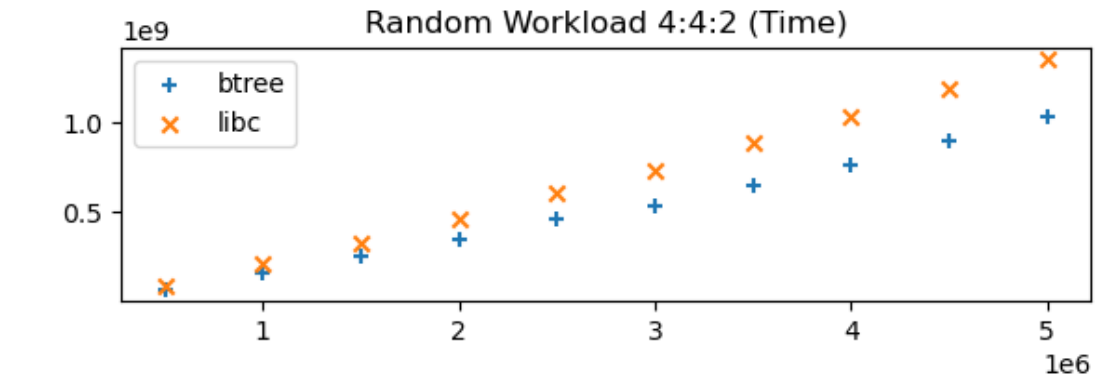


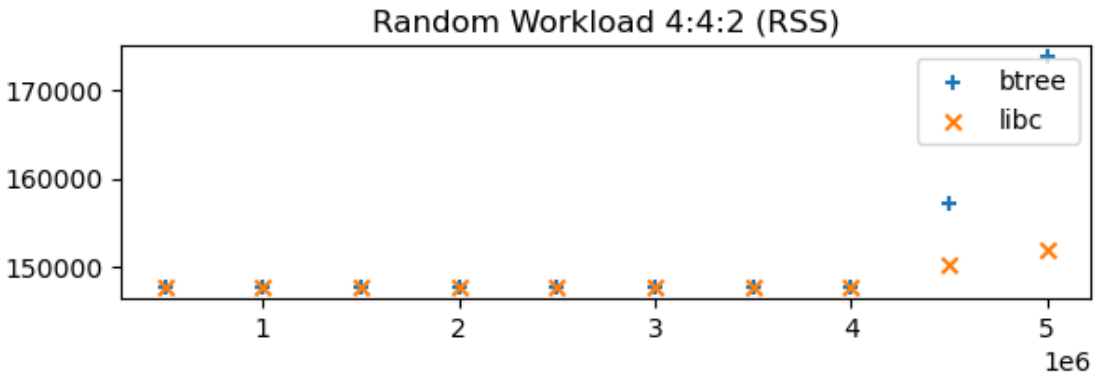
[ ]:
```
run_and_plot("Random Workload 6:2:2", "randwork", "6364136223846793005", "0.6",␣
↪"0.2", step=500000, limit=5000000)
```



