Mahantesh Gattina 1BM19EE025. Demonstrating Dollbly Linked Kirts. #include citalia.h> # include < stallib. h> stud mode int info;

returned * llink;

returned * relink; typidely struct node *NODE; NODE getmode() NODE X; x = (NODE) malloc (rigof (riteret mode)); if (x == NULL) faut (" memory full "); g exit (0); return x; void fremode (MODE X) J free (2);

NODE diviseit front (int item, NODE head) NODE temp, cue; temp = getnode (); temp> info = item; cur = head > slink; head > slink = temp; temp > llink = head; temp > Ntink = cus; wa > llth =temp; return head; dinnet-read (int item, NODE head) NODE temp, cus; temp = getnode (); temp > info = item; our = head -> llink; head > llink = temp; temp > slink = head', temp > llink = wa; cue-solute = temp; return head;

g

NODE dolete-front (NODE head) NODE cur, mest; if (head -> slink == head) fent (" de empty");
zetnen head; ar = head > sturk, ment = cus > slink) head > rlink = ment; ment > llink = liead; penilf!" the mode deleted is 1.d'n", we sinfo); premode (cur); return head; ddelete - rear (NODE head) NODE we, free; if (head > whink = = head) feirtf (" dle outty \n"); return head; we = head > llink; frew = wa > llink', head - Slink = pro; fores orlink = head; fruitfl" the mode deleted is -1. d", cur > info); fremode (ur); return head;

NODE invest-left post int item, NODE head) NODE temp, wa, prev; if (head > rlink = = head) paintfl" tissed entry \m");
return head; Cur = head -> rlink; while (we! = head) if (-item = = cur > rufo) break, cur = cur > rlink, if (w == head) firth ("key not found (n')); return head; free = cur > llink; " tem); feintf (" enter towards left of 1.d = turp = getnode (1) scarf (" -1.d", & temp > info); pow - rlink = temp; temp-> llink = pres; cus = llink = lung; temp = slink = ling; neturn head;

NODE insert-rightfor (int ilem, NODE head) NODE temp, wer, west; if (head > rlink = head) perulf (" list enfty (n");
return head; me = head -> rlink; while (us ! = head) of (tem == va>info) break) Cut = cut > link; if (cu { = = head) faintf (" key not found ("); g return head; frits of -1.d = ", Thens; next = cue > rlink; temp = get mode (); sauf (" 1. d", & item > info); un-salink = temp; temp > link = ais; temp > rlink = neit; next - s link = temp; return head;

Morch (int item, NODE head) NODE temp; if (head - stick = head) perulf (" dll untty in); return; temp = head > rlink; while (-temp! = head) if (temp > info == item) I fautt (" Element foundis); Jemp = temp = stub; fruits ("Element not found !!!"); void Helete-duplicates (int item, NODE head) NODE prev, cur, ment; int count; if (head = nlink == head) I paint [" tist empty (m"); noturni,

count = 0; ur = head = rlink; while (us != head) if (tem != cus = info) cus = cus > rlink (out ++) if (wount > 1) fru = un > llink; mest = cur > stinle; pres > stite = not; west = link = few, his part of fremade (us); (us = mid) (us = we > stuck), if (count == 0)

faintfl' key not found);

else if (count == 1) else little duplicates not foundin); feut ("duflicates found at 1.d positions and or delited \n', count-i);

void display (NODE head) NODE timp;
if (head > nlink == head) fruitf ("dll empty In"); returni Jainty ("contents of all (""); temp = head > rlink; while (temp! = head) heartf ("-1.d", temp >info); temp = temp > rlink; Jerry ("(n"); void main () NODE head, last; sut item, choice, head = getmode(); head soline = head; head slluth = head; for (;;) paint ("\m!: intest front \m2: in restreas \m3: delle leter road \m= : ... front my delete rea \n5: invest to the left of the key \n61; in to the right of the key \n7: rearch \n8: delete duffication (na: display \n 10: exit \n"); peint [" enter the choice \n"); scorf ("-1. d", & chaire); moitch (choire) core!: ferrif [" Enter the item of the front end \""); searf ("-1 d", ditem); last = dinsert-front (item, head); cax 2: feints ("enter the item at reas end in"); scarf ("1.d", & item); lest = dinnert_reas (item, head); care 3: lest = dddate front (head); break; case 4: last = oddelete rear (head); break; cox 5: |sint| [" enter the key item "); scenf ("I.d", & item); last = insect-lftfos(item, head); care 6: faintf ("enter the key item \m"); searf" ("-1.d", Liter); reach (item, head), Case 8: fruit (" outer the item \m"); rearf ("1.d", e tem); delete - Balufhestes (item, head); break; Cose 9: diffay (head); break;

case (0: Crit (0), default: exit (0); Experted outfut: 1: invest from 2: inset was 3: delete front u: delete reat 5: invest to the left of the key 6: inset to the right of the key 7: search l'arment 8: Delete duflicates 9: disflay 10: esit enter the choice enter the item at the front and 1: just front 2: muset rear 3: delete front 4: delete rear

5: invest to the left of the key
6: prisent to the right of the key
7: dearth
9: Debte duflicates
9: display
10: exit
enter the chain
10.