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CS 590 Homework 5: Application Exercises

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Problem 6.7.20:

To be specific this example is an application of cuckoo hashing. Therefore, an efficient scheme for processing the list of Bear-Anteater half-time scores before the game is :

The way we perform the get(k) method in this scheme is quite simple:

• get(k): if T0[h0(k)] = NULL and T0[h0(k)].key = k then

return T0[h0(k)] if T1[h1(k)] = NULL

and T1[h1(k)].key = k

then return T1[h1(k)] return NULL

This is clearly a constant-time operation, and performing the remove(k) operation is similar:

• remove(k): if T0[h0(k)] = NULL

and T0[h0(k)].key = k then

temp ← T0[h0(k)] T0[h0(k)] ← NULL

return temp if T1[h1(k)] = NULL

and T1[h1(k)].key = k then

temp ← T1[h1(k)] T1[h1(k)] ← NULL

return temp

return NULL.