paroguem: 1 meerging AIM: melige two souted weary in a third way Algorithm - MERGING (conagy, anay, meage, m,n) Let accord 1 and accord be souted accords with m and n elements, sespectively This algorithm meage accept and accept 1 Into all accept (meage) with m+n elements 1.967 i:= 0; j:=0; h:=0, [Initialise] 2. Repeat while icm and icm; [compaces] 1 facionaly E13 Lauragy Ei) then: SET menge [14] = adday 1813 561 th = 16+1 and i= i+1 else SET meage [14] = accordy 2[j] SET KZKHI cend j=j+1 Ceny of 1f stauecture? Eand of loops 3. Repeate while i cm, then:

961 menge (163 = anagy / (1)

SET K = K+1

[End of loop]

4. Repeate while icn, then:

SET meage [K] = conery 2 [i].

SET j = j+1 and K = K+1

[Gnd of loop]

5. exit.

output antere the 5/2 e of the risest cereagy; entrettre elements of the sicest coverage a figure weld in about the suspectively this affection entiethe size of the second andy Entre the elements of the secon & according: a request while i'em and Jess: L'emper Lancachell 35 courses. the meleged cialogy 1 1 16 - 14 1 and 1 = 15 SEL MINIBERTAL ESTANDALITE 1 1200 45 11 Starte Charles / confinite applica grabes. (8) 38 KM 199

paraguam= 2 SINGLY LINGED BIAGS Alm: Singly lin Red Btack - newsh, pop, Lering season Algoer them :-1. Street 2. select push o presention, then 3. cueste a pece wode with the given data 4. If top = = NOCC then: (check coethere the Stack 15 empty) 9 SET top = now nove 561 newmode -> next = NULC 6696 5 SET MUNOde-> next = top top=new node CENGOS IF Stewetweez 6. If useg select pop onewation then 7 If top = = NOCL then: ckheck whethere stack is empty) disnly "stercifis empty" Elge: SET temp = top (a week at emporary node & set to to pop)

display tem - water 8.561 top = temp->next Charke top reing to the next mode q. felle (temp) c nelese the temposeary node) 10. If used select search onewatton then 11. Declare a pointre vacuable temp and the vaerable key that holds the value to be seauched 12.561 temp = sop 561 flag=0 13 - repeate while tempt=nuce If temp-date = = they then: display " element found that location? SET Elag=1 [end of 16 Auchitecture] 940 go to step 14 Else: 561 temp = temp -> neich LEng of while 3 14. If flag = =0 tteen:

Eand of 15 Stouctage

15:15 asea select dignlery onewation then

16 3 declare a pointere node pty
567 node pty = top

17: IF node ptr = = NULL than:
dignay usfacily is empty9
Cond of is stouchase?

18: while node pto = NOLL tren:

pourle node pto -> date

SET node pto = node pto -> next

1 of node pty 1 = NULL then:

point u -> "

Lend of 15 stemetures
Lend of while]

19: Exit.

output whether willis it end there 1. push 2 - pop 3. dignlay J = J & C = 100 10 = 3 4. Search 5. exit Enterthe choice:1 6 ntere the element to be inscreted: 2 insection is successfull 1. push

2. pop
3. display
4. Search
5. Exit
Enteretie choice: 1
Enteretie element to be inserted: 4.
11. Seart on 15 successful

1. push 2. nop 3 & display विद्वाराम के महाराज है 4- Search 5.67alt Enterette choice:1 E wheelte element to be insected: 10 insection is success feel 1 - pash 2 - pop 3 · display 4. Seacech 9 . Gocia 6 Mere the choice:2 element peleted:10 10 push 2 · pop 3. Dignery 4.5000066 5.676d

entree the choice: 3 4->2->null 10 push a sound of a grant you all ours 2= 000 3 odés May confide the temperatured many 4. Seewich 5 - 67 Cit of management to be a to also 1000 21 1001 entuette choice of Enterette Item which is to be secretal: 2 Item found allocation 12. mence 1. negh 2 - pop. 3. Dig May display charant 4° Seauch 5.67cid Enderette choice: 5

Ciel culace queue AIM: cierculary queue operations Algorithm: 10 Stack 2-18 asea select the suspection oneerobjoy 3. declare a vaouable Item with given value 4. If front == 0 88-8 eag == 3/3e-1 H front = = eleag + 1 then Display 4 cause or enflows Candof 18 staulctures 5. If front == 1 then 361 Front=0 SET YEAR ZO Esny of 15 stelletales b. (freeler = = 913.e-1 SET Yeare =0 Elge:

