```c
/*
* Que.1 : print the sum of all elements in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20],i,n,sum = 0;

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
	printf("enter %d elements",n);

	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}
	// display array elements
	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}
	// logic for sum of elements
	for(i = 0 ; i < n ; i++)
	{
		sum = sum + a[i];
	}
	printf("\nsum of array elements is %d",sum);

	getch();
}
```

```c
/*
* Que.2 : Count the number of elements less than, greater than, equal to zero in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20];  // array
	int i;  //looping variable
	int n;   //elements in array
	int l = 0;
	int g = 0;
	int z = 0;  //counting variables

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
	printf("enter %d elements",n);

	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}
	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}

	for(i = 0 ; i < n ; i++)
	{
		// greater than zero
		if(a[i] > 0)
		{
			g++;
		}
		// less than zero
		else if(a[i] < 0)
		{
			l++;
		}

		else
			z++;

	}
	printf("\n greater than zero elements are %d",g);
	printf("\n less than zero elements are %d",l);
	printf("\n equal to zero elements are %d",z);
	getch();
}
```

```c
/*
* Que.3 : print index of pallindrome element in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20]; //array
	int n;  //elements in array
	int i;  //looping variable
	int rvs = 0;  //reverse number
	int temp;  //temporary variable
	int rmd;   //storing remainder

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
	printf("enter %d elements",n);

	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}
	// diplay array elements
	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}

	for(i = 0 ; i < n ; i++)
	{
		temp = a[i];
		// pallindrome logic
		rvs = 0;
		while(temp != 0)
		{
			rmd = temp % 10;
			rvs = rvs * 10 + rmd;
			temp = temp/10;
		}
		// if given element is palindrome print its index
		if(a[i] == rvs)
		{
			printf("\\n%d is pallindrome element position at %d index",a[i],i);
		}

	}

	getch();
}
```

```c
/*
* Que.4 : print 1st half array in ascending order n 2nd half array descending order
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20]; //array
	int n;  //elemnts in array
	int i,j;  //looping variable
	int m;  //middle of array
	int temp;  //temporary variable

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
    printf("enter %d elements",n);

	for(i=0; i < n ;i++)
	{
		scanf("%d",&a[i]);
	}

	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}
	printf("\n1st half ascending and 2nd half descending array is\n");
	m = n/2; // middle element of array

	// logic of sorting 1st half
	for(i = 0 ; i <= m ; i++)
	{
		for(j=i+1 ; j <= m ; j++)
		{
			if(a[i] > a[j])
			{
				temp=a[i];
                a[i]=a[j];
                a[j]=temp;
            }
		}
	}

	//logic of sorting 2nd half
	for(i = m+1 ; i < n ; i++)
	{
		for(j=i+1 ; j < n ; j++)
		{
			if(a[i] < a[j])
```

```
                {
                        temp=a[i];
                    a[i]=a[j];
                    a[j]=temp;
                }
            }
        }
        for(i = 0 ; i < n ; i++)
        {
            printf("%d ",a[i]);
        }

        getch();
}
```

```c
/*
* Que.5 : Copy elements of one array into another array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20]; //array
	int i;  //looping variable
	int n;  //elements in array
	int b[20];  //another array

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
    printf("enter %d elements",n);

	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}

	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}
	// copy elements in another array
	printf("\ncopied elements in array are \n");
	for(i = 0 ; i < n ; i++)
	{
		b[i]=a[i];
		printf("%d ",b[i]);
	}
	getch();
}
```

```c
/*
* Que.6 : sorting of even elements in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i , j; // looping variable
        int n; // number of elements
        int temp; // temporary variable
        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);


        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("\nbefore sorting elements are :\n");
         for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);
        }

        //sorting logic of even elements
        for(i=0 ; i<n ; i++)
       {
              for(j=i+1 ; j<n ; j++)
              {
                     if(a[i]%2 == 0 && a[j]%2 == 0 && a[i] > a[j])
                     {
                            temp=a[i];
                        a[i]=a[j];
                        a[j]=temp;
                     }
              }
        }
       printf("only even numbers arranged in ascending order:\n");

       for(i=0 ; i<n ; i++)
       {
              printf("%d ",a[i]);
       }


       getch();
  }
```

```c
/*
* Que.7 : Separate odd and even integers in same array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i,j; // looping variable
        int n; // number of elements
        int temp = 0; //temp variable

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);

        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        for(i = 0 ; i < n ; i++)
        {
               for(j = i+1 ; j < n ; j++)
               {
                      if(a[i] % 2 == 0 && a[j] % 2 != 0)
