Data Structures I : Hash Tables

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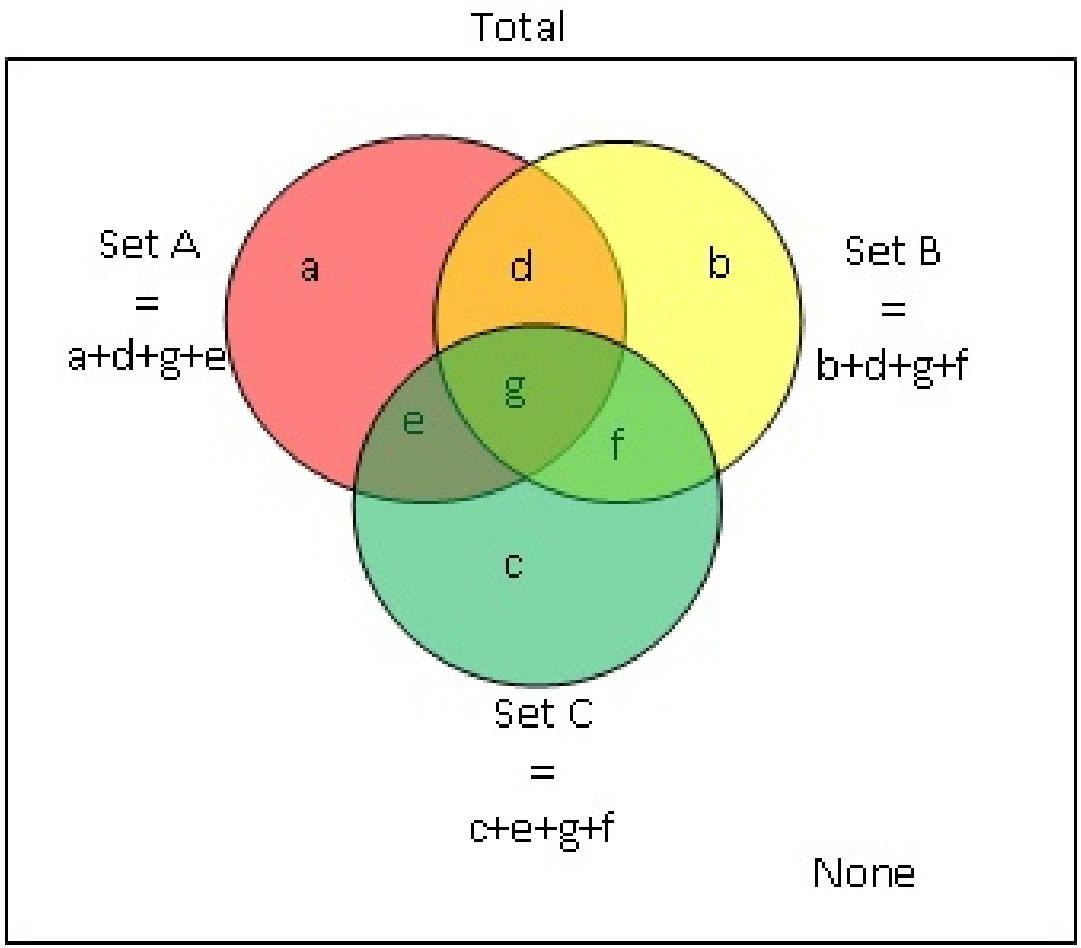
Cocktail of the day: Strawberry Daiquiri

Disclaimer: Keep alcohol out of the hands of minors.

Cocktail of the day: Strawberry Daiquiri

- 45 white rum
- 25 lime juice
- 15 simple syrup
- 4 strawberries

Sets may be implemented with hash tables



Introduction

A hash table is a data structure that can map keys to values.

`https://www.youtube.com/watch?v=h2d9b_nEzoA`

Open Hash

In open hashing, keys are stored in linked lists attached to cells of a hash table.