SGT dead = ouger +1

Congof If stell chaces

7.9 [SET (9[8 caa] = tem 8. If used solver deletion execution then 9. 1 front = = -1 then disnly a quelle underflow. [End of 1 f stauture] 10- If Front = = & ever ton 507 Front =-1 SET Year =-1 CENS OF 15 Steres (toeser) 11. 1 f front == 5/3.e-/ then: SGI Front=0 SEI Front= front +1 Condof If Stell (tale) 12. If useuselect the signly operation then 13. SET Front-pos= front SET yeall _ pos = read 14. 16 Front = =-1 then: Disnlay " Queue is employ" Eany of 1f Steel (fall)

15:15 Front-pos L= reach-pos theo: Repeat while front-post read-pos thes: neight (9 [front-pos] 36 + Front - POS = Front - POS+1 E and of while else: repeate while front-post= 513e-1 nevent cg[front_pos] SET Front-pos= Front-post 1 [End of while } 16: SET Front_POS = 0 17. Repeate while front_pos (= greace - pos theo: Disnley cq [front_ pos} set front-pos=front-pos+1 Cany of while? (End of IF) 18: If used select search onewatton then 19: Declarer a variable set with value se Seeched 20: declare a temporary vacacable temp then

SGT temp = sea 21:56+ 1 = foront 22: repeate for i L= acoust thems If te = = cq [i3 then: neerif - j+1 9011-111 Ceny OFIF3 15 j==0 1000 pignlay y Item_not founds CENHOF 15 Stelle (tapeo } SES 1-1+1 [Eny of for loop] 23: E)Cit

output menu 1 - Inspect West Felice of the form on in 2. pelle 3-00shlay 4- Search 50 except entre the choicest Entree the number to insert of mener 1-insect 2- pelete when mole were - the come limes 3- hisplay whole so can place of shall 4 · Seauch 50 cxid Enterettre choires! Enterette number to insectizo 1. 14gent 2. Delete 3- Display 4-3 Ellech 3. 004

Entere the choice; 1 Enter the number to 1118 eref : 30 meny 1- insect 2 Delete Lunder of Carrier 3- Display 4- Secreth S- Excit enterte choice: 3 10,20,30 menu 1- Inscert DISPLANT " CHEMO ON CARPLETO 2- Delete. COUNTY OF 16 STANGE CHENTE 3. Display 4- Search Definoral 198 9- excit Entre the choice :4 Enterthe element which who be seached: 30 I tem found at location ?

mence 1. Insect 2- Delete 30 pishley 4° Seprech 90 exit 6 ntestre choice : 2 lowes delead , mence (8884) 127375 51 4 9 70 14 1 1. (useuf 2- nelete 1000 1 - 177 - 3 40 13 3- 049 May 4-9 each ch 5. exy select the choicess

EENd of For 100p3 CENd of 1F3 ELSE ? peut 9 size alle not equaly Greit 12:16 aseer select insecution onerection then 13 & declare two accord set (i) and set 2 (i) with size ni) nz nespectively and need elements + othe wedays 14-18 n/= = n2 then 15. 56T 1=0 16: repeate for i Ln2 then 17.561 set3 [1] = set/[i] & setz[i] 18: SEF (ZiH CENHOF FOR loop } 19:567120 20: nepreste fils é LNZ tues: peut sets [i] 21: set i=i+1 (ENN of for loop) CENdof1F3 GLSE

prent 4 5/3 e and not equal " Great 22 - If used select the substanction then 23: declara two amay setilis and setzlis with ninz size we pectively and input the elements to the ceaucity 24:15 n1 = = n2 then 25 = 5et 1 = 0 26 : repeat for & Zn2 then: SGT Set 3 [i] = Set 1[i] 281. Set 2[i] 27: i = i+/ Cand of foll loops 29: 567 i=0 iznz then neurit sets(i) 24 : repeat for icn21 3005 et 1=1+1 (GNY of Folloop) [endof16] Else a perint size aux not equal? 31: Excit

output nouss I for union puess 2 for interesection pouss 3 for subtonaction puess 4 for exet entere choice a wear the size of set 1 Enterette elements of set 1 Enterette 513 ecf Set 2 = retree the elements of set 2 union: 123 puess 1 for anion news 2 for intreusection press 3 for subterection needs 4 for Excep Enterette choice: 2

AI.

