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**Console Output:**

Building a binary tree for dict.txt...

Building a hash table for dict.txt...

rehashed...

previous table size: 53, new table size: 107, current unique word count 27,

current load factor: 0.252336

rehashed...

previous table size: 107, new table size: 223, current unique word count 54,

current load factor: 0.242152

rehashed...

previous table size: 223, new table size: 449, current unique word count 112,

current load factor: 0.249443

rehashed...

previous table size: 449, new table size: 907, current unique word count 225,

current load factor: 0.248071

rehashed...

previous table size: 907, new table size: 1823, current unique word count 454,

current load factor: 0.24904

rehashed...

previous table size: 1823, new table size: 3659, current unique word count 912,

current load factor: 0.249248

After preprocessing, the unique word count is 995. Current load ratio is 0.271932

Running queries in query1.txt...

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Benchmark results for Binary Search Tree (BST):

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+ Elapsed time: 81088ns

+ Average query time: 3378 ns

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Benchmark results for Hash Table:

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+ Elapsed time: 41584ns

+ Average query time: 1732 ns

+ Speed up: 1.94998x

Time measurements in ns (N, 4096N):

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bst

N time

1 14197

2 15659

4 38557

8 76958

16 152219

32 298209

64 522546

128 926424

256 1857023

512 2571951

1024 4556104

2048 9577665

4096 18145801

ht

N time

1 22439

2 8691

4 16515

8 42900

16 85803

32 146378

64 267286

128 543815

256 1089460

512 2017785

1024 4104826

2048 8046089

4096 16160007

**Graph:**