CSC263 Tutorial #5

Hash tables

February 10, 2023

Things covered in this tutorial

- ⋆ What's a Hash table?
- ⋆ What are the two ways to address hash collisions covered in this course?

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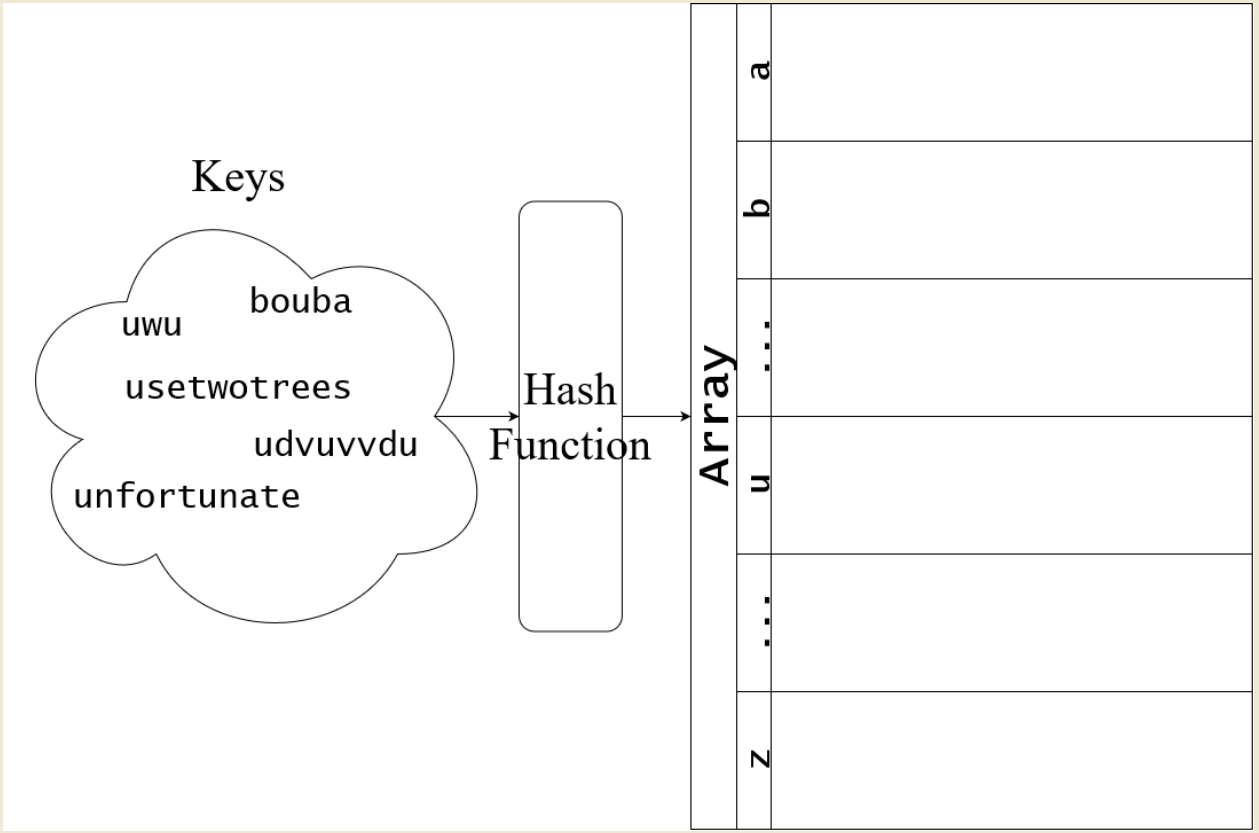