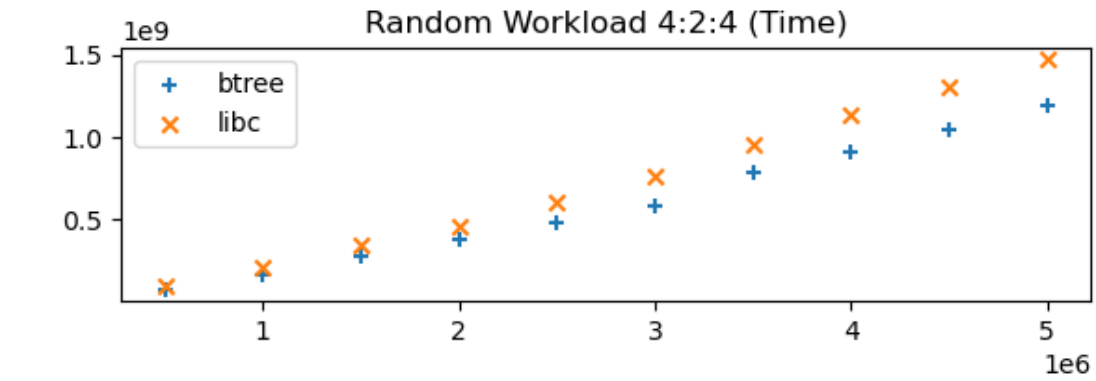


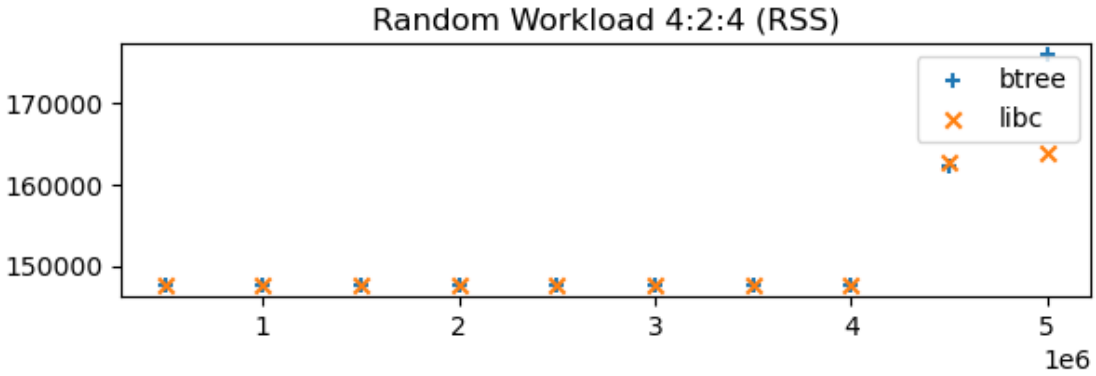
[ ]:
```
run_and_plot("Random Workload 4:4:2", "randwork", "6364136223846793005", "0.4",␣
↪"0.4", step=500000, limit=5000000)
```



