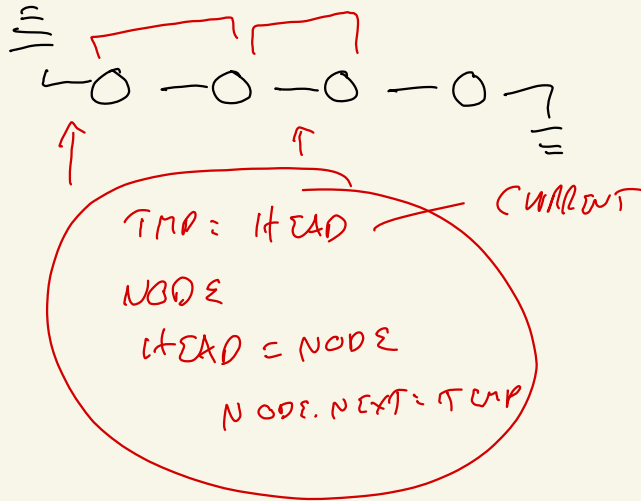
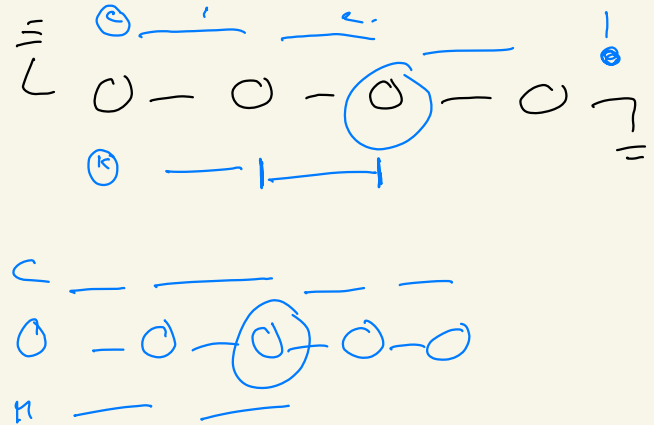


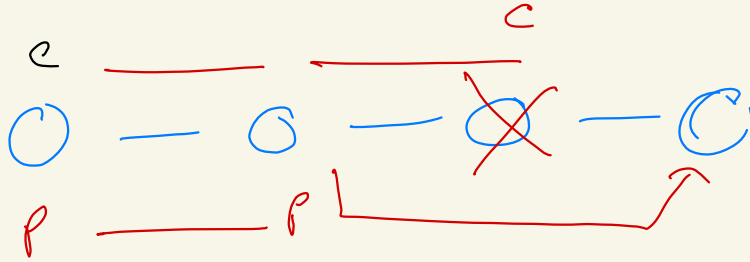
DSA

LINKED LISTS - INSERT BEFORE
PRE-PEND



Kth FROM END





$pos = 1$

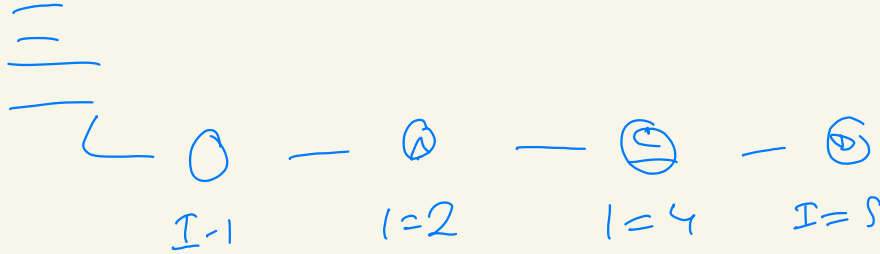
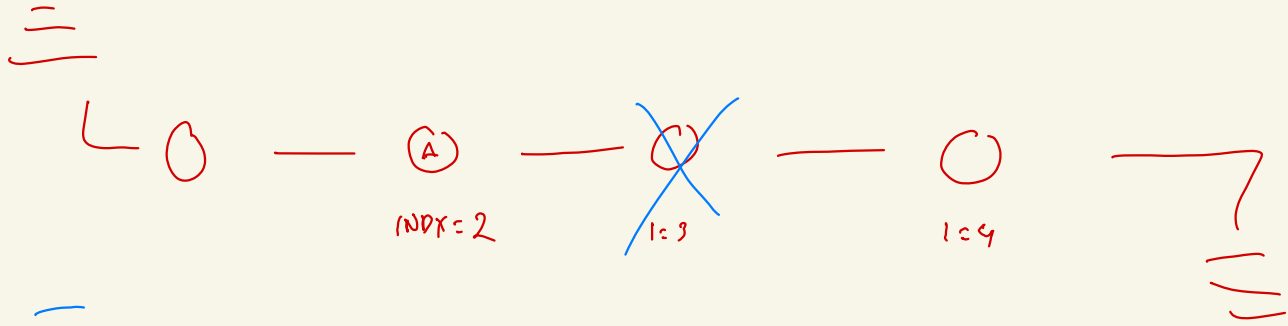
while current \neq