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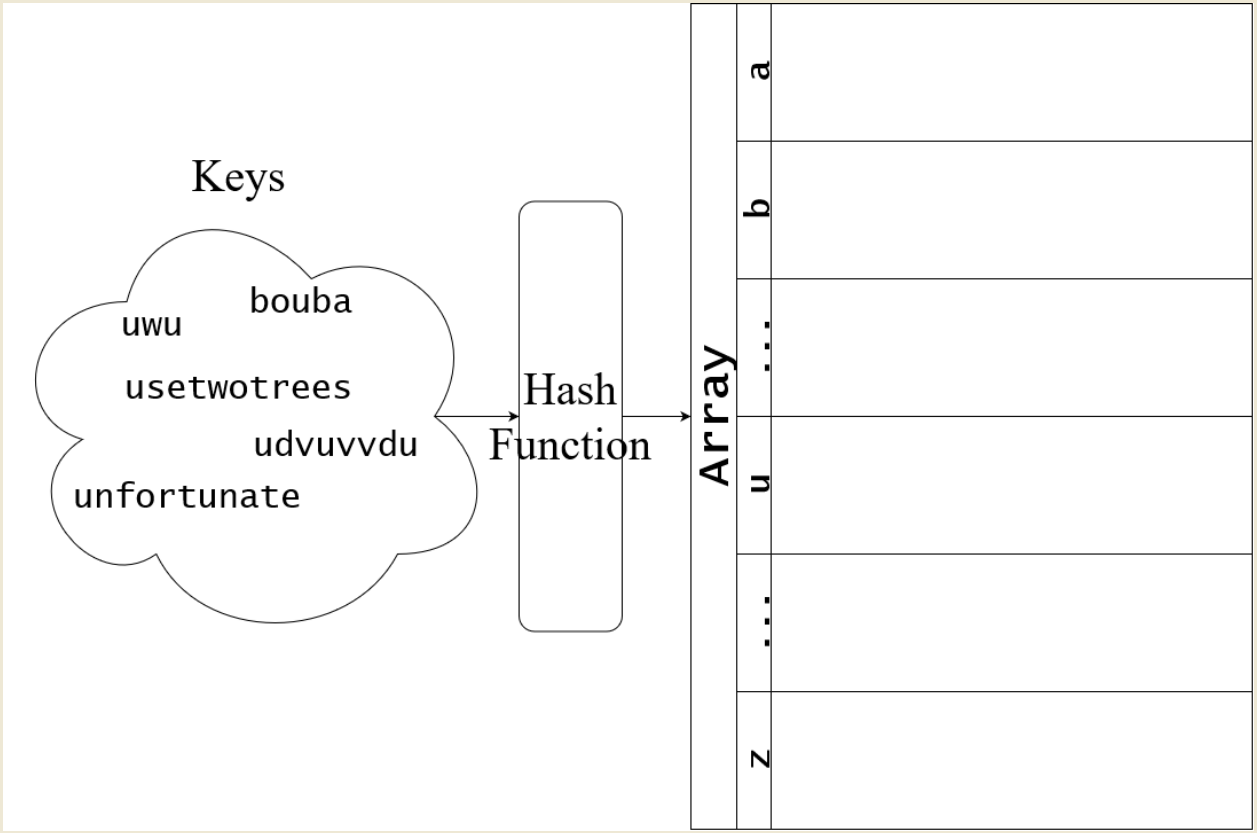
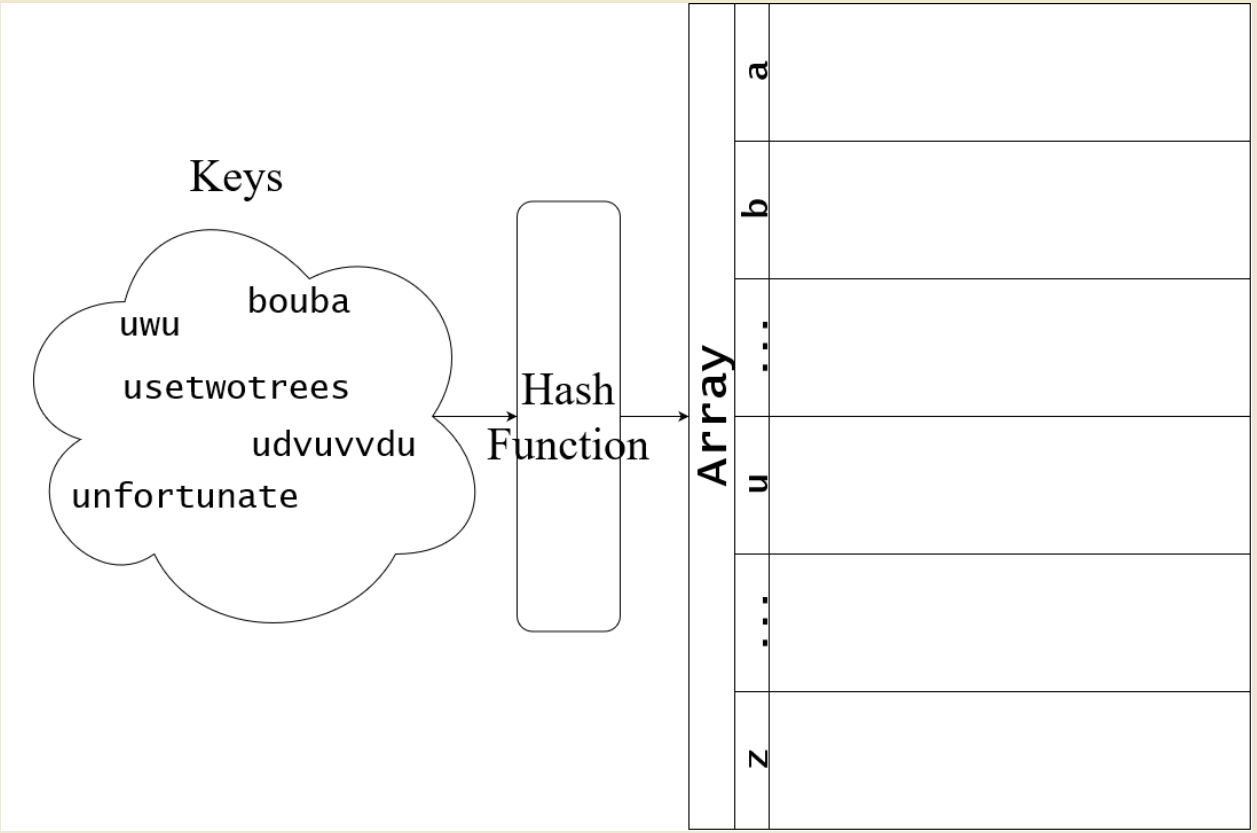


