AIM:	Demonstrate the use of pointers to solve a given problem.
Program 1	
PROBLEM STATEMENT:	Write a program to swap the smallest and largest elements in an array using pointers
PROGRAM:	

```
#include<stdio.h>
int main() {
   int i,n,max=1,min=1,t;
   printf("Enter number of elements\n");//Taking the number of elements in an array
   scanf("%d",&n);
   printf("Enter values\n");
   int a[n];
   for ( i = 0; i < n; i++)
   {
      scanf("%d",&a[i]);// Values of each elements
      if(*(a+i)>=*(a+max))
      {
         max=i;//Maximum number in the array
      }
      else if(*(a+i)<=*(a+min))
      {
         min=i;//Minimum number in the array
      }
   }
   t = *(a+min);
   *(a+min) = *(a+max);
   *(a+max) = t;
   printf("----------------------------------------\n");
   for ( i = 0; i < n; i++)
   {
      printf("%d ",a[i]);
   }
   printf("\n----------------------------------------");
   return 0;
}
```

RESULT:

```
Enter number of elements
7
Enter values
23 4 56 3 90 45 78
----------------------------------------
23 4 56 90 3 45 78
----------------------------------------
```

Program 2	
PROBLEM STATEMENT :	Write a program to reverse the position of all elements in the array using pointers.

PROGRAM:	#include<stdio.h>
	int main(int argc, char const *argv[]) {
	int i,n;
	printf("Enter number of elements\n");//Taking the number of elements in an array
	scanf("%d",&n);
	printf("Enter values\n");
	int a[n],b[n];
	for (i = 0; i < n; i++)
	{
	scanf("%d",&a[i]);// Values of each elements
	}
	printf("Reversed array\n");
	for (i = 0; i < n; i++)
	{
	*(b+i) = *(a+n-1-i);//Storing the revese of array one to other array
	printf("%d ",b[i]);//printing reverse of an array
	}
	return 0;
	}

RESULT:

```
Enter number of elements
7
Enter values
23 4 5 6 7 89 34
Reversed array
34 89 7 6 5 4 23
```

Program 3	
PROBLEM STATEMENT:	Write a program to calculate the transpose of a matrix using pointers. Dimensions of the matrix will be decided by the user.

PROGRAM:	#include<stdio.h>
	#include<stdlib.h>
	int main()
	{
	int matrix[10][10],i,j,r,c;
	printf("How many rows and columns in the matrix:- ");
	scanf(" %d %d",&r,&c);//Taking number of rows and columns

```
        printf("Enter the elements:- ");
        for(i=0;i<r;i++)
        for(j=0;j<c;j++)
        {
        scanf("%d",&matrix[i][j]);//Taking values of each elements
        }
        printf("----------------------------------------\n");
        printf("The transpose of matrix is:- \n");
        for(i=0;i<c;i++)
        {
        for(j=0;j<r;j++)
                printf("%5d",matrix[j][i]);//Printing the Transpose
        printf("\n");
        }
        printf("----------------------------------------");
        return 0;
}
```

RESULT:

```
How many rows and columns in the matrix:- 2 3
Enter the elements:- 2 3 5
4 5 6
----------------------------------------
The transpose of matrix is:-
    2    4
    3    5
    5    6
----------------------------------------
```

CONCLUSION:	In this experiment we learned to demonstrate the use of pointers to solve a given problem.