$curr = curr \rightarrow next$

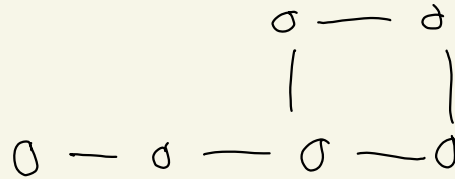
$pos++$

$if (pos > 2) \dots X = X \rightarrow next$

}



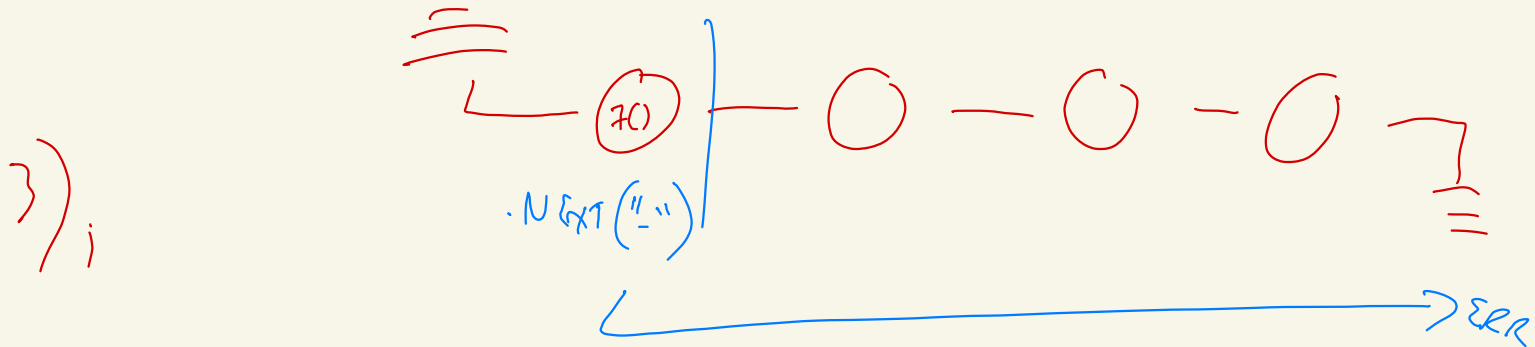
NO SORTING
SPACE

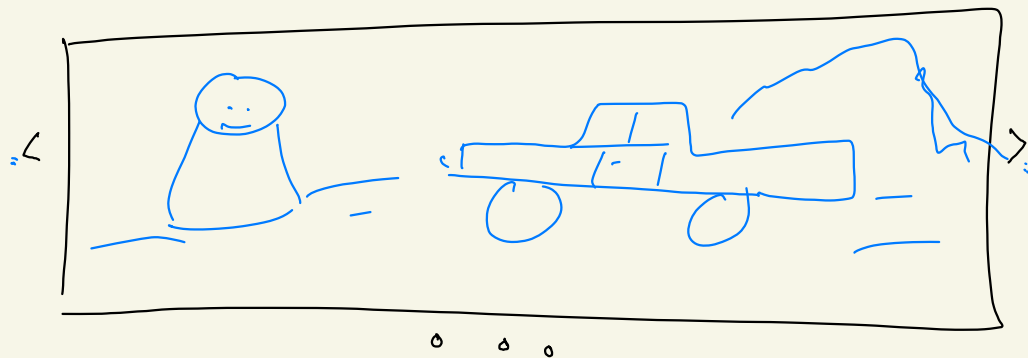


LINKED LISTS IN CODE FOR REAL2

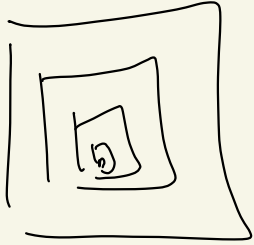
MIDDLEWARE

1 1 1 1
APP. GET('/', x, y, z, (REQ, RES)) => {



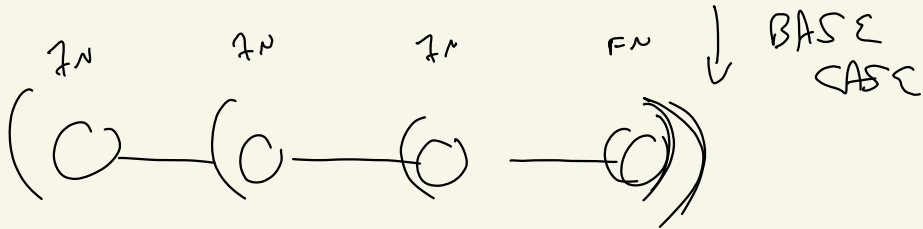


RECURSION?



CALLING A FUNCTION
FROM WITHIN SAME FUNCTION

* REDUCE THE SET OF DATA



BEARER ??
AUTH ??

IT'S A THING THAT SAYS

YOU ARE ~~AUTHENTICATED~~
WHO YOU SAID YOU WERE
&
WHO YOU MUST BE....



A TOKEN IS you!

STRAINS	10
KEY	ACCESS
CHARS	AUTHORIZATION
LOGIN	TWT
ENCIPHER	

MECHANISMS

BAR

- ① SHOW ID
- ② HAND STAMP = TOKEN
- ③ DRINK?

FLOW DIAGRAM

① SIGNUP

- ROUTER - POST w/ {username, password}
- user - HASH PASSWORD
- user - SAVE username + HASH TO MONGO
- user - GENERATE TOKEN
- ROUTER - RETURN HYDRATED USER OBJECT

② SIGNIN

- POST
 - u/p == HEADER
 - Body = NONE
- COMPARE u/p w/ DB
- out {
 - REGEN TOKEN