Problem: What if two distinct keys get mapped to the same address?

Hash Tables: Chaining

Chaining: Each array entry is a linked list.



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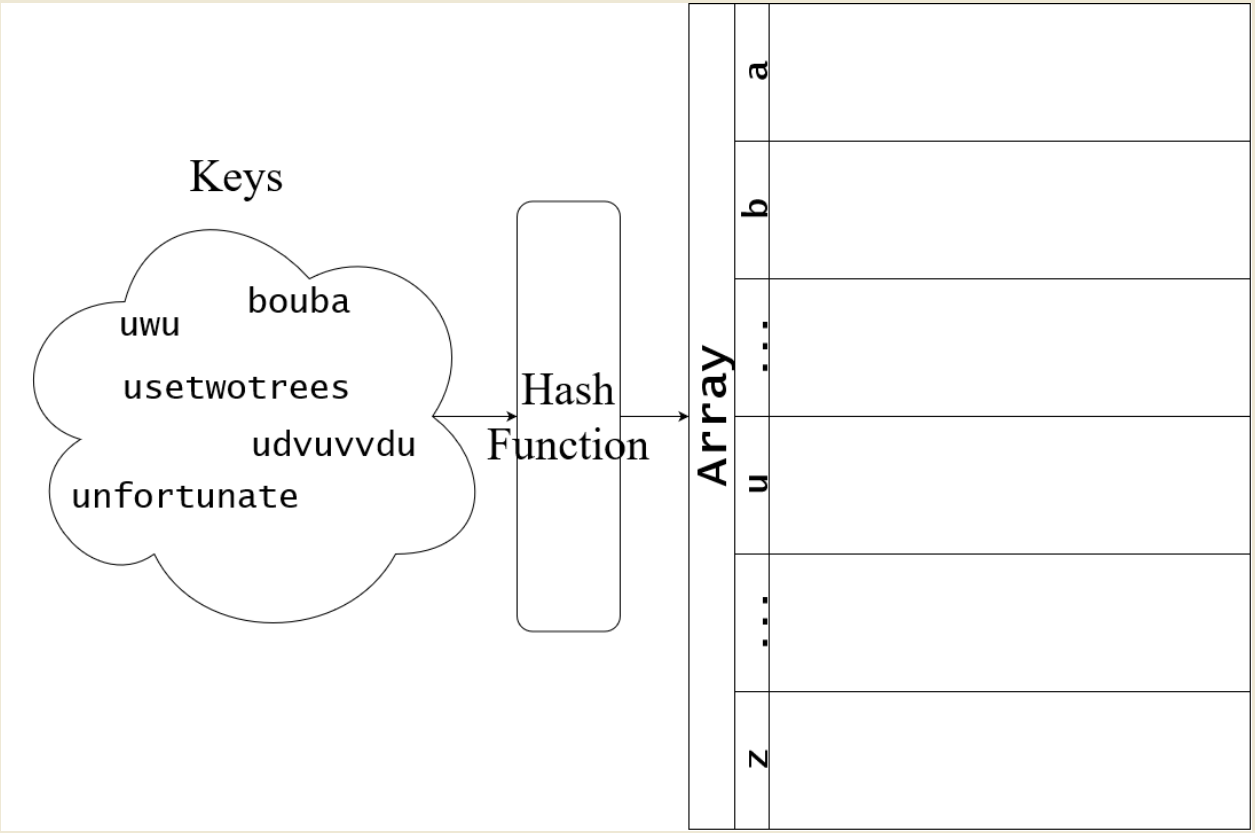

Task: Referring to the above diagram, assume the hash function is

$$h(w) = \text{first letter of } w.$$

Store all keys (in the "Keys" cloud) in the array.

Hash Tables: Chaining

Very fast![1] Average case:

- $\mathcal{O}(1)$ Insert.
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Question: How would we sort with a hash table?

Answer: Don't try it; this is a terrible idea. Why not?

Tutorial Activity: Try Question 1(a) from the tutorial activities!

Hash Tables 2: Electric Boogaloo

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