                      {
                             //if current element is even n next element is odd then swap
                             temp = a[j];
                             a[j] = a[i];
                             a[i] = temp;
                      }
              }
        }
        printf("after seperating odd n even elemets in same arry\n");
        for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);

        }
        getch();
}
```

```c
/*
* Que.8 : Count the frequency of each element in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20]; //array
	int i,j;  //looping variable
	int n;  //elements in array
	int count;  //counting variable

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
	printf("enter %d elements",n);

	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}

	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}

	//count frequency
	for(j = 0 ; j < n ; j++)
	{
		count = 0;
		for(i = 0 ; i < n ; i++)
		{
			if(a[j] == a[i])
			{
				count++;
			}
		}
		printf("\nfrequency of %d is %d",a[j],count);
	}
	getch();
}
```

```c
/*
* Que.9 : Print all unique numbers in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20]; //array
	int i,j;  //looping variable
	int n;  //elements in array
	int count;  //counting variable

	printf("enter how many numbers you want to insert\n");
	scanf("%d",&n);
    printf("enter %d elements",n);

	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}

	printf("elements in array are :\n");
	for(i=0; i < n ;i++)
	{
		printf("%d ",a[i]);
	}

	//unique count
	printf("\nunique elements are :\n");
	for(j = 0 ; j < n ; j++)
	{
		count = 0;
		for(i = 0 ; i < n ; i++)
		{
			if(a[j] == a[i])
			{
				count++;
			}
		}
		if(count < 2)
		{
			printf("%d ",a[j]);
		}
	}
	getch();
}
```

```c
/*
* Que.10: Insert new element in array(sorted)
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i,j; // looping variable
        int n; // number of elements
        int temp; //temporary variable
        int num;  //insert element

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);

        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("array elements are :\n");
        for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);
        }

        printf("\nenter element you want to insert : ");
        scanf("%d",&num);

        //logic for sorting
       for(i=0;i<n;i++)
       {
              for(j=i+1;j<n;j++)
              {
                     if(a[i] > a[j])
                     {
                            temp = a[i];
                        a[i] = a[j];
                        a[j] = temp;
                     }
              }
       }

       //check exact position to insert new element
       for(i = 0 ; i < n ; i++)
       {
              if(num < a[i])
              {
```

```
                temp = i; break;
            }
        }

        //insert element at exact position
        for(i = n ; i >= temp ; i--)
        {
            a[i] = a[i-1];
            if(i == temp)
            {
                a[i] = num;
            }
        }

        //print expected array
        printf("\nexpected array is : ");
        for(i = 0 ; i <= n ; i++)
        {
            printf("%d ",a[i]);
        }

        getch();
}
```

```c
/*
* Que.11: Delete element in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i,j; // looping variable
        int n; // number of elements
        int num;  //position that delete element

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);

        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("array elements are :\n");
        for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);
        }

        printf("\nenter position that which you want to delete the element in array : ");
        scanf("%d",&num);

       //delete element at exact position
       for(i = num-1 ; i < n-1 ; i++)
       {
              a[i] = a[i+1];
       }

       //print expected array
       printf("\nexpected array is : ");
       for(i = 0 ; i < n-1 ; i++)
       {
              printf("%d ",a[i]);
       }

       getch();
  }
```

```c
/*
* Que.12: Print minimum and maximum elements in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i; // looping variable
        int n; // number of elements
        int min;  //stores minimun value
        int max; //stores maximum value

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);

        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("array elements are :\n");
        for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);
        }

        //logic for minimum value
         min = a[0];
         for(i=0 ; i < n ; i++)
         {
                if(a[i] < min)
                {
                       min = a[i];
                }
         }

         //logic for maximim value
          max = a[0];
         for(i=0 ; i < n ; i++)
         {
                if(a[i] > max)
                {
                       max = a[i];
                }
         }
         printf("\nminimum value is %d & maximum value is %d",min,max);
       getch();
}
```

```c
/*
* Que.13: Print 2nd highest element
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20];// array
        int i;  //looping variable
        int n; //number of elements
        int max; // max value
        int max2; //2nd max value

