```
Assignment - (CDSA)
1. Program to insert and delete an elemen
  posistion
#include estation>
 #include < oldlib.h>
  struct node
  int data's
  struct node & next;
  display(struct node + head)
  if (head == Null)
   printf ("NULL \n");
    clse
    printf ("-1-d In", head -1 data);
   display (head - next);
    del (struct node before -del)
    struct node + temp;
     'temp = before del - next;
      before.del - next = temp-next;
       free (temp);
      Struct node + front (struct node + head i'nt value)
       Struct node* P; mills on
        P = malloc (size of (smutrodel);
         P -1 data= value;
         Py nest = head;
        return (p);
       end (struct node * head int value)
       struct node & p, * q;
       P= malloc (size of (smet nodel);
```

```
Padata = value;
P-1 next = Null')
 gaheadi
  while ( 2-I next != NULL)
  if (at next! = NULL)
 Struct node * P;
  P= malloc (size of (struct node 1);
  P -1 data = value;
   P - rext = a - next;
    a y next = p;
  else
    print ("USE END FUNCTION TO INSERT AT THE ENDING)
  struct node & prev, & head, *p
  int air;
   brintt ( " WAMBER OF ETEMENAZII)
   300x6 ("1-d", & a);
    head : Null;
    For ( 1= 0; 1 ca ) 1++ )
    P= malloc (size of (smuch node));
    Seanf (" T.d" & P-1 data);
    it ( read > NULL)
     head : M.
```

```
else
prev - next = P;
              prev=P',
       head = front (head, 10);
              end ( head , 20) ;
                       after (head - next - next, 20);
                         del (head-Incat);
                                del (head-Inest-Inext);
                                display (head);
                                      return o;
                                                                                                                                                  o material come a contract come section and a section and 
               OUTPUT
       Number of elements 5
                        1
                          2
                           Z
                              5
                           110
                                       5
                                     20
                                       NULL
                                                                                                 way the form to write , The book is the on the
                                                                                                                 e a liqui per a water washer on
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                                                                                                                                                                                                Janen - van Jana
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2. New linked dist by Hurging marriage modes
# indude estatio. h?
# include c stdlibih>
 stand Node
 imf data;
 struct Node * next;
void push (struct Node** head-ref, int new-data)
 i
Struct Node * new-node = (struct Node *) malloc (Size of (struct Nog
   new_node_) data = new_data;
    new -node - nest = ( " need - ref);
    (thead -ref) = new-node)
   void printlist (struct Node * hourd)
    Struct Node * temp = head;
    while (temp! = NULL)
   {
printf ("/d", temp - voluta);
     temp=temp-) nextj
     g
printf("\n");
  void merge (struct Node * P, struct Node * 4 9)
  Struct Node * Prum = P; * 9- Curr' = * 9;
   Struct Node * P_next , & q_next;
   while (P-curr ! = NUCL & 2 - curr ! = NULL)
    P-Next = P-curra next;
    q-nest =q-curr -Inest;
    q-curr - nest = P-next;
    12-cur - neit = quary
     P-curr = P-nest;
     2-an = 2 rest
```

```
* 9 = 9-cury
Struct Node * P=NULL, * 9= NULL;
Push (&P, 0);
Push (&P,1);
Push (&P3);
Print f (" It LINKED LIST (N");
Printlist (P);
Push (29,3);
Push (2 2,8);
 Push (29,6);
Print f (" CHESS 2nd Linked List/n");
Printlist (a);
merge (P, 29);
 Print f (" CHANGED LINKED LIST / N");
 Prival list (P);
  refum o;
output
ist linked list
   200342
and linked List
  6 8 3
 CHARGED LINED IST
   364893
     364823
```

```
3. Find all the elements in the stack colore sum is equal by
      k (where k is given from wer)
#include <stdio.h>
# include < stdlib.h>
# include climits.h>
#define max 1000
  typedef struct stacks
    int ar[mar];
    int top;
  } Stack;
  void push (stack *s , int data) {
     if (s -> top > = max-1) {
       exit(o);
     3-1 40b++;
     s-) or [s-) top] = data;
    int pop(stact x s) }
     if (so top < 0) return INT_MIN;
      int temp= s -1 ar [s+top];
       3-7 FOP --;
        return temp's
   void display(stacks)?
    int i;
     for (i=s, top; i>1; i--) {
      print of ("-1. d", S. ar[]);
      bringt (u/n11)?
      roid sumk (stack SI, Stack v, int k) }
     , it ( k==0) }
      display(v),
      return;
    4 F(s1-top = = -1) refurn;
    int temp = pap (251);
    sumk ($1, 1, k);
```

```
stack VI= V;
push (&VI, temp);
Sumk(SI, VI, k-temp);
int main (int arge, char const * argui) {
 stack arr, v;
  arritop = -1;
                                   That we from the and mark
  v. top = -1;
  int expected, ninum;
   printf ("enter the number of element you want in stability
   scanf ("/-d", 2n);
                                  Parisons Don't Sharpt
  while (n -- ) of
                                   roor to broil to don't
   printf ("number(n");
   scanf (" 1.d", & num);
   push (fam, num);
                                portantipolici was Pania
 printf("enter expected value \n");
 scanf ("-/-d", & expected);
                                   I mil Kramat
  n sam top+1;
                              . Lich . Home & a mal
  Sumk (arr, v, expected);
 return o;
                                       Ly Dubus
```