Alg

3

14

Entrethe size of set1 antesthe elements of set/ entre size of set z Enter the elements of sets Adeusection:3 noess I for centon news 2 for intersection MUSSS3 For subjustion pauss4for exit Entre your choice 33 6 naethe size of sets Enlea lee elements of sef. 1 Entrettees/secf setz Entrette chrents of sef 2 di Efence: 1

news I for undon nass 2 for interesection news33 for subtenection noses & 4 for excit enter the choice:4 PART TO PARTY PROPERTY OF THE PARTY OF THE P 2 ्याकाता हो है। END RAPE EN ESTATE DES LA CONTRACTOR DE 20 30

parageroum: 5 Benevery severch Taxe AIM: Bineary Search true onecestions Algolithm: - 1.9 tallt 2. If uself select the inscention opened from the 3. coexate a new 1351 node and assign value fort 4. cueste tues (node date 11 all the counte four function with the work value and the data entered by aseq 5. If woot= = nock then; 6: Declare a temposiciary vacanable is temp 56 + femp -> data = data SET femp -> Left -> oright = NULL; sectures the new notice temp to the calling function (and of 15) 7. 15 data c (node, ->dala) 4. call the could note function with node - left and assign l'a sufair value in - node -> left 9-nique -> lef = coverte peue (novie -> lef, data) EENGOF IF Spenictures

- a. IF data > node -> data
- right and assign the netwon value in noche -> ugut

nocie -> signif = couate peul (noche-) signif Controf 16 sterreture ? Mada

- 11- actuern the original goot pointers node to the
- 12. 15 the useer select the search element operation than.
- 13. search (node data) Il (all the search function with root valle and the element the to be searched,
- 14. If node == NOCC

 nearly relement not focus,"

 Congos IF)
- 15. If data Lnowe data then: call the search function with node -> left and assign the retuen value in node -> left and assign the node -> left shata

 Land of 15. Stanctured)

16: 15 data > node -> data then call seement function with node -> 8 igut and assign the return value in node -> right notie-> sight = seerech (Gode -> sight, rata Cany of 15 Stellecture) news " Element focused & 5" nocke -> data 17 · outeren the original root pointere noche to the calling function. 18. 19 the asea select the deletion openation theo 19: del Cnode, dada // call the del frenction with noot value ceny the element to be detected is declare a temporary variable temp Is node = = noll then: print 46 lement not found" (6nd of 15)

20: 15 delta < noche -> date then

call the del function with horse-> left and
assign the repulser value to noche-sleft
noche-> left=del (noche > left o data)

(and of 18)

21 = 1 f datas no de -> data then call the del trunction with node - suight and assign the aretary value n node -> ought Candof 157 22 · ELSG

Il delete this node and replace with others minimum element in the right subface of marcin an element in the left subtace.

23: If made -> engut so noche -> Left // suplene with men in um element in the ought sub truce.

24. 364 call find men function with node > right then retain value assign in temp

361 temp = function (node -> Light)

SET temp findmin

56 1 node -> data = temp > ciata 11 cuplested 14 with some other nouse

25- call function del with value node - sight temp -> Late and refuen value assign in node - eight ELSE:

126: 561 temp= nodo

Il is theree is only one of zero children they we can dienctly enemove it from the fence any connet it showent its child.

27 18 node-) Lest== NULL then: SET node = node > sugut 6186

28: If node-sublike = = NUCL then;

29: Feel (temp)

CGNG OF 1F]

LGNG OF 1F)

LGNG OF 1F)

30: Find min (node)
31: If node == NULL then
retern NULL
90f = Step 24

22: 15 nove -> left then call the function find min with value (nove -> left) then retern the value to calling function. (nove -> left)

refuen node goto step 24 CENYOFIF 33 15 the usea select the Risnley ontron then call the mousing function with soot velles 393 nod 5 = NUCL Itien model (node -> Left) call the function moudere with valunate sleft 36 peems node - date mouder (nade -> suigne call the frenction inoudely with value node- sight Cand of 153 37. Exet

out rut 10 Inself in nineway true 2. Deleterrom Benevey force 3. In ander tern versal of Brussey teres 4. Seewich 50 672H entre the choice; entre new element: 20 700+15 20 I noude + sur eagel of beneary buce; 20 1- inseast in isonaly tous 2. velete from Benowy + use 3 - 1 novideel full veels alof Benavey beree 4. Seech Secret 6 Ntee the Choice; 1 sulconow elevelt: 25 mondere felaversalof Benacy fuces 2025

5

1 . Insect 14 Binowy face 2. Delete from Bineray felle 30 I noticed terevousal of Binary Flue. 4-9 seech S. exil ante pholie:4 Entre the element 1060 secretarists 17 6 lement is which was somethed is found 1. Meet in Benevery four 2. Delete from Binacy feel 3. inorder becomes alog Benacy bace 4. Seasich s. exig enter the choice; 5

```
paragreems pouble Lipskod Cist
 AIM : bouchly listled list onecution.
Algorillam: 1. Steet
2. 18 agent select the insent an enertion of beginning
3. If heard = = NUCL then:
4. neelfrorm. Step 36 to 59 C call the frenchion coulded
9.56 1 Hand = temp
 remp 1 = heard
6-6156
7. neerfrom step 96 to 59 (all the function called)
9.965 temp-> next = word
  96 T heard -> new= + emp
  SGT head = bemp
   [End of 1 & sheweture]
9. If used aboose the operation ruseus nocho at end
10 else 15 heard = = NUCC then;
M. pelform 36 + 059
12 SE 9 heard = temp | 5 G7 temp 1 = heard
```

13 . 6lse 14. newform step 56 to 59 15. 96 + semp1-> next = temp SET temp -> necev=temps SGT temp1 = temp Lend of 14 statestates 16.18 ugeen choose insect at any position then 17. Read the position and stone It is to the vanishe 18 · SET temp2= heard 19-15 pos LI 11 pos) = (ount + 1 then Dignlay & position out of gange to insent 67e18 Ceny of 15 Stellecture 3 20. 15- heard = = NULLEB nos1 = 1 then Display 4 smpty list coexor ruseut other than 1st position" Excit CENG of if streetane 21: If heard = = Null pe pos = = 1 then 22: peerform step 56 to 59 (call function weater)

23: SET heard = temp SGT temp1 = heard CENY OF 17] Exit 24 - 618e Repeate 25. while it pos then: 26 SGT temp2 = temp2 -> Next SGT i=i+1 (End of while) 2): neer from step 96 to 59 28: SET temp > new = temp 2 2 SGT temp> next = temps => next 1 get temps -> next = temp 29:15 usen choose the openation detection then: 30: Reacy the position the 11 stone into the vacable pos 31: SET Temp2 = heary 32 : If nos (Ill nos) = count+1 then Desilay 4 nosition out of large to detect Candofif stelle chaces 3 evert-

33-15 head == NOLL then Menley 46 mpty list no elements to deleter [End of 15 share charge) 6 rit 34. GBE 35. Repeale while i Cpos SET temp2 = temp2 -> next SGT 1=1+1 [and of while] 36 · 18 i==1 then 15 temps -> next == NOLL Hop nes nery y noise deleted from list" 37. Flee temps SG F fempz = hered = null CENGOFIE specietare 3 Gock 36. Is temp 2 -> reset = NOU lton: SET temp2-> never-> never-> never-> nouc. force femps ng May mode deteted from light [Gnch of 18 Stereschuses] 6 ruit.

Force temps 37. 567 temp2 = weard = NUCL End of the skueectage) Exil 38 15 temps -> next = NULL then. 56+ temps -> next = NOLL suce temp 2 pis play u nodo deleted from lig 1" CGNN of IF Stoueture] Exch 39: SGT, fempr -> next-> relov=forpz=> new 38 :15 i= 1 thep tempz > new-> noct=tempz ->nort CENGOF 18 Shuelcheue? 39. (fi==1/hen set hears - temp -> next nestery a none deleted 40; Ruee Fenpz Cenyof of Skewchale) 41: 56 Trough = count -1 42:16 used select digular sembertion

then 43: 56+ temps = heard 43: SGT FEUP 2= = NUCC no may 4 cot coupty todishley CE no of 15 stuestere? Great 45: while temps next! = well then neunt pemps >n SGI tempz = tempz > neigh EEnd of while } 46: point temps ->0 47:15 usea selects eageth proce for an tron. 48: 56+ temps = heard 49: 15 teap2 == NULL Hep nis play heigh Empty to seasoch for dated Cendor-15 Stelle (feles) GXI 30. Read the valle to be severch and store 1/1/1 to the vacuable atota 97 while temp 21 - noce they 52 15 temp2 -> n = = datatup