 - REDIRECT
 - MESSAGE/OBJECT

/ SIGNUP

/ SIGNIN , AUTH , (R, R)

does
work

CURRENT PROBLEM

(/ PROFILE , AUTH , CAN("update") , (REQ, RES) \Rightarrow Σ

T/F

\Downarrow ACL

T/F

3)

ACL

ACCESS
CONTROL
LIST

"YOU CAN DO

WHAT WE SAY YOU CAN"

USER TYPES

GUEST

EDITOR

CONTRIBUTOR

ADMIN

PERMISSIONS

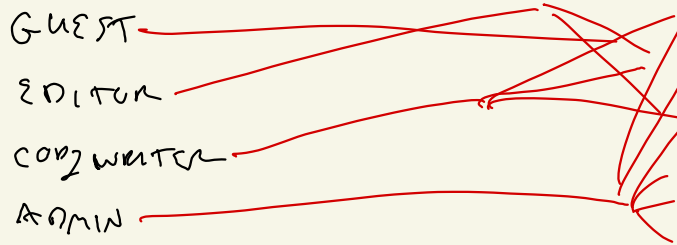
CREATE ARTICLES

READ

UPDATE

DELETE

CREATE USERS



GUEST: [READ]

EDITOR: [READ, UPDATE]

CW: [READ, CREATE-ARTICLE, UPDATE]

⋮

U/N: JOHN

P/W: ~~12345678~~

ROLE: ~~EDITOR~~ ADMIN

/DELETE, AUTH CAN('DELETE')...

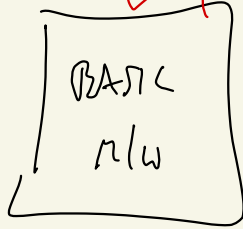
ACCESS DENIED



- POST /signup

- POST /signin

- GET /xyz
LACL :



CHECK
u/p



CHECK
TOKEN

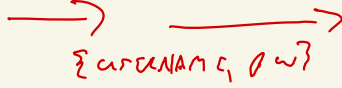


CHECK
PERMISSION

--- ROUTES
RUNS

SIGNUP

SERVER/ADMIN



POST / SIGNUP

NEW USER()
.SAVE()

USERS MODEL

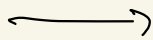
REQ. USER

- Admin View
token

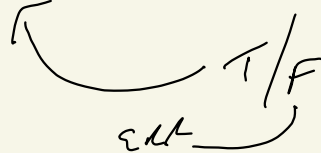
SIGNIN

POST / SIGNIN

header ~ / u:PASS



MW



USERS MODEL
AUTH BASIC