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Transmission of At

```
4. Write a program to print the elements in a queue.
   in In reverse order
   city In alternate order.
H'include 2 stdidit
# include < stdlibih>
  typedef struct pode ?
   int data;
   struct Node "neit;
  I node;
  typedel struct queue {
     node * front , * rear;
   } queue;
   node & new Node (int 10)
    node * temp=
     hode* 1 malloc (size of (node));
       temp -> dala=k;
      temp+ next = NULL;
       return temp;
    queue create Queue()
     queue q;
     9. Front = 9. rear = NULL;
      raturn q;
  void enqueue (queue * q int k)
  ş
   rode * temp = newNode(K);
   if ( 9-) rear= NULL) }
      97 front = 9-1 rear = temp;
       return;
     2-1 rear - next = temp;
      9 - rear = temp;
   void display Alt (que ue a) [
   while ( g. Front ! EMULL) &
   printf ("1.d =) = " (q- front -) data);
    : f(q. front -) next : = NULL) q. front = q. front- rest -) next
           else breati
```

```
print f("NULLIN");
 void display Rev (queue q) {
  if (a. fronts NULL) {
    printf ("NULL");
int temp = q. front - 1 data;
 q. front = q. front -) next ;
 display Rev (a);
  printf("<- y-d", temp);
int main()
queue q= create Queue();
int ninum;
 printf (" enter the number of element you want in the
                                      queue(n");
 scanf ("-1.d", &n);
   while (n--) }
    printf ("number/n");
     Scanf ("+d", Lnum);
     enqueue (& annum);
  display ker(2);
   printf (" (n");
                                  こうかってきゃんしいもういん
    displayAI+(2);
    return of
```

· Brown was the

sit How away is different from the Inted 11stsit How away is different from the first element of ano
ill write a program to add the first element of ano
list to another list for example we have \$1,2,33 in light
and {4,5,6} in list 2 we have to get {4,1,2,3}
an output for list 1 and {5,6} for list ?

	Linked list
1. Size of an array is fixed	1. Size of a list is not fred
2. Stoccupies len memory than	a. It occupies more momory
a linted list for the same	Light Arman Co
number of elements	
3. Deleting an element from an	3. Deleting an element
array is not responsible	is possible
4 Unsertion and deletion take	4. Insertion and deletion
more time.	procen take. len timp

```
##indude < stdio.h>

##indude < stdio.h>

Struct Note

int data;

struct Node* rext;

your push (struct node * + head-ref, int, new-data);

Struct Node* new-node = (struct Node *) malloc (size of (struct Node));

new-node -1 data = new-dota;

new-node -1 next = (* nead-ref);

(* head-ref) = new-node;

your printhst (struct Node * head)

struct Node * temp=head;

while (temp! = nu LL)

printf("-1.d", tem p-1data):

temp = temp = next;
```

Scanned with CamScanner

```
grint F ("In");
void merge (struct Node 4 p, struct Node * 4 a)
 Struct Node * P-curr = P, * 9-curr = *9;
 Smuch Node & P_nest, &q_next;
  range (6- cani = natt 35 5 - cani = natt)
 P-next = P-curr -next;
  q_next = 2-curr - next;
  q=curr -1 next = q-curr;
    P-curr = P-next;
    9-curr = 9-nenti
    * 929-CUYY;
    int main()
    Struct Node * P=NULL, *9=NULL)
    push (2 P, 6);
    push (2 P 18);
    push (& P,9);
     PHINAF ("181 HILINKED LIST (N");
     printlist (P);
     Push (2 9,7);
     push (22,9);
     push ( & q , 3);
      push (22,8);
       push (22,6)1
      PHINTE (" 2nd LINKED LIST / N");
      print list(2);
      merge (P, 22);
     Printf (" CHANGED $5" LINKED LIST (N");
      printlist(P).
      BRING E ("CHANGED 2nd LINKED LIST / NI)
      bring 1121 (51)
```

output

(St tink

1st LINKED LIST

9 8 6

240 LINKED LIST

6 8 3 9 7

CHANGGED 137 FINFED FITT

9 868 8 6 3

CHANGED 2HD LINKED LIST

9+7