LAB PROGRAMS
Data Structure and Applications

1. **Design, Develop and Implement a menu driven Program in C for the following array operations.**
   a. Creating an array of N Integer Elements
   b. Display of array Elements with Suitable Headings
   c. Inserting an Element (ELEM) at a given valid Position (POS)
   d. Deleting an Element at a given valid Position (POS)
   e. Exit.
   Support the program with **functions** for each of the above operations.

```
#include<stdio.h>
#include<conio.h>
#include<stdlib.h>
int a[100],n,i,pos,num;
void create();
void display();
void insert();
void del();

int main()
{
int ch;
while(1)
{
//system("cls");
printf("---------------------------------------");
printf("\n 1. Create an array");
printf("\n 2. Display an array");
printf("\n 3. Insert an element into an array");
printf("\n 4. Delete element");
printf("\n 5. Exit");
printf("\n ---------------------------------------");
printf("\n Enter your choice\n");
scanf("%d",&ch);
switch(ch)
{
case 1: create();
        break;
case 2: display();
        break;
case 3:insert();
        break;
case 4: del();
```

```
            break;

case 5: exit(0);
default:printf("Invaid option\n");
            break;
}
getch();
}
}
void create()
{
            printf("Enter the size of an array\n");
            scanf("%d",&n);
            printf("Enter array elements\n");
            for(i=0;i<n;i++)
            scanf("%d",&a[i]);
}
void display()
{
            printf("Array elements are\n ");
            for(i=0;i<n;i++)
            printf("%d ",a[i]);
}
void insert()
{
            printf(" Enter number to be inserted\n");
            scanf("%d",&num);
            printf("Enter the postion to insert\n");
            scanf("%d",&pos);
            for(i=n-1;i>=pos;i--)
            {
            a[i+1]=a[i];
            }
            a[pos]=num;
            n++ ;
}
void del()
{           int item;
            printf("Enter the element position  ");
            scanf("%d",&pos);
            item=a[pos];
            for(i=pos;i<n-1;i++)
            {
            a[i]=a[i+1];
            }
            n--;
            printf("Deleted element is %d ",item);
}
```