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LAB - 8

DOUBLY LINKED LIST

a) Create b) Insert at left c) Delete at position
d) Display

Pseudocode:

```
struct node {
  struct node *prev;
  struct node *next;
  int data;
};

struct node *head;

void insertion_beginning() {
  struct node *ptr;
  int item;
  ptr = (struct node*)malloc(sizeof(struct node));
  if(ptr == NULL)
     printf("Overflow\n");
  else{
   printf("Value:");
   scanf("%d", &item);
  if(head == NULL) {
    ptr → next = NULL;
    ptr → prev = NULL;
    ptr → data = item;
   head = ptr;
}
 else {
 ptr → data = item;
 ptr → prev = NULL;
 ptr → next = head;
```

```
head → prev = ptr;
head = ptr;
}
printf("Node inserted\n");
}}

void deletion_specific() {
{ struct node *ptr, *temp;
  int val;
  printf(" Enter data after which node is to be deleted
  scanf("%d", &val);
  ptr = head;
  while(ptr→data! =val)
    ptr = ptr→next;
  if (ptr → next ==NULL)
    printf("Can't be deleted\n");
  else if (ptr→next→next ==NULL)
  { ptr→ next =NULL;
  else {
   temp = ptr → next;
   ptr → next = temp → next;
   temp → next → prev =ptr;
  }free(temp);
}

void display () {
struct node *ptr
printf("The values in doubly linked list are:\n");
ptr = head;
while(ptr != NULL) {
   printf("%d\t", ptr→data);
   ptr = ptr→next;
 }
}
```