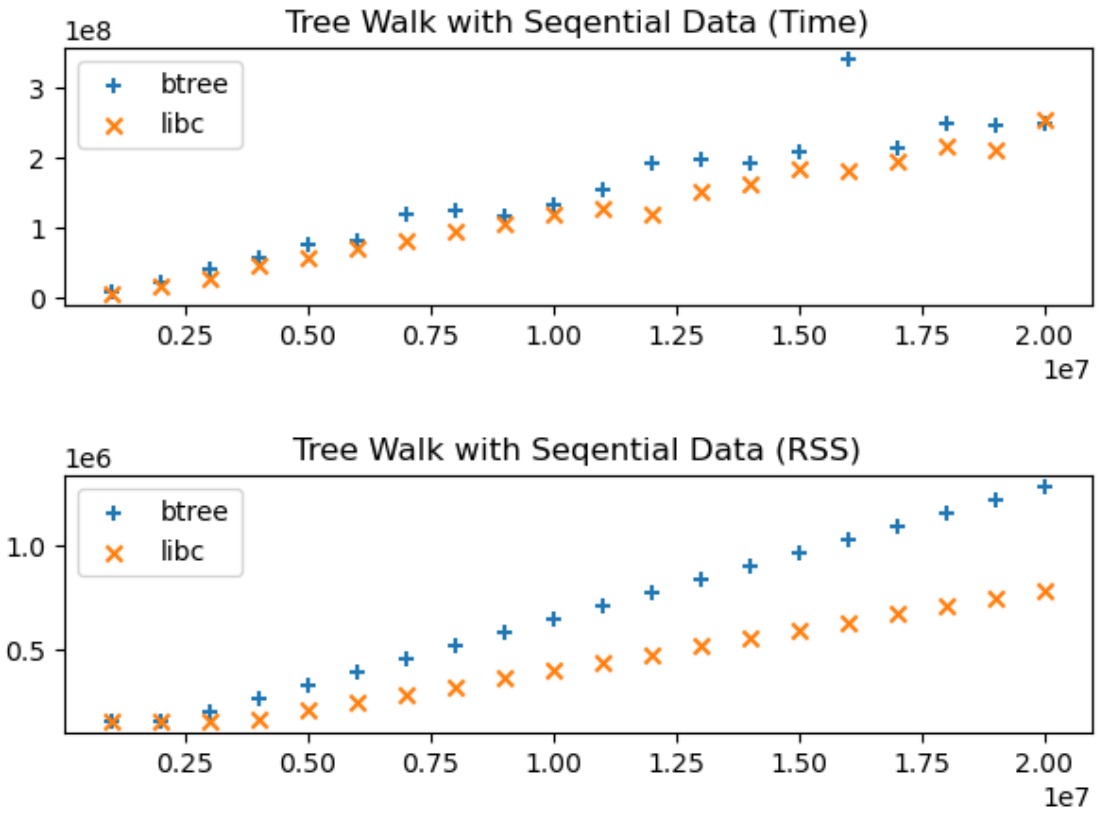


[ ]:
```
run_and_plot("Random Workload 4:2:4", "randwork", "6364136223846793005", "0.4",␣
↪"0.2", step=500000, limit=5000000)
```

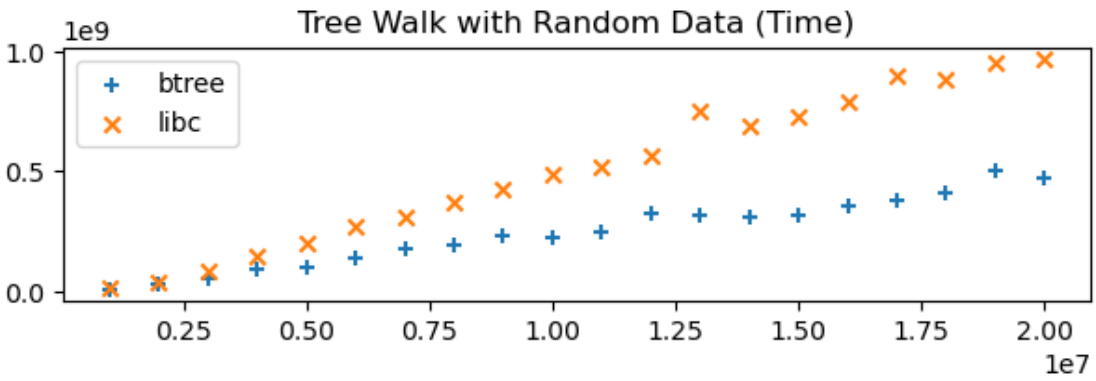


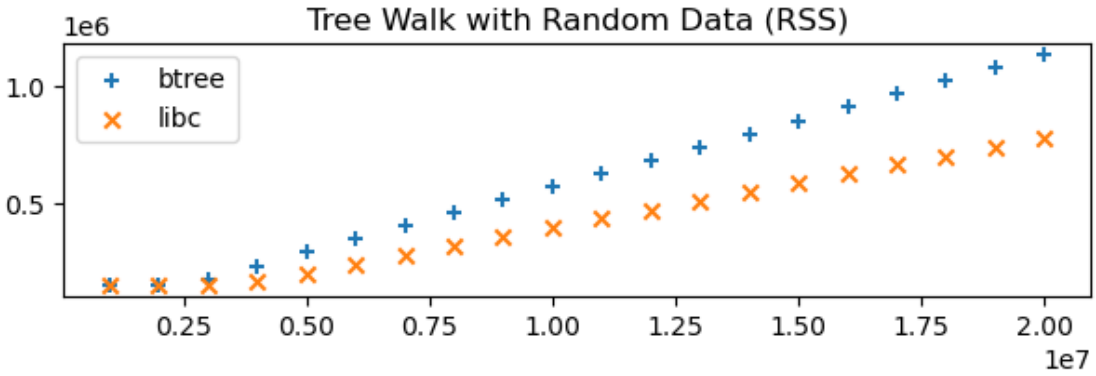


[ ]:
```
run_and_plot("Tree Walk with Seqential Data", "walkseq")
```



[ ]:
```
run_and_plot("Tree Walk with Random Data", "walkrand", "6364136223846793005")
```


Tree Walk with Random Data (Time)
1e9
1.0
0.5
0.0
btree
libc
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
1e7


Tree Walk with Random Data (RSS)
1e6
1.0
0.5
btree
libc
0.25
0.50
0.75
1.00
1.25
1.50
1.75
2.00
1e7

[ ]: