## PROGRAM-6: WAP to Implement Singly Linked List with following operations a). Create a linked list b). Deletion of first element, specified element and

linked list.

last element in the list c). Display the contents of the

LAB PROGRETI-6 mindude (State. h) # include (malloc b) Struct no de int jouts; Struct ade "lime; topedel Struct node \* Nopr; Nope getnodec) NORE X; X = (NOD E) malloc (Six of Struct node); (X== NOLL) direct of ("man full \n"); (oxit Co); oceleun x; int from a Chape a yall (x). Gution o; Not = inset front Corope jours, int itom) NODE LOWY. tomp = getrode(); tong stomb = NOW. of Court = = NOW)

oration tomp; tony ? link = fost; fort = tomp: ordina forst; NODE deldo - grow CAO(Eforsa) NODE tomps ly Cyprot = = NOCC) drawe of (" lot 15 compty anno of delot 1 m"). day - josoz ; tony - tomp > link; grant of C" it on deletel at grown and is = /d/m yirst zima); of ree (direct); oretion tomp; NO DE in sent a voce (DORE forst, in its) NODE tomp, as tony getnodeci; tonh > into = iton; temp > 11mb = NULL; if colot = = NUCO ocation some; (we - yout;

office Cour = line = NULL) Cur = cur > link; Go > (ind = dony; ration food; NODE delet - leas Consegoras NODE CUS, from; if Copost = = NOW print of C" list is compay award delet \n"1; ifferent > link = = Nucc) proper (" Hom delater is 1/a) n" finate info; per Cojusti oration NOC; pw=NULL: our = dost; while Can & link != NOW! often - Curzi as = avz fix; fourt & (" the delete at moz-ondis /d', cur-infa), fre (cur); (word > love = NCKL) ordin forst void display (NODE JOBE)

NODE 4004; if Copost = - avek L) drum & culistampy councit difflow Home 10"? for Gomp = glost; tony != NUCC; tony = top > line frank of C" 1d /m", tomp infol; NODE Cor; ione Coura; E ( COOK = = NOCE (1 pos <=0) printer ("invaled position \n"); Cleton NOLL if Cpos = = 0 ar = giros; first = giorst + limb; francis Court you = WULL. Count = 1; while Care! = NUCI if (Good = = pos) brook; your Cur ; Cuz = Cuz > limb

Coumb + 7; your > lim h = Cours limb; chroseno de (cur); oration forms; int main () interior, choice, pos; NODE you - NOW, Sophon C'CLS'V; chan Com 2 Sty Com yring C" (n 1: Insent food (n): Blets proof In 3. Triport year) of blute orange 5 Palls as Jacqued position In 6: Pisplay list in 7. Exit In"; france of ("contos. The chare In"); Scory C" 1 d", A choroba"1; Swoten (charce) (axe): Printy C"anto the 1 for at front-and\n"/ Scony (" Id", & itom); afiret = insert front (firet, item) Case 2: Jirose = delete front Copission; Coss 3. printy ("outer theiron atorons-endla"); 3 conf C" /d" ; & item! foot - insare rear (giret, item). COLOS: printy ("unte the postion of the itematiche deleted bil);

Scory C''/d", & pos);

generat = delete - pos (pos, glost)

broat; care 6: diplay (form); broak; default: out (0). bozeal: getche

with following operations a). Sort the linked list

b). Reverse the linked list c). Concatenation of two

PROGRAM-7: WAP to Implement Single Link List

linked list.

#### LAB PROGRATI - 7

# imdude < 8tdio. h> # imclude ( Stalib. h) Struct nock E into into; Struct node + limb; 3; dyfreder struct node \* NODE; · NODE getrode () E NODE X; X= . CNODE) mallac (Size of Ostruct node)), if CX== NULL) & print of (" mun full \n"); Unit (0); 3 outwoon x; 3 Void fre node (NOVE X) E free (x); 3 NODE: mant - front (NODE forse, intiton) ENODE tempu; tomp = get nocle (); temp - into = item; tomp -> limb = NULL; if cyrot = NULL; ocation temp; tomp > limb = girst, direct = 40mm; cretion first; }

NODE TE (NODE Second, int Hem)

temp = get node (); temp = impo = item; temp = fime = NULL; if Csecond = = NULL; coolumn temp;



```
CUT = COZ > LOOK;
 Cuz = light = tony;
  outern Second; 3
 NOVE debto run Ovor direct?
¿ NOPE aux, frear;
  if (frot == NULL)
& projecty ("list is amply connotdelete to"); 3
 if (good = winh = = NOCL)
 E printy (" itom deleted in: /d ln", yout single!
   you (doest); }
   CHEON = NULL
     Our - first;
      white C Cuz > lime ! = NUCL)
      E from = our;
          cus = aus = line; &.
   printy (" itom deleticiat saar-anchit "d", anvingo);
    chose (curs);
       Cher > limb= NUCL;
       oretwoon foot?
 NODE IMPORE pos Cinda i bou, ind pos, NODE Just)
& NODE tonh;
  NODE previous;
   int Count;
   temp = getmode is;
   temps into = NUCL;
   if Chart== NULL AR POS==1)
     vaturon temp;
     2 traint of (" ion value posla");
      oation direct; 3
       ig (pos == 1)
        Extends > link = glirat;
          return tomp; 3
        Count = 1;
          Mor - NULL;
```

Classmate Dote. Pope

```
while ( we != NOLL IL Court != pos)
· E prev = (uz )
    our : Cur -> link;
      coard ++ , 3
    if (Count = = pos)
  2 from -> limb = downfy;
     tomp > wink = cur;
   valuon first; 3
    printip (" Invalid Position In "); 3.
  NODE dolos- pos Cint pos, NOPE firsti)
  & NODE GUZ;
     NODE WOOL;
      int Court;
       if (dorst = = NULC 11 pos <=0)
  E front of C" imulal position In";
    Oralasm Nou: 3
     2 aux=yirst;
        first = direct > link;
          Grenode Carl;
         ocation forts ; 3
       grow - QULL;
        Count = 1; writime girss;
     [ if (count = pas)
        chian = cus;
         Guz = Guz +> lieve;
         (0 word ++ ) ....
         ist (count != pos) .
         ? openet of ("innualish position la");
          vatom direct; 3
          it (count != pos)
         E frunty C'invoid position specified in");
             ordism just; 3.
```

chrow a limb = our a limb; chaemode Cauzi; oution chirat; 3 NODE JOHOUX CHOOLE JUSTED) & NODE cur, tampi wr = NOLL; 2 otemp : first; forst = girst > limb; tomp > lime = cuz; OUZ = 40mph; ] ordina Cue; 3 NODE OSC CNODE YMON? & NOPE from = girst; NODE QUE = NULL; int temps if (dorst == NOLL) & otation 0, Bi. . w calso & where (green = NOCL) S Cuz = chaw > link; whole Cue! = N.ULL 7& if ( from > incho ano impo) ? tony - your > info; chow simpo = we simpo ; cuz > 1m/o = don/; & Cus = cuz > line; } dran = dran = line; 33 vition first: 3 NODE des CNOPE HUND) NOOE for gist; · NODE COR = NOLLY imit tony; is let = = NUL ) ? action 0; 3 ulse ? where ( grow 1 = NOZL) & cours = cyran > limb;

white (aux 1=NULL) 5. if Cyrus > info < we > info > E tomp = pran > impo; from > into = cue > into; ar > info: temp; 3 Cur = cur - lind; 3 Prour = pro v -> hood 33 occurren jurest; ) NODE concate CANDE first, NODE Scond) S NODE CUZ; if (dost == NULL) JOHN SOCOMO!; if (SOCOMO == NULC) cotton just; while Cour > limb! = NULL) ¿ Cuz = cuz >link; J 2 r limb = So comd; votion foot; } Void display (NODE JOINT) : NORE tony 3 if (girst = = NUCG) .. Print of C" (ist comply comot display itoms In"); for (tempo = chot; tomp!=NUEC, temp=tomp=limb) Expressed y ("/cl la", 40mp = single), 33 wid main() 2 Front item; doice, posaboned, option, doice 2, item!, name; NODE JUNE = NOLL; NODE Second = NULL; (tos C;;) Exprint of (" 1: Troot grown 2: Pelote prontin 3: In book rear la 4: Albe - rearly 5: random position la 6: oanocheln 7: So rein 8: con catela 9: display lis An 9: EXH 10"1;

```
Printy C'conte the choic In";
  Sant ( 1d; & chorce);
  Switch(choice)
 ¿ Case 1: friest of ("conte the Hom at grown - und lo");
      Scory ("1 d, gitam);
         yout = imsore front (first, itom?)
        Care 2: (Dest - delta proport (Coloris);
        book;
     core 3: print of C "ares the constructor conclo"/;
        Scort (" , d, d item);
        first = insect_voor (food gitom);
    (cook; doest = delete rous (goise);
    Cases: printy C'frees 100 invado 0,200 delas at any
     distribute position (n");
      Scooped C" vd v; & alumanes.
        if Calonet == 128
    from I (" onto the position in to insome In");
       good C., a., o boo.
       Print & C'andote itemto conduct la");
        foot = import -pas (Herr, pos, flors) }
    ist (almost == 2) &
 printy (" and the position to dulle In ")?;
    8con y C"/d ? 2 pas 1;
          first=delet . pos (pos, jost);
    3 Droub;
   Case 6: glorst = source (gloss);
    cours: print of ("grows 1 year assorbling sort and) for
       desinding Sory In");
             Scary (" 1.d', 2 optom);
           if (option ==1)
               (track) see = stook);
               if Coption == 2)
```

yest = de (giret); Case 8: printy (" Gente a Second 18+14"); printy (" and the number of alexants in Second (1st In") Samy (1.1d", 2 Dum); for Cint i= 1; i <= no on; itt 2's fruit of ("In your to issued from and 2 to insect south?; Scorn of C' rd , & choraz); if (choice 2=125 print (" onte the iter at good and (n"); Scanf (" red", diton 1); Second = IF (Second, items); 3 if (choice 2== 27.8 · precint of Character the item at some and In"); Scar of Cond of Henry Drond = TR Occomo, nome); 33 forst = concat (good scherond); Dreak; Case 9: display: (yout). default ( a xit (a); gotch ();

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### PROGRAM-8: WAP to implement Stack and Queues using Linked Representation.

CODE:

|    |  | Page   |
|----|--|--------|
|    | LAB PROGRATION - 8                         | SPLASH |
| 1  | # include (Stdio.h)                        | 974    |
| /  | # indude < compo.b>                        |        |
| /  | # include < malloc. 6>                     |        |
| /  | # indua cprocess no                        |        |
| Ι, | Struct nodo                                |        |
| /  | Sintingo;                                  |        |
|    | Struce node "linh; 3;                      |        |
| /  | typedy Struct node Nope;                   |        |
| _  | Noor getnode ()                            |        |
| /  | S Granter                                  |        |
|    | NODE X:                                    |        |
|    | X = CNORE) malloc (Size of (Struct Trade); |        |
|    | Ly Cx = = NULL)                            |        |
| _  | E pozincy Comen full \n" /:                |        |
| _  | cexitor; 3                                 |        |
| _  | valur x; 3                                 |        |
| _  | Void free node Chope 1)                    |        |
| _  | 2 yrue (x); 3                              |        |
| -  | NODE invert soon CNOOF forst, int item     |        |
| -  | & NODE tomp, Cur;                          |        |
| -  | tomp = gct nodoc;                          | · ·    |
| +  | tony + ion/co = item;                      |        |
| +  | tout + liene = NOSC:                       |        |
| 1  | if Coforot = = NUCO                        |        |
| 1  | ozetun teny;                               |        |
| 1  | Cur = dorox;                               |        |
| 1  | while Car > limb 1= NULL)                  |        |
|    | Cus = cus > limb;                          |        |
|    | aux = (ind = tomp;                         |        |
|    | cature first; }                            | A.     |
|    | NODE delate _ grant CNODE first?           |        |
|    | y y  |        |

printy ("Hom dilated at front and is=1d/2 gloss info); due (giose); solun tom; 3 Void display & CNOW JUDE ¿ NODE tomp; want of C" Start amply comport diplay itomso".

that Ctomp = gosst; tomp! - Nuccitony = tomp > look) front of C" 1. d (0", doory > 200) -, 33 Lat marine 2 cont item, choice, pos; NODE first = NCKL. Sybu C'ds'). dozCi; Experied of C" In Queue Operation: In 1 Toward ocean in 2: lebel from 10 3. Display list Caver 110 to stack growth and a 4. Toward format in 5: Polete front in 6: Display list Cotoh) in chains of C " words the do ice (n"); Stong C" I'd", & choras; Substan Chaire) [ Case 1: chrant of C"antrotto iton at order\_ and lo"). Scoref ("",d", & itom; first = import sour Chirat, i tom?; bozoak; Case 2 direct = delete front (girst!; broak; (ase 3. display (glisox); boreab ; Case I' prior & L'only the itemat four - end o'); Scout C .. y of if of iften): Good = imbod front (good , item);

Page \_\_\_\_\_\_SPLASH

ares: first = doloto. frant & Coperation auso, duply school, bosed default cexit Co2;

# with primitive operations a). Create a doubly linked list b). Insert a new node to the left of the node c). Delete the node based on a specific value d). Display the contents of the list.

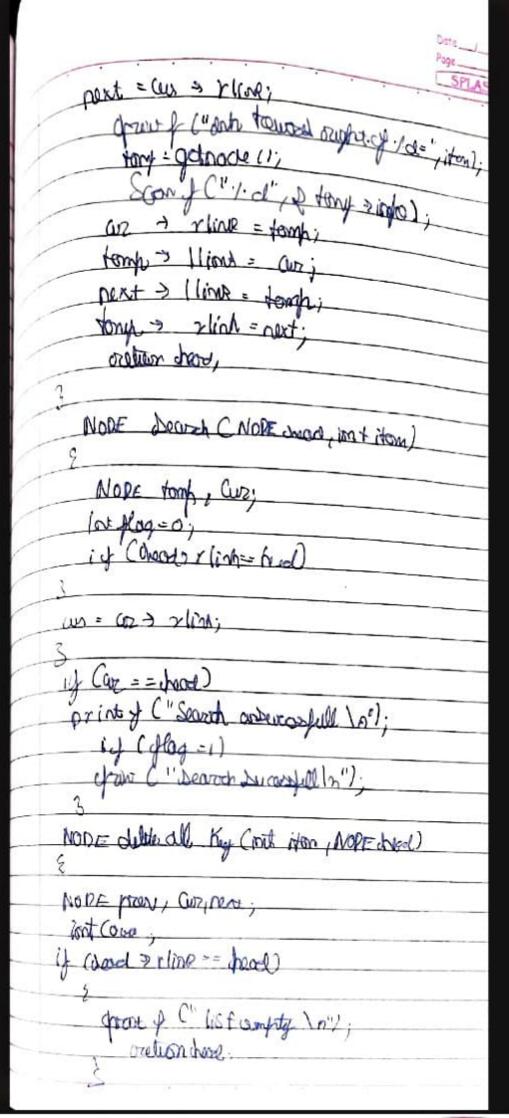
PROGRAM-9: WAP to implement doubly link list

LAB PRODRATT-9 # indu de (Staio.h) Himduda Comio. 0.3 Hiordude S Stblib h) Struct node iont impo; Struct node "Ilink; Struct nodo " xlimh; tyfedy Struck node \* NOPE; NODE getnodell x = (NODE) malloc (Size of Cstruct node)); iy CX = = NUCL frame of C" men full ) a"); volum x) Void freohode Coupe x1 free CX1; NODE dionson brown (int itom, NODE head) NODE temp, Cos; domp = getwood (); touch impo = itom;

aux=heard > x (in) doors + list = form; tong > I din = dood: toup or link = Cur; as + 1 lin = tomp; scotion head; NONE dinset roor (intitor, NODE froad) E NODE down as; tomy = got pode 62, tony & info = iton; Cwz - heard - I lione; chood > Ilind = tany tomp > rlinh - head; tomp > 1 lins = areis cus 3 rlink - temp; sation hour; NOPE ddolds from C NOPE hard) WODE OUT, next; if Chool or dine = = wood) chaut of C "day compty la"? volum had; an impall & rlink; NAt = Cur -> r lini; bace + nlimb - pexx; next - (lina + heard; ofring of C" tho now deleter is Id", are into ); gree ide (cos)

