

The cost of the optimal binary search tree is: 3.12

The structure of the optimal binary search tree is:

k5 is the root

k2 is the left child of k5

k1 is the left child of k2

d1 is the right child of k1

d0 is the left child of k1

k3 is the right child of k2

d2 is the left child of k3

k4 is the right child of k3

d4 is the right child of k4

d3 is the left child of k4

k7 is the right child of k5

k6 is the left child of k7

d6 is the right child of k6

d5 is the left child of k6

d7 is the right child of k7