Aim: Whate a C program in C to implement linked list? Implement a Program for pertorming the operation as menu driven program for the insertion, Deletion & display function respectively.

Objective: To implement menu driven program in linked list, for performing operations like insertion, deletion & display.

Aim: Write a C Program in C to implement linked list? Implement a Program for performing the operation as a menu Driven program for the insertion, Deletion & Display Function respectively.
Objective: To implement menu driven program in linked list, for performing operations like insertion, deletion & Display.
Theory: A linked list is a data structure consisting at nodes where each node points to the next node in the sequence. The Basic types of linked list one:
i> Single Linked List ii> Double Linked List iii> Circular Linked List
Common operations on linked list are:
• At the beginning: Add a new node at the stort of the List. • At the End: Append a new node at the end of the List. • In the middle: Insert a new node at a
Specific Position

	·
2)	Deletion:
	At the beginning: Remove the first node.
	At the end: Delete the last node.
	In the middle: Remove a node from a
	Specific position
3.	> Display:
	· Display the data in specific nodes
	· Display complete linked list.
C . •	
Code:	#include (stdio.h)
	##holude < Stallib.h >
	Struct node ?
	int info;
	Struct node * link;
	The state of the s
	Struct node * Start = NULL;
	void display () }
	Struct node temp;
	if (Staret == NULL)
4	printf("In The list is Empty In");
	temp = Staret;

	printf("In The linked list is:");
	while (temp != NULL) {
	printf (":/d >", temp->info);
	temp = temp -> link;
10 mm	
	prontf ("In NULL");
* * *	Void (reatelist ())
-	if (Start == NULL)
	int n;
	printf ("Enter the number of nodes: In"); scanf ("1-d" &n);
- 1 2-24	Scanf ("1-d" &n);
	A Company of the Comp
	if(n!=0)
	int data;
	Struct node * neumode;
,	Struct node * temp;
14	newnode = malloc (size of (struct node));
	Start = newnode;
*	temp = start;
1 7 35 11.	
	printf ("In Enter number to be inserted");
	Scanf("-1.d", & data);
	Start -> info = data;
	The state of the s

	for(int i = 2; i <=n; i++) {
	newnode = malloc(size of (struct node));
	temp -> lmk = new node;
4	printf ("In Enter number to be inserted in)
	Scanf ("1-d", & data);
	neunode -> info = data;
8	temp = temp -> link;
e de la companya de l	printf ("The list is created In");
8 3	Plse 1
	pmn+f("The list is already (reated In");
*	void insertAtFront()}
- 17 W	int data;
	Struct node temp;
	temp = malloc (size of (Struct node));
	printf("In Enter number to be
	mserted");
	Scanf (" 1-d", & data);
* 15. Z	temp -> info = data; temp -> lmk = Start;
147.50 E	start = temp;
250	

	void insertAt End () {
	int data;
	Struct node * temp, * head;
	temp = mallor (size of (struct node));
	printf ("In Enter number to be
- 5	inserted").
-	inserted"); scanf ("-1-d", & data);
	J. G.
	temp -> link = 0;
A	temp -> info = data;
	head = staret;
	while (head -> link != NULL) {
	head = head -> lmk;
	head -> link = temp;
1 186	
	838-32 December 1
	void insert-Atposition () {
	Struit node * temp, * newnode;
	int pos , data , 1 = 1 .
and the second s	newnode = malloc (size of (struct node));
	printf ("In Enter position & data to
	be inserted");
2 2 1 4 1	scanf (" 1-d 1-d", & pos, &data);
ALC:	

+ S =	temp = Start;
	newnode -> info = data;
4	neunode -> link = 0;
	while (i < pos - +) }
	temp = temp -> link;
	<u>i++;</u>
	newnode -> link = temp -> link;
r.	temp -> link = newnode;
8	
	void deletefrest () {
17 P	Struct node* temp;
	if (Start == NULL) {
	prontf ("In List is empty");
	} else {
	temp = Staret;
	Start = Start = link;
	free (temp);
	void delete End () {
	struct node *temp, * prevnode;
Tan Tan	

	if (Start == NULL) 1
	printf (" List is empty In"); } else {
	temp = start;
	while (temp -> link 1 = 0) {
	prevnode = temp;
	temp = temp -> link;
1,000	free (temp);
	prevode -> link = 0;
- 1	
	void deleteposition () {
塘	struct node *temp, *position;
	$m+ i = \pm pos;$
2	if (Start == MULL) {
	printf ("In List is Empty");
	Plse 1
7	printf ("Enter index no: ");
	Scanf (" 1.d" & pos);
	position = malloc (size of (struct node)
	temp = Staret:
	while (i< pos -1) {
	temp = temp -> link;
	NCENT PALLOTTI COLLEGE OF ENGINEERING & TECHNOLOGY, NAGPUR - 441 108

	position = temp -> lmk;
	temp -> link = position -> link;
	free (position);
	}
	int main () {
	(reatelist ();
	int ch:
3	while (1) {
ARTS	printf(" H 1. Insert at startlin);
	printf (It 2. Trisert at End In");
	mintf ("It 3. Insert at any Position In");
	prontf ("It 4. Delete at Start In");
	printf ("It 5. Delete at End In");
\$ 6 \$ 5 18	printf ("It 6. Delete at any position In")
	printf ("It 7. Display linked List In");
	printf ("exit In");
eros. **	
	printf ("Enter your choice In"); Scanf ("1.d", & ch);
	Statil 1 4 4 5 7
	Switch (ch)
	case 1: insert At Front ();
	break;
× 17/1-1	
- 1 Tr	

- 16	case 2: insertAtEnd ();
	break;
	case 3: insert Alposition ();
	break;
	case 4: insert deleteFirst ();
	break:
	case 5: delete End();
	break;
	case 6: delete Position ();
	break;
	case 7: display ();
	hand.
	(ase 8: 6xf (1);
4.	break;
	default: printf ("Invalid (hoice In");
ike E	To have been to find from the form
Output:	Enter the number of nodes: 4
	Enter number to be inserted: 10
	Enter number to be inserted: 20
	Enter number to be inserted: 30
	Enter number to be inserted: 40

Th	e list is Created
A STEP	1. For Insertion at Sturting
	2. For Insertion at End
, and a second second	3. For Insertion at any position.
	4. For deleting First element
	5. For deleting Last element
1	
	6. For deleting a element at any position. 7. Display the limited list
	8. To FXI
3	A STATE OF THE PARTY OF THE PAR
En	ter Chaice 7
76.5 F	linked list is 10 -> 20 -> 30 -> 40 -> NULL
•	
Alassithmils	teurt Defination
	fine a structure node with two feilds
110	Fo" to store data & "link" to store the
	dress of next node
	Alobal variables
108	clare a global variable "Staret" to keep track
at-	beginning of linked list.
	Display List Function
	fine a Function display, that traversex
the	linked list.

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Conclusion: Program ut linked list is implemented & executed successfully using C programming Language.

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Declare a global saddishe "Start" is keep ince at beginning at linked Ust:

iii 1) isplay List linuition

Leting a Finalian display, that base or i

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	iv Create a list Function:
* * * * * * * * * * * * * * * * * * *	V Create a function insert At Front
	vi (reate a function insertAtEnd
	vii (mate a function insert At Position.
	viii Create a function delete First
	ix (reate a function delete-End
7 51*	X (reate a function deletePosition
	xi All those function will implement it's
- 1), - 1 <u>8</u>	respective work acco to it's name
	xii I Main Function:
9.5 80	This function invokes the other functions.
Conclusion:	Program of State is implemented &
	executed successfully using C Programming
1.	Langauge.
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