Array and Functions in C Language

1. Write a function to find the greatest number from the given array of any size. (TSRS)

#include<stdio.h>

int greater(int arr[],int n)

{

int greater=arr[0];

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

{

if(greater<arr[i])

greater=arr[i];

}

return greater;

}

int main()

{

int arr[]={22,33,234,1,232,23,22233,1222},n;

n=sizeof(arr)/sizeof(arr[0]);

printf("%d is the greatest ",greater(arr,n));

return 0;

}

2. Write a function to find the smallest number from the given array of any size. (TSRS)

#include<stdio.h>

int smallest(int arr[],int n)

{

int small=arr[0];

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

if(small>arr[i])

small=arr[i];

return small;

}

int main()

{

int arr[]={1,2,3,4,5,-5,66,77},n;

n=sizeof(arr)/sizeof(int);

printf("%d is the smallest",smallest(arr,n));

return 0;

}

3. Write a function to sort an array of any size. (TSRS)

#include<stdio.h>

void sort(int arr[],int n)

{

    for(int i=0;i<n;i++)

    {

        int index=i,min=arr[i];

        for(int j=i;j<n;j++)

        {

            if(arr[j]<min)

            {

                min=arr[j];

                index=j;

            }

        }

     int temp=arr[i];

     arr[i]=min;

     arr[index]=temp;

    }

    for(int i=0;i<n;i++)

    {

        printf("%d ",arr[i]);

    }

}

int main()

{

    int arr[100],n;

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

    scanf("%d",&n);

    for(int i=0;i<n;i++)

    scanf("%d",&arr[i]);

    sort(arr,n);

}

4. Write a function to rotate an array by n position in d direction. The d is an indicative

value for left or right. (For example, if array of size 5 is [32, 29, 40, 12, 70]; n is 2 and

d is left, then the resulting array after left rotation 2 times is [40, 12, 70, 32, 29] )

#include<stdio.h>

void left(int arr[],int n, int shifting)

{

for(int i=0;i<shifting;i++)

{

int temp;

temp=arr[0];

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

{

arr[j]=arr[j+1];

if(j==n-1)

arr[n-1]=temp;

}

}

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

{

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

}

}

void right(int arr[],int n, int shifting)

{

for(int i=0;i<shifting;i++)

{

int temp;

temp=arr[n-1];

for(int j=n-1;j>=0;j--)

{

arr[j]=arr[j-1];

if(j==0)

arr[0]=temp;

}

}

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

{

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

}

}

int main()

{

int arr[100],n,shifting,s;

printf("enter the number of element in array of array: ");

scanf("%d",&n);

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

{

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

}

printf("enter the value of left or right shift: ");

scanf("%d",&shifting);

printf("press 1 for left: \npress 2 for right: ");

scanf("%d",&s);

switch (s)

{

case 1:

left(arr,n,shifting);

break;

case 2:

right(arr,n,shifting);

break;

default:

printf("wrong choice");

break;

}

}

5. Write a function to find the first occurrence of adjacent duplicate values in the array.

Function has to return the value of the element.

#include<stdio.h>

#include<stdlib.h>

int duplicat(int arr[],int n)

{

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

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

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

{

printf("%d is duplicate value",arr[i]);

exit(0);

}

}

int main()

{

int arr[100],n;

printf("enter the number of element in array: ");

scanf("%d",&n);

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

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

duplicat(arr,n);

return 0;

}

6. Write a function in C to read n number of values in an array and display it in reverse

order.

#include<stdio.h>

void reverse(int arr[],int n){

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

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

}

int main()

{

int arr[100],n;

printf("enter the number of element in array: ");

scanf("%d",&n);

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

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

reverse(arr,n);

return 0;

}

7. Write a function in C to count a total number of duplicate elements in an array.

#include<stdio.h>

void duplicate(int arr[],int n)

{

int count=0;

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

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

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

{

count++;

}

printf("%d is total number of repeated number",count);

}

int main()

{

int arr[100],n;

printf("enter the number of element: ");

scanf("%d",&n);

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

{

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

}

duplicate(arr,n);

}

8. Write a function in C to print all unique elements in an array.

#include<stdio.h>

void duplicate(int arr[],int n)

{

    int count=0;

     for(int i=0;i<n;i++)

    for(int j=i+1;j<n;j++)

    if(arr[i]==arr[j])

    {

        count++;

    }

    printf("%d is total number of unique number",n-count);

}

int main()

{

    int arr[100],n;

    printf("enter the number of element: ");

    scanf("%d",&n);

    for(int i=0;i<n;i++)

    {

        scanf("%d",&arr[i]);

    }

    duplicate(arr,n);

}

9. Write a function in C to merge two arrays of the same size sorted in descending

order.

#include<stdio.h>

void shorting(int arr[],int n)

{

int max,index,temp;

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

{

max=arr[i];

index=i;

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

{

if(max<arr[j])

{

max=arr[j];index=j;

}

}

temp=arr[i];

arr[i]=max;

arr[index]=temp;

}

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

{

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

}

}

void merging(int arr1[],int arr2[],int n)

{

int arr[100]={0},n1=0;

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

{

if(i<n)

{

arr[i]=arr1[i];

}

else

{

arr[i]=arr2[n1];

n1++;

}

}

shorting(arr,2\*n);

}

int main()

{

int arr1[50]={0},arr2[50]={0},n;

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

scanf("%d",&n);

printf("\nArray1");

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

{

scanf("%d",&arr1[i]);

}

printf("\nArray2");

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

{

scanf("%d",&arr2[i]);

}

merging(arr1,arr2,n);

return 0;

}

10. Write a function in C to count the frequency of each element of an array

#include <stdio.h>

void frequency1(int arr[], int n)

{

int arr1[40],plus=0;

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

{

int count=1,present=0;

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

{

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

{

count++;

}

}

for(int k=0;k<=plus;k++)

{

if(arr1[k]==arr[i])

{

present=1;

break;

}

}

if(!present)

printf("%d appear %d times \n",arr[i],count);

arr1[plus]=arr[i];

plus++;

}

}

int main()

{

int arr[100], n;

printf("enter the number of element in array");

scanf("%d", &n);

printf("array1\n");

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

{

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

}

frequency1(arr, n);

return 0;

}