

TSCAB	Theory 1-4	Date 1810112020
1 HashSet	and the second	Secretal Land
HashMap	and the second	
3) LinkedHashSe	x ?	O A Comment
(4) LinkedHashMa	ap Preserves Order	of insertion.
		1 /1 & (M)
Self balancing B	ST Vs. Hashing.	12 1
TreeSet	THS, HM	
TreeMap	LHS, LHM	
		- Branch College
Search	Search	
(1) insert 0(1	ogn) (Insert	
<u>delete</u>	delet	e/
1) Maintains SORT		maintain insertion
	-	an't maintain
nage history by the Third I of	Sorte	order.
	1. 6. 00	la la constant
3 Has many more full > , \leq , etc.	nctions like 3 Jump	le housing libraries
>, ≤, etc.	Will No	T have these function
	1 1 1	<u> </u>
HashSet: 1) Add	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
a) remove	and a feet	
3) Contains		1,6
á) sile	San Har with a martin	
7)		

(TSCAB)

How hashing works?



Date

If the dataset were simple - say we could so something like the	characters in alphabet
we could so something like the	following to do
Operations in o(1) time.	drapt but 1
bool set [d6];	TRAD break P. 8
Set [x-'a'] = toue or false gi	ves present or not
97 99	
abcd	1929517
Policy Bull	casMass if
Now, what if the data is BIG?	
- Let's say tracking doing the	ibove approach on
Let's say hothing doing the a	e 1010 combinations.
such a big array isn't just	economical.
So, use modular arithmatic.	god enlotelet (
cictoic w was interest	
(9492344)/. (prime_number) → F	Result is a small num
that can be stored at a parti	cular known Endex to
retrieve later -> A HASH FUNCTIO	IN DOES THIS.
rest against so not make these	30' = (d)
Handling hash collisions:-	
Handling hash collisions:- Dpen Addressing	66A (1 158 A20H)
2 Lincor chaining	95-0m37 (c
	Lindera (1)
et's say hash-func(Key) = Key%7.7	
alues: 10,11,9,13,8, 14,24,17	



Date

Linear Chaining:		view vitil	v > (0)
0	14	traine	(remains
The same of the best of	-> 8	L' HOTO	1 1 1
2	-> 9		can be a dist
3	7 10	> 24 -> 17	can be a list or BST.
4	→ TI	And sould	
5	1 90 /		100
6	→ 13	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	will at
	+	inlîn	Un KON

If the keys are non-uniformly distributed, then chain at an index grows in size and can lead to O(n) traversal.

If the chain of list is replaced by a BST, then it reduces to $D(\log n)$ from D(n).

and the same of th		
Open Ad	dressing	g: Initial length = length of i/p data
0	14	When a hash collision occurs, insert
	8	at the next onoccupied position.
2	9	· · · · · · · · · · · · · · · · · · ·
3	100	Search: 241/7 = 3. occupied by
4	11.	some other element. Start linear search
5	248	till next empty space or the whole
<u></u>	13	list is iterated.
7	17	Aha! Now if you delete 24, how'll you
		coarch for 13 81 17.

So, deleted elements are marked 'deleted'. They're not empt



Date

45. 433	1 0		
Open Addressing	Lineau	Chaini	ng
Deache friendly	(1) Not C	ache free	ndly.
(like arrays)	a Not a Cusage of	linked/to	re DS)
6 0	· · · · · · · · · · · · · · · · · · ·	ă.	
2) Sensitive to hash function.	@ Not ve	ry sensit	tive
(Many collisions lead to	4		, v
pour performance due			
to linear probing of	1 0		
next available epace).	The state of the s		To the second
→ Quadratic probing			
thinks must be a mine with a series	MAN-ALL	110 1004	11 6
3 Space wastage	3 None		the same of the sa
(Deleted elements)	144	<u> </u>	ruge
the second secon		P. Add A	12011 2 18
(1) Used when 1			
word when then wency	1 A) 1150 4.1	ushan el	La laborate de
and number of key is known.	& Useful	when it	is unknown
and number of key is known.	how mar	y and h	υω
and number of key is known.	how mar	ly and h ly keys m	nay be
and number of key is known.	how mar	y and h	nay be
and number of key is known.	how mar frequent	ly and h ly keys m	nay be
and number of key is known.	how mar	ly and h ly keys m	nay be
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and number of key is known.	how mar frequent	ly and h ly keys m	nay be
and number of key is known.	how mar frequent	ly and h ly keys m	nay be
and number of key is known.	how mar frequent	ly and h ly keys m	nay be