`https://www.cs.usfca.edu/~galles/visualization/OpenHash.html`

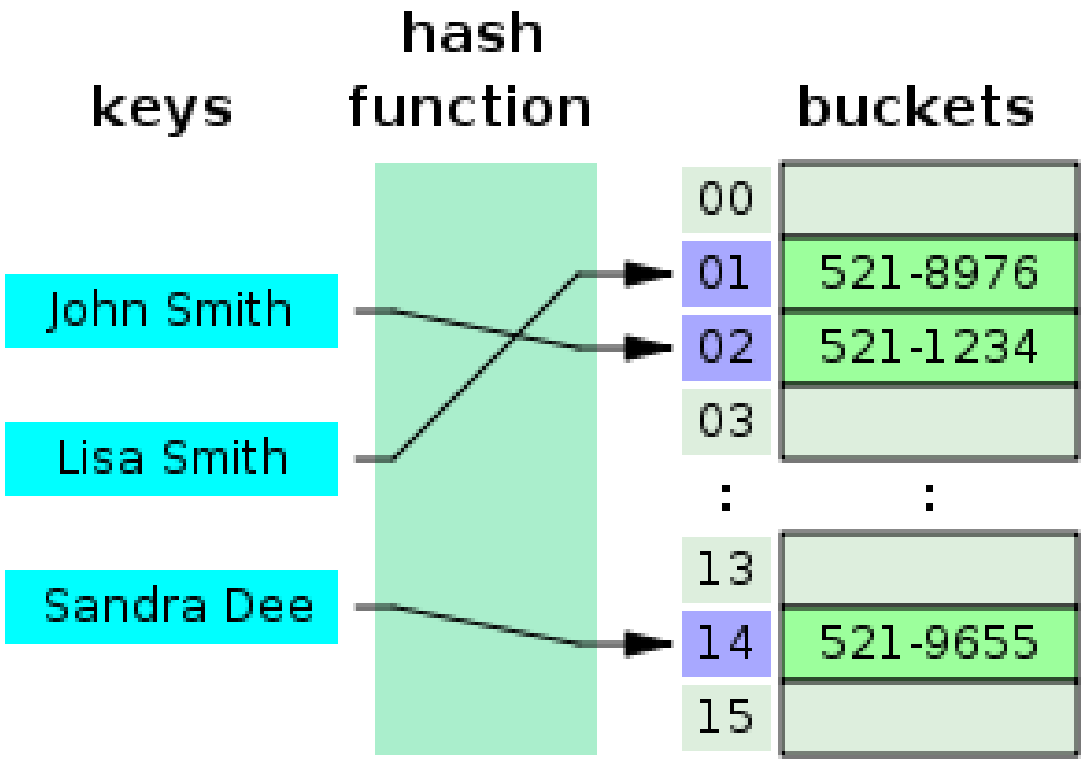
Closed Hash

In closed hashing, all entry records are stored in the array. When a new entry has to be inserted, the buckets are examined, starting with the hashed-to slot and proceeding in some probe sequence, until an unoccupied slot is found.

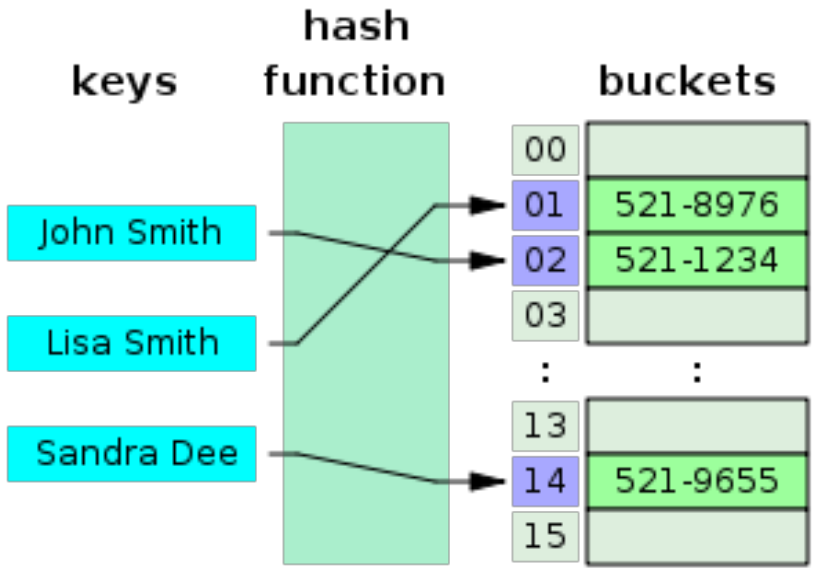
`https://www.cs.usfca.edu/~galles/visualization/ClosedHash.html`

Closed-Hash Implementation

Well-known probe sequences include: linear probing, quadratic probing and double hashing.



Closed-Hash Implementation

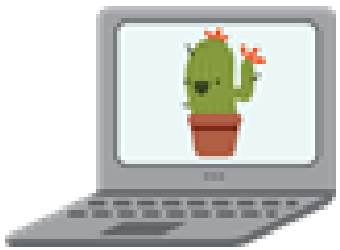


Simulation: `http://visualgo.net/hashtable.html`

Hash Tables in Java

- In Java, Class `HashTable` is deprecated.
- Now, we use class `HashMap`
- Class HashTable Vs Class HashMap

  `http://javahungry.blogspot.com/2014/03/hashmap-vs-hashtable-difference-with-example-java-interview.html`
- `https://www.youtube.com/watch?v=TQ1s-N_TqMw`
- `https://www.youtube.com/watch?v=j442WG8YzM4`



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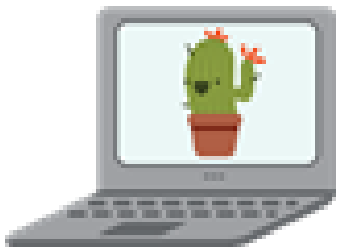
- `https://www.youtube.com/watch?v=j442WG8YzM4`



References

- Please learn how to reference images, trademarks, videos and fragments of code.
- Avoid plagiarism

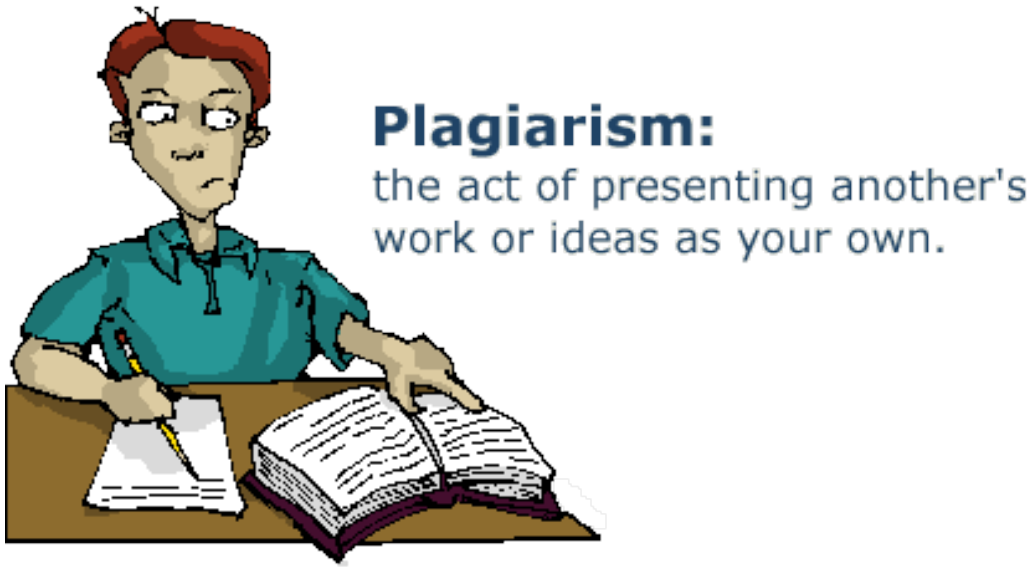


Figure: Figure about plagiarism, University of Malta [Uni09]

References

University of Malta.

Plagarism — The act of presenting another's work or ideas as your own, 2009.

[Online; accessed 29-November-2013].

Further reading

- Hash tables
  - `https://en.wikipedia.org/wiki/Hash_table`