```
1) To insert an clement & delete at a specific position
  in linked list when his k is taken from ween
 A) Pogramme
             <stdio.h>
   Hinclude
             < stdlib.h>
  # include
                                                 int after)
   & void insert_after (struct node * head, intralue fintafte
     int a printf ("Enter the int-after,")
            scanf ("".d" lint-after)
      2 Stouct bode * new_node = NULL;
        stouct node * tmp = head;
        while (tmp) {
        if (tmp ->val == after) [/ * found the node */
        new_node= (Struct node *) malloc (size of (struct node));
       if (new=node == NULL) {
         point f ("failed to insert element. But of memory");
      new_node -> val = value ;
     new - node -> hext= tmp->next;
     tmp->next: new-node;
      seturn;
   Emp: Emp-> next;
```

```
receivede (struct Node ** head-ref, int position)
 if ( * head ref ? NULL)
    deturn
 Stouct Node + temp = + head_ref; all
 If (Position == 0)
 *head -def = temp-next
   free (temp).
   between.
for (int i=0; temp) - Nou & 1 / Position -1; i+1)
        temp-temp-mext;
if ( temp - NULL 11 temp -> next = NULL)
Stouct · Node * next: temp- >next->next.
face (temp.) next);
 tem->next. hest.
```

```
linked list at alternate position
2) Mergea
  #Include <stdio.h>
  # include <ctdlib.h>
   Struct Node
         int data;
          Struct Nodo * next;
     9%
       roid push (struct Node ** head-ref, int new_data)
            Struct Node * new_node =
                   (Struct Node *) malloc(size of (struct Node))
           new-node->data = new-data;
          new-node- >next = (* head-det)
          (* head - ref) = new _ no des.
     void Pointlist (stauct Node * head)
        Stouct Node * temp = head;
       while (temp! = NULL)
       ¿ point f("/d", lomp->data).
        temp: temp-> next;
```

```
Pointf("/n");
                    the cold by a
3
  Void merge (struct Node * p, struct Node * +2)
      Stouct Node * P-Cusr = P, *9-Cusr=+9.
      Struct Node * P-next; *9-next;
    while (P-cuss != NULL IL q-cuss != NULL)
          P-next= P_cusr->next;
          9. next= 2-curs -> next;
         9- Curs->next= P-next:
          P-curs ->next = q-curs.
          P-Curo = P=next
         9-Cuar = 9-next;
   *9 = 9 auss;
              if the good big it mor
                     Asym sing ... + . inst
```

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Preversing clements in a que in a que in a que in a que
  # include <stdio.h >
  # include < stdlib. h7
                                   是一种
     Stouct stackrowd
   J;

Typedof struct stack record * stack creer

Stack creer

E
                               J2 x yri)
    S = malloc (size oblstand stack accord);
if (s.
    if (s = = NULL)
       Pointf("out of space")
    5- Lassay = malloc ((size of (in )) * max)
     if (s->assay == NULL)
       Pointf ("out of space");
      5->away: malloc((sigof (int)) * max)
       if (S->wax) = = NULL)
       ¿ pointf("out of space").
```

```
S-> capacity: max-1;
 S-> tos = -1;
deturn (s)
 int is emptys (stacks)
  deturn S-> tos = = -1:
  int is full s (stacks)
   deturn S->tos == S->capacity;
    void push (int x, stacks)
    if (is fulls'(s))
    Printf ("Overfbu");
   clse
    pointf ("In 1.d is Pushed", t)
    5->tos++;
    s->amay [s->tos]=+
    int top and pop (stucks)
   if Lis emptys (s)
    Pointf( In emply stack")
    octurn;
```

```
Solse
point f (" in ild is popped", S-arous [s->los]).
 actuan S->02804 [5->605--]
         quoue record
Stouc t
 int Yarray
int front;
 int dear;
 int capacity;
 3:
 typedef stouct queuesecord *queue;
 queue cocatqueue (int max)
  9 = malloc (size of (struct queue second);
  if (q = = NULL)
  Point f("Error")
  9->asoay = malloc (size of (int) + max);
  if (q-> array==NULL)
   Pointf("Exrox").
   9 -> capacity = max -1:
   9 - >front = -1;
    9->dear = -1:
```