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);


        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("\nelements in array : ");
         for(i=0; i < n ;i++)
        {
               printf("%d ",a[i]);
        }

         // logic for finding 2nd maximum value
         max=a[0];
         for(i=0 ; i < n ; i++)
         {
                if(a[i] > max)
                {
                       max2=max;
                       max = a[i];
                }
                else if(a[i] < max && a[i] > max2)
                {
                       max2 = a[i];
                }

         }
         printf("\nsecond max is %d",max2);
         getch();

 }
```

```c
/*
* Que.14: find number of elements in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{
	int a[ ] = {6564,572,8623,9723,4648,86,234,87,234};  //array
	int i; //looping variable
	int cnt = 0; //counting variable
	// calculate size of array
	cnt = sizeof(a)/sizeof(int);
	printf("number of elements in array : %d\n",cnt);

	printf("elements in array are :\n");
	for(i = 0 ; i < cnt ; i++)
	{
		printf("%d ",a[i]);
	}

	getch();
}
```

```c
/*
* Que.15: Check array bounds while inputing elements in an array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{
	int a[5];  //array
	int i = 0; //looping variable
	int cnt; //counting variable

	cnt = sizeof(a)/sizeof(int);
	printf("count = %d",cnt);

	printf("\nenter elements in array are :\n");
	while(1)
	{
		// if I is more than array size then break loop
		if(i == cnt)
		{
			printf("array bound !!");
			break;
		}
		scanf("%d",&a[i]);
		i++;
	}

	getch();
}
```

```c
/*
* Que.16: Print alternate elements in array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i; // looping variable
        int n; // number of elements

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);


        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("array elements are :\n");
        for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);
        }
        // alternate elements
        printf("\nalternate elements in array are :\n");
        for(i = 0 ; i < n ; i=i+2)
        {
               printf("%d ",a[i]);
        }


      getch();
  }
```

```c
/*
* Que.17: Print 2 elements in array such that difference between them is largest
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i; // looping variable
        int n; // number of elements
        int min;  //stores minimun value
        int max; //stores maximum value

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements",n);


        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

         min = a[0];
         for(i=0 ; i < n ; i++)
         {
                if(a[i] < min)
                {
                       min = a[i];
                }
         }
        // when two numbers are smallest small and largest large then their difference is
large
          max = a[0];
         for(i=0 ; i < n ; i++)
         {
                if(a[i] > max)
                {
                       max = a[i];
                }
         }

         printf("\ntwo values largest difference is %d and values are %d & %d",max-
min,max,min);
       getch();
  }
```

```c
/*
* Que.18: input string store their ascii values in an int array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{
	char str[50];
	int a[20];
	int i,sum;

	printf("enter a string : ");
	fgets(str , sizeof(str) , stdin);

	for(i = 0 ; str[i] != '\n' ; i++)
	{
		a[i] = str[i];
	}
	sum = i;
	//here we print ascii values

	printf("ascii values of given string : ");
	for(i = 0 ; i < sum ; i++)
	{
		printf("%d ",a[i]);
	}

	getch();
}
```

```c
/*
* Que.19: Print squares of elements in same array
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
 {
        int a[20]; //array
        int i; // looping variable
        int n; // number of elements

        printf("enter how many numbers you want to insert\n");
        scanf("%d",&n);
        printf("enter %d elements : ",n);


        for(i=0 ; i < n ; i++)
        {
               scanf("%d",&a[i]);
        }

        printf("array elements are :\n");
        for(i=0 ; i < n ; i++)
        {
               printf("%d ",a[i]);
        }

        printf("\narray of square of elements :\n");
        // here we prints square of elements
        for(i = 0 ; i < n ; i++)
        {
               printf("%d square is %d\n",a[i],a[i]*a[i]);
        }

       getch();
  }
```

```c
/*
* Que.21: Find given int X appears more than n/2 times in sorted array of n int
* owner : Shreya Kailas Saskar
* batch : PPA9
*/


// solution :

#include<stdio.h>
#include<conio.h>

void main()
{

	int a[20],i,n,x,cnt = 0;

	printf("enter how many numbers you want to insert : ");
	scanf("%d",&n);

	printf("enter %d elements : ",n);
	for(i=0; i< n ;i++)
	{
		scanf("%d",&a[i]);
	}

	printf("\nenter a number you want to find more than %d times\n",n/2);
	scanf("%d",&x);
	// if given number is not available in given array
	for(i=0; i < n ;i++)
	{
		if(a[i] != x)
			cnt++;
	}
	if(cnt == 0)
		printf("%d is not in given array",x);
	// if given number is available in given array
	else
	{
		cnt = 0;
		for(i = 0 ; i < n ; i++)
		{
			if(a[i] == x)
				cnt++;
		}
		if(cnt > n/2)
			printf("\n%d is appears more than %d i.e %d times",x,n/2,cnt);
		else
			printf("\n%d is appears less than or equal to %d times",x,n/2);
	}

	getch();
}
```