LAB-4;

: Double Ended Queue:

```
#include< stdio.h>
# include< conio.h>
# define qsize 5

int f=0, r=-1, ch;
int item, q[10];

int isfull()
  {
   return(r==qsize-1)? 1:0; }

int isempty()
  { return (f>r)? 1:00; }

void inset_rear()
{ if(isfull()) {
        printf("Queue overflow\n");
        return; }
  r=r+1
  q[r]=item; }

void delete_front()
{
  if(isempty())
   { printf("queue empty\n");
     return; }
printf("item deleted is %d\n",
       q[(f)++]);
if(f>r)
     { f=0; r=1; }
}
```

```
void insert_front()
{  if (f!=0)
   { f=f-1; q[f]= item; return;}
   else if ((f==0) && (r==-1))
     { q[++(r)]= item ,return ; }
   else
       printf ("insertion not possible\n");
}
void delete_rear()
  {
   if (isempty())
     {  printf ("Queue is empty\n");
        return;
     }
  printf ("item deleted is %d\n", q[(r)--]);
    if (f>r)
   {  f=0;  r=-1; }
  }

Void insert_front()
 {  if (f!=0)
    { f= f-1;  q [f]=item; return;}
    else if ((f==0) && (r==-1))
         q[++(r)]=item; return;
    else
        { q[++(r)] = item; return;}
    else
        printf ("insetion not possible\n");
 }

Void delete_rear()
  {
   if (isempty())
      {  printf ("Queue is empty\n");
         return; }
```

```
printf ("item deleted is %d\n"
            q[(r)--]);
  if (f>r)
       { f=0 ; r=-1; }
   }

void main()
{
   for(;;)
  { printf (" 1. inseit_rear \n
              2. inseit_front \n
               3. delete_rear \n
               4. delete_ front \n
               5. display \n
                6. exit \n");

printf (" enter choice \n");
  Scanf (" %d", &ch);
  Switch (ch)
 {
  case 1: printf ("enter the item \n");
       scanf ("%d", &item);
        inseit_rear();
         break;

   case 2: printf ("enter the item \n");
         Scanf ("%d", &item);
         in seit_ front();
         break;
   Case 3: delete_rear();
          break;
    case 4; delete_front();
          break;
    Case 5; display();
          break;
```

```
        default : exit(0);
    }
  }
}
```