```
int is fulla (queae a)
 seturn (9->0ear == 9->capacity);
 int is enpty q (que ue q)
  octurn (q->front==-1);
 Void enqueue(queue 2, intx)
  if (is fully (a))
 Point F("over flows")
                                      C + 100/0 = FE
                        begar Stance duencom
                     Court guerre ( at max)
Printf("In 1/d is enqued ", x);
2->rear++;
2 -> assay [q->seas ]= x:
if (q->foont==-1)
 9 ->foont++;
                      g->usiny = mullipe ( sye off
int foo nt and delete (queue a)
  int P;
```

```
if lisemptx 2 was
                                 26.7 - 74.7 - BUL D 17140
& point f ("under Flow");
                               · I some & for I want
                              Jamis on ot Jacks !
return;
                               - my faith of the contract of
3
ρ= q->aras [q ->front]
pointf ("In 1-d is foont & deleted ", p).
 9 - >foont++;
 oetuan P:
                                      (21d 3) n. - 102
 void display (queue 2)
 E Inti,
                                   And the first for
  if (is empty q (a))
                                  West of the same.
 { Paint f("under Flow");
                                   e constant
 y octuon;
 for (i=q->front; ioan; i++)
  Point f("/d 1 t', q->assax [1]):
  int main (
                                     To metalin certain
  Int max, ele, i, choice, n=0, x2;
 queueq:
  Stacks:
```

```
Point F ("InD Enter the may dements")
2 Scanf ("1.d" & smar);
  9 - Coeate queue (max);
  S = Coentratack (max);
   while()
  E point F (I'm Monu: I Mert 2. Display devened and
                3. cxit');
   Point f ("In Enter the choice").
   Scan & C't. d' Echoice)
   Switch (choice)
  pointf("In Enter the element;");
  sanf ("Id ", sele);
  enqueue (q.ele);
   n++;
  bocak;
 case 2:
 printf("in Contents of the queue!)
 display (a);
 for (i= b; i < capacity; Ht)
```

```
push 62,5)
\frac{3}{9-7} front = -1
9-78ea8 = -17
for (i=0; i/ capacity ; i+1)
Ey = top and pop(s)-
enqueue (a,y);
Point f ("In Revenue d contents are ");
disp by (q);
          - - Stee Part
case 3;
                           For France & Shape
exit(o)-
                          to me foreigned me and
```

5) Array	Linked List
1) It consistent set of a	It is an ordered set corpus
fixed number of data	a variable number of duta
items	items
Specified dwaing declaration	No need to specify; gou
· · ·	and shoink during execution
stored consecutively	Stored Rando mly
Direct or Random acesss	Segentially accessed
Slow Belefiniti as shifting	Easier, fast & efficient
is required	1436 4 Effecient
Both Binary & linear	Linear Search
Sourch	
less required memory	More manay orgheired
Ineffective	Ebbiciert

```
# include <stdio.h >
# include <stdlib h>
Eint data;
  Struct Node * rext:
E douct Node * new node = (stand Node*) malloc (size of (stand
  new-node ->data = new-data;
  new_nade ->next = ("head -ref);
 (*head-sef) = new_node;
   Void Printlist (Sloud Node * head)
    Stoud Node * temp = head :
    while (templ=NULL)
      Printf("/d", temp->data);
       temp= temp->next;
      Points ("In")
```

```
3 Stouct Node * P-CUDO = P, *q-CUDO = *2;
     Stouct Node* P-next, *qnext;

    P_next = P_cuss -> next;

         9-next=9-curr >next
       9, _ Curs -> next: P_next;
S
        P-Cusr ->ncx t= q-cuss;
        P_CUOS = P_nest;
        9_curs = q-next;
                       and made by the state of any
7
     *9 =9 - Curs;
                          e and in it is some holy
                              Cash 11-3) dil
    int main()
                       Frall 130 mar - religion.
      Struct Node * P = NULL; *q = NULL;
    Push (2P; 3);
    Push (1 P; 2);
    Push (RP, 1)
    Point ("First List In");
    Toint List (q);
```

vnerge(P,2Q);
Printf('Merged Cist:\n'),
PrintList(P);
PrintList(a);
gctchar();
return O;