Lab -> 22/01/2024 Q. 1. Write a program to implement singly Linked List with following operation (90) Create a Linked List.

(b.) Insortion of a node at prost position at any position and at end of list.

Display the contents of linked list. Ans -> # include < stdio. h > # include < Stallboh 7 struct Node of int data ; Stryct Node " next; struct Node "createNode (int data) struct Node * new Node = (struct Node*). malloc (sizeof. (structNode)). if (newNode = = NULL) prints (" Memory allocation failed in"); exit(1) rewhode -> data = data; new Node -> next = NULL; return newsode struct Node & createLinked List (int values [] struct Node head = NULL; struct Nocle tail = NULL ; for (int i=0; ic size ; Hi) 1 struct Noole * neverlade = createrade (values [(1)) of (head = = NULL) {

head = neurrode; table newwoode; tall -> ment = neverlode; return head; void insentfinit (struct Node " head, int data) struct Node * new Node = create Node (data). newNode -> nent = "head" & head = neurrode " void insert At Position struct Node " head int data, int position, if (paition = 20) / inscritting (head , data) ; struct Node new node = createNode (data); struct Node & current = " head; for (Int l= 0; & < position-1;++i) / if (current = = NULL) points (" Invalid position In") setym ; current = current -> nent? new node -> next = current -> next;

current - nent = new node ; void inspertend (struct Node whead, int odata) struct Node mous node = contende (day) if (head == NULL) { " head = new node; retwen struct Node " current - " head; while (coverent) next 1 = NULL) coverent - coverent -> nent. current > next = now node; void display (stouct Node "head) { article (head & NULL) points (40/od -> ", had -> data) " had = head - next ; prints (4 NULL In 11). mt main () { struct Node linkedlist = createlinkedlist(); int data; print l'enter data to insert at bajoning scary (4.1.d" g Holata); Prosentfirst (2 linked Get, data); int position prints (4 Enter data to insert at a specific pesition: u);

scanf (40 pol " , Udata) =

prints (Enter position o ") ;

scanb (40 of od 11 , 4 position);

insert At Position (4 linked List , data, position) = Points (YEnter data to insert at end: 11) of scanf (4 of od 4 of 4 data) of insertend (at linked list; data); display (linked List); setween 0; Critput -: Enter number of clements: 4 Enter data to insert at the beginning: 5 Enter the position: 2 Enter data to insert at the end; 66 5-11-> 34-> 2-> 3-> 4-> 66-> NULL Pod.) WARP to implement Singly Linked list with following operations. (100) Create a kinked List. (bo) Deletion of first element, specified element and last element in list Display the contents of linked list.

Include <stdoon h 7 OF # include estallib. h> struct Node Createriale (int data) int data"; struct Node nont; stryct Node & createNode (int data) } struct Node * new Node = (struct Node) maller (sizeof (struct Node)); if (nevertode == NULL) { prints (4 momory allocation failed |1) revervode -> data = data; nowalade - next = NULL. return menthode o Node * createLinkedList () of Struct Node * head = NULL story it Node & tail = NULL o int size, data; points / 4 Enter the number of elements; " scanf (40/0011, 41 size) " prints ("Enter the elemente: In"):
for (int i=0; ix size; ++i); struct Node * new Node = e reale Node (data), if (hard 22 NULL) { head = new wode , tail 2 neverlodes

tail - new Node; setuen head; deleterinst (struct Node * head) { if (head == NULL) points ("List is empty Nothing to delete. In"); Strouct Node * temp = * had; free (temp); rieid delete Element (Stryct Node " head, int key) { prints ("Lest is empty. Nothing to delete In"); struct Node "current = "head; struct Node " prev = NULL; while (current 1= NULL 44 eyment -) data) poer = covert; envient = auvoient-, nevit ,

Prints ("Flements not found is to neturn; ib (prev== NULL) f * head = current -> nort; prev-nent = cuovent -> next. free (coverent). void deletelast (struct Node head) of is (x had == NULL) } points ("List is empty. Nothing to neturin " if ((nead) -> next == NULL) of free (head); thead = NULL? return . struct Node " current = " head" struct Node * prece = NULL ; while (current -) nent 1= NULL). prev 2 cywent current = current > next;

SURYA Gold preu -> nent = NULL . fall (current); void display (stryet Node * had) 1 while | head | = NULL | 1 prints (food -> 1 , head -> data). head = head -) next ; prints (4 NULL. In 4)0. int main () ; stryct Nocle 1 inkedlist = create Linkedlist() points (4 Linked list before deletion: 10" display / inked4st)? delete Pirst (12 linked List);

printf (4 Linked List after deleting Birst element: | h 11); olisplay (Linked List) points ("Enter the element to delay: ");
scans ("ofod", " hey);
deleteblement (4 linked List, key); point (4 Linked List after deleting

aperitied element | n ")

display (Linked list) deletelast (& linked List);

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prints (4 Linked list after deleting lest clans display (1 in kedCist);
Enter the elements:
Linked list before deletion: Linked list after deleting first element: 2 -> 3 -> 4 -> NULL Enter the element to delete: 4 Linked List after deleting sperified clement:
Linked list after deleting last elements a -> NULL John
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