**Assignment 15**

1. #include<stdio.h>

int gr(int a[],int n);

int main()

{

int n,a[100],i,c;

printf("enter the size of array: ");

scanf("%d",&n);

printf("enter values of array: ");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

printf("the greatest number is: %d",gr(a,n));

}

int gr(int a[],int n)

{

int max=0,i;

for(i=0;i<=n;i++)

{

if(max<a[i])

{

max=a[i];

}

}

return max;

}

2. #include<stdio.h>

int sm(int a[],int n);

int main()

{

int n,a[100],i;

printf("enter the size of array: ");

scanf("%d",&n);

printf("enter values of array: ");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

printf("the smallest number is:%d",sm(a,n));

}

int sm(int a[],int n)

{

int small=a,i;

for(i=0;i<n;i++)

{

if(small>a[i])

{

small=a[i];

}

}

return small;

}

3. #include<stdio.h>

int sort(int a[],int n);

int main()

{

int n,a[100],i,c;

printf("enter the size of array: ");

scanf("%d",&n);

printf("enter values of array: ");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

c=sort(a,n);

}

int sort(int a[],int n)

{

int i,tem,j;

for(i=0;i<n;i++)

{

for(int j=i+1;j<n;j++)

{

if(a[i]>a[j])

{

tem=a[i];

a[i]=a[j];

a[j]=tem;

}

}

}

for(i=0;i<n;i++)

{

printf("%d ",a[i]);

}

}

4. #include<stdio.h>

void rotate\_array(int a[], int N, int k, int d);

int main()

{

int k=5,a[5],i,N;

int d;

printf("enter values of array: \n");

for(i=0;i<k;i++)

{

scanf("%d",&a[i]);

}

rotate\_array( a, N,k,d);

}

void rotate\_array(int a[], int N, int k, int d)

{

int i,b[10];

printf("enter the position of array from where you want to rotate: \n");

scanf("%d",&N);

printf("enter 1 for left 2 for right: \n");

scanf("%d",&d);

if(d==1)

{

for(i=0;i<N;i++)

{

b[i]=a[i];

}

for(i=N;i<k;i++)

{

a[i-N]=a[i];

}

for(i=N+1;i<k;i++)

{

a[i]=b[i-(N+1)];

}

printf("The rotated array is: ");

for(i=0;i<k;i++)

{

printf("\n%d",a[i]);

}

}

else

{

for(i=N+1;i<k;i++)

{

b[i-(N+1)]=a[i];

}

for(i=N;i>=0;i--)

{

a[i+N]=a[i];

}

for(i=0;i<N;i++)

{

a[i]=b[i];

}

printf("The rotated array is: ");

for(i=0;i<k;i++)

{

printf("\n%d",a[i]);

}

}

}

5. #include <stdio.h>

int first(int a[],int n);

int main()

{

int n;

printf("Enter the size of array :");

scanf("%d",&n);

int a[n];

printf("First occurrence of adjacent duplicate value in the array is : %d",first(a,n));

return 0;

}

int first(int a[],int n)

{

int i;

printf("Enter the array elements :");

for(i=0;i<n;i++)

scanf("%d",&a[i]);

for(i=0;i<n;i++)

{

if(a[i]==a[i+1])

return a[i];

}

}

6. #include <stdio.h>

void display(int a[],int n);

int main()

{

int n,i;

printf("Enter the size of array :");

scanf("%d",&n);

int a[n];

printf("Enter the array elements :");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

display(a,n);

}

void display(int a[],int n)

{

int i;

printf("the reversed array is: ");

for(i=n-1;i>=0;i--)

{

printf("\n%d",a[i]);

}

return 0;

}

7. #include <stdio.h>

int main()

{

int arr[10], i, j, Size, Count = 0;

printf("\n Please Enter Number of elements in an array : ");

scanf("%d", &Size);

printf("\n Please Enter %d elements of an Array : ", Size);

for (i = 0; i < Size; i++)

{

scanf("%d", &arr[i]);

}

for (i = 0; i < Size; i++)

{

for(j = i + 1; j < Size; j++)

{

if(arr[i] == arr[j])

{

Count++;

break;

}

}

}

printf("\n Total Number of Duplicate Elements in this Array = %d ", Count);

return 0;

}

8. #include <stdio.h>

void unique(int a[], int n);

int main()

{

int i,n;

printf("enter the size of array: ");

scanf("%d",&n);

int a[n];

printf("enter array elements: ");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

unique(a, n);

}

void unique(int a[], int n)

{

int i,j,k,count;

for(i=0;i<n;i++)

{

count=0;

for(j=i+1;j<n;j++)

{

if(a[i]==a[j])

{

count++;

}

}

for(k=i-1;k>0;k--)

{

if(a[i]==a[k])

count++;

}

if(count==0)

printf("%d",a[i]);

}

}

9. #include <stdio.h>

void mergesort(int a[], int b[],int n);

int main()

{

int n, i;

printf("enter the size of array: ");

scanf("%d", &n);

int a[n], b[n];

printf("enter the first array elements: ");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

printf("enter the second array elements: ");

for(i=0;i<n;i++)

{

scanf("%d",&b[i]);

}

mergesort(a,b,n);

}

void mergesort(int a[], int b[],int n)

{

int c[2\*n-1],i,j=0,temp=0;

for(i=0;i<n;i++)

{

c[i]= a[i];

}

for(i=n;i<2\*n;i++)

{

{

if(j<n)

c[i]=b[j];

j++;

}

}

printf("the merged array is...");

for(i=0;i<2\*n;i++)

{

printf(" %d",c[i]);

}

for(i=0;i<2\*n;i++)

{

for(int j=i+1;j<2\*n;j++)

{

if(c[i]<c[j])

{

temp=c[i];

c[i]=c[j];

c[j]=temp;

}

}

}

printf("\n######the sorted array is######");

for(i=0;i<2\*n;i++)

{

printf("\n%d",c[i]);

}

}

10. #include <stdio.h>

void frequency(int a[], int n);

int main()

{

int i,n;

printf("enter the size of array: ");

scanf("%d",&n);

int a[n];

printf("enter the elements of array: ");

for(i=0;i<n;i++)

{

scanf("%d",&a[i]);

}

frequency(a,n);

}

void frequency(int a[], int n)

{

int i,j,k,l=0,N[n],f[n];

for(i=0;i<n;i++)

{

int count=0;

for(j=0;j<n;j++)

{

if(a[i]==a[j])

count++;

}

int flag=0;

for(k=i-1;k>=0;k--)

{

if(a[i]==a[k])

flag++;

}

if(flag==0)

{

N[l]=a[i];

f[l]=count;

l++;

}

}

printf("################################\n");

for(i=0;i<l;i++)

{

printf("%d %d\n",N[i],f[i]);

}

}