ration had; 3 NODE date seas (NODE bear) & NODE CUT CHON; if Casad + relink = = dead ¿ grant of ("dy sompty n"); poten chear; Cuz = shood & lling, your = Cur - linh; these > 11ma - draw; grew > rlink - dead; grent of C" The node deleted is . I. d', an -into). to node Cars 1; vatur head: NODE import deftpos Cient iton, NODE dead) NODE YORK, Cut, draw; if Carad > v line - drace dozen of C" (set compty) "); viction dead; an = Loads ylin; While Care! = whood) if liter = = (ex > info) broat; aus = as > rlims; if (we = sheard)

Charact (" Key not yourse"); return charce; grew = aux + llinh; friend ( "conte toward left of /d = "ital) tont = gets oclect; Econt C.1. of a fout sinto): cher = Hine = tomb; tout = Himb = chow; Cuz = llink = 40mpi tony > rlimb = Cur; - octure head; NODE improve originations Cientita, Nope decide NODE tonf, Cur, next; if Chood , rlinch - = chood) upinty (" (18t compty ) a"); valur head; Cur = Agod ? I'm; Where (ar! = short) 1'f Citom== Cus = impo brand; aus = aus & rlind; if (we = = bood) options of they not should (n");



luz = cheal > rlid; While Cor! = chood if Citom! = an zinto arz = au = yline; Count tt from = Guz => (fronk) part - Cus > 7/100; grow orling = ract Dex + + Himb - draw; deceno de Cour) our = naxt; if (coat = 0) abe 2 C" norfanol "1); chown of Cifament / doosts on ord or dilated, Cours oration hard; Void display Outstand) NOD & tony. if (heard = rlind = = hol) for how of (" day somey (n'); valter; proval C'contents of dala"1; while Clomp ! - Shear)

party (" 1d, tonh > into); tout = tout > 2/11/2; printy (" In"); void man () Notehood lass; int How, dorce: good = get nach(): dod orling - hood: Ildy Scr (1; Choz Cii) 5 Print of C" (al: inst from a 2: instraco) = 8. delal drooten is deleterous). I intere lift of Prey 8. dependent occurred of they be 10. com 10); are 1: driver of (" and the ifon at faut once) "1); scorp (" "d", Aitom); clot - dissect front Citon, draw, brook; Case 2; frank of " contexte idencations sollia"); Scory C"/ d", Diron); dost direster oran Citem, chare, Dreak : Case 3: lot = odete - pront Cohord; Coset; lost - dolet vocare Cohors, break.

## PROGRAM-10: Write a program a). To construct a binary search tree b). To traverse the tree using all

the methods i.e, in-order, pre-order and post-order.

QUZ = YOOY; JosCi=0; i<StrlanColoradian QQ (vol = NULL; it ) Expres = aus; if alist (i) = = '(') aus = cus > 1/100; Cus = Cus -s rline; } if Cur 1 = NOCL 11 il = Strlon (dozenta and) frende Ctompi; retion Croot, 3 Ly Care = NULL) 3 2 ig (dector [ i-17 == il) free > Hino = tomp; foren + rlima = tomp; 3 Word sproorded Crope root) Eif Croom = NO(2) Expens y C" the Hora 18 1. d la", oxost = impo); Uprecardor Crost - ((ine); Pre orde (nont - rime); 3) Void smorde Chape read ) Six Croot 1=NUL Signorder Croot & Uline). Printly (" The item is 1. al n'; crost > mpo); EE; (milra toor) school Void post ords (NODE root) 2 ig Croot (= NULL) ¿ postordos (root > Hine); postordes (root >rlimh); Prince of C" The Hom is Idla", neet - sinter; 33 void display (NODE root, unti)

¿ sprint of C"Golor tranis. "); Pointy E"The postorder inorder transportion" imordy (root); 3 Cano 4: if Crost = - NULL) Exprint of C" Torce is sompty"); 3 & frant of C"Giron trae 18."); postorder Croot?; ? Care S. display C root, W; default: printy C! Tourild choice introd le?). convento