53.6 LGG SGT tempz = tempz >> next SET count = coult +1 Candof 153 [Gny of while] 54 : Donlay 4 not focunds 55: 6xif 56: 11 when call cheeste feinction · SET FEMIP-> rever = NOCC// careto O 57° 56 + Femp -> ne 1ct = NOCC Bis play 4 Entere value to node 94: nead data and assign It Into temp->n temp-)n=dala 59: coopt = count +1 60:67616

```
out next
   10 insent at begining
  2, insent at end
  3. Insent at nosation
 4- netete.
 5 - nig may
 6- secretch
 7 - Exit
 entre choice:1
 - 6 utestles valles of node 5
  1. 149 end at beginning
 2. Meet at eny
 3 - ruscellat position
4 · Delete
5 - pig May
6 - 9 exectly
7. exis
entere choice: 1
6 ntere the valle of node : 10
```

1. Insect at beginning 2- ingent at end 3- Insect at possition 4. nelete S- Disklay 6. seeech 7- oxif 6 where choice: 2 Entre le value to nocé à 2 1-14 evel at beginning 2-11/8enfect and 3. Insent at position 4- delete 5 - his way dues - continue - popular is the 6-5 exect 7. E) Cit sideethe choice:3 Enter the poset for to be inserted 52 Eller Her Valle to nede 313

1- Inseed at beginning 2-14sext cet end 3 - sugest at position 4. Delete 9 - Dis Mary 24 6-5 each 7= exit 25 andrestre choice:4 26 entre the position to be deleted: 2 no de dited 28: 280 1. 148 cut at beginning 20 suseuf af eng 3- insect at position 29: 4 - Delect 5. Dis nley 3000 b- seeech 3135 7. excit 32 : Enterchoicei6 entertee value to seach is lo 6 Noment focus of 19 1 405 of 100

1. insect at beganning 2. insect at end 3. Inscent at position 4 - n elete 5 - Dis May 6. Sealech 7- excel anter the cholie; 7 the property of the property of the the set of the supple of the first water out to proper

Disjocial AIM " Disjoent Set onewations neoquem: 1. Start 2. Read Runambey of cloud from usey and store 1 + In to 160 dign 3. call function mellheset () then 4.5651=0 5. Repeate pay i Ldig in then SET dis nament ci)=i SET sig yank [1)=0 561 izit1 CEndof For3 60 asey select the anton once thouten 1. Nearly the element to peelform and stone
9. In toxe & greatively
11 nee form and operetion with & House result

in texset naction is step 9- 15x set == Y set then Ecndof 15) 10.15 15 Nandy Exset Kdig-Yanks Eyset 3 Hops SET dispoint Exsell=45et SE F dely yang Exset) = -1 EGNG OFIF3 11. else 1 fd13. Jan/h [xset]) dis. yan/4 [yset] then SG T dig. parent [45 et] = x Set; SET dis runih Eyset] = -1 [GNG OF 15] 12:615e 13: SET dis-passent (yset) = xset SET dis-ransh [xset] = dis-ransh [xset]+1 SE (dis, 8 cen/4 [4 set] = -1 14. If agel choose find onourton then 15: nead the element to Check If and stoke the Value in to the vacuables x and y oug rectively

16. If sein 4+== sind y then nightery 4 connect ed components 17:else residery 4 not connected components 18. If used select the city day o newation then 19:561120 20: repeate for 1 Cdis on then nevent dis. noverent [i] Set j=j+1 Ceny of for loop) 21: 3E71=0 22: Repeat for i Lolis. n then: neent dis yanih[i] set i=i+1 [end of ford loop) 23: If dies. parcent [x3]=x Itan SET des pacient (x) = sing (dis pacients) Detuen dis-navent (x) 24: EX14

output How moing elements 24 mena 1- circon 2 - Sund 3 - nig play anter the choice Entre bloment to nator certon poyou whish to continue (1/0) mence 1-uneas 2. being 3 - Reg May entre choice Entiethe element to nortyn centon. 7. ne

need

105

200

30

no you want to continue (4/0) meny 10 cincon 2- Fund 3 - nightary 6 return choice: recent accord 3123 Call Plan Heartman The Man Ran 16 werely -1001 poyou want to continue Cilo)