Name- Chhavi Goyal

Section- 1(A) AIML

University RollNo.-2215500050

**Array Questions**

Ques.1 Write a C program to read and print elements of array.

Sol.

#include <stdio.h>

int main()

{

int arr[5]={1,4,2,6,9};

for(int i=0;i<=4;i++){

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

}

return 0;

}

Ques.2 Write a C program to print all negative elements in an array.

Sol.

#include <stdio.h>

int main()

{

int arr[5]={1,-4,2,-6,9};

for(int i=0;i<=4;i++){

if(arr[i]<0){

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

}

}

return 0;

}

Ques.3 Write a C program to find sum of all array elements.

Sol.

#include <stdio.h>

int main()

{

int sum=0,arr[5]={1,4,2,-6,9};

for(int i=0;i<=4;i++){

sum=sum+arr[i];

}

printf("%d",sum);

return 0;

}

Ques.4 Write a C program to find maximum and minimum element in an array.

Sol.

#include <stdio.h>

int main()

{

int max,arr[5]={1,42,-2,6,90};

max=arr[0];

for(int i=0;i<=5;i++){

if(arr[i]>max){

max=arr[i];

}

}

printf("%d",max);

return 0;

}

Ques.5 Write a C program to find second largest element in an array .

Sol.

#include <stdio.h>

int main()

{

int max1,max2,arr[5]={1,42,-2,6,90};

max1=max2=arr[0];

for(int i=0;i<=5;i++){

if(arr[i] > max1)

{

max2 = max1;

max1 = arr[i];

}

else if(arr[i] > max2 && arr[i] < max1)

{

max2 = arr[i];

}

}

printf("Second largest = %d", max2);

return 0;

}

Ques.6 Write a C program to count total number of even and odd elements in an array.

Sol.

#include <stdio.h>

int main()

{

int i,arr[5]={1,-4,2,-6,9};

int even=0,odd=0;

for(i=0;i<=4;i++){

if(arr[i]%2==0)

even++;

else

odd++;

}

printf("No. of even numbers are %d \n",even);

printf("No. of odd numbers are %d",odd);

return 0;

}

Ques.7 Write a C program to count total number of negative elements in an array.

Sol.

#include <stdio.h>

int main()

{

int i,arr[5]={1,-4,2,-6,9};

int count=0;

for(i=0;i<=4;i++){

if(arr[i]<0)

count++;

}

printf("No. of negative numbers are %d ",count);

return 0;

}

Ques.8 Write a C program to copy all elements from an array to another array.

Sol.

#include <stdio.h>

int main()

{

int i,j,arr1[5]={1,-4,2,-6,9},arr2[5];

for( i=0;i<=4;i++){

arr2[j]=arr1[i];

printf("elements of second array are %d \n",arr2[j]);

}

return 0;

}

Ques.9 Write a C program to insert an element in an array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array:");

scanf("%d",&n);

int a[n],m,i,ele,pos;

printf("enter no of elements in an array:");

scanf("%d",&m);

if(m>=n)

printf("insertion is not possible");

else{

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

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

printf("enter element and its position:");

scanf("%d%d",&ele,&pos);

for(i=m-1;i>=pos;i--)

a[i+1]=a[i];

a[pos]=ele;

m++;

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

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

}

return 0;

}

Ques.10 Write a C program to delete an element from an array at specified position.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array:");

scanf("%d",&n);

int a[n],m,i,pos;

printf("enter no of elements in an array:");

scanf("%d",&m);

if(m==0)

printf("deletion is not possible");

else{

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

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

printf("enter position:");

scanf("%d",&pos);

for(i=pos;i<m-1;i++)

a[i]=a[i+1];

m--;

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

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

}

return 0;

}

Ques.11 Write a C program to count frequency of each element in an array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],b[100]={0},i,max;

printf("enter elements in an array \n");

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

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

max=a[0];

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

if(a[i]>max)

max=a[i];

}

max++;

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

b[a[i]]++;

for(i=0;i<max;i++){

if(b[i]>0)

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

}

return 0;

}

Ques.12 Write a C program to print the unique elements in the array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],b[100]={0},i,max;

printf("enter elements in an array \n");

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

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

max=a[0];

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

if(a[i]>max)

max=a[i];

}

max++;

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

b[a[i]]++;

for(i=0;i<max;i++){

if(b[i]==1)

printf("%d ",i);

}

return 0;

}

Ques.13 Write a C program to count total number of duplicate elements in an array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],b[100]={0},i,max,count;

printf("enter elements in an array \n");

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

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

max=a[0];

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

if(a[i]>max)

max=a[i];

}

max++;

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

b[a[i]]++;

for(i=0;i<max;i++){

if(b[i]>1)

count++;

}

printf("%d",count);

return 0;

}

Ques.14 Write a C program to delete all duplicate elements from an array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],b[100]={0},i,max;

printf("enter elements in an array \n");

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

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

max=a[0];

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

if(a[i]>max)

max=a[i];

}

max++;

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

b[a[i]]++;

for(i=0;i<max;i++){

if(b[i]==1)

printf("%d",i);

}

return 0;

}

Ques.16 Write a C program to find reverse of an array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],b[n],i;

printf("enter elements in an array \n");

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

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

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

b[i]=a[n-i-1];

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

}

return 0;

}

Ques.17 Write a C program to put even and odd elements of array in two separate array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],b[n],c[n],i,j=0,k=0;

printf("enter elements in an array \n");

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

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

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

if(a[i]%2==0){

b[j]=a[i];

j++;

}

else{

c[k]=a[i];

k++;

}

}

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

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

printf("\n");

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

printf("%d ",b[i]);//even

return 0;

}

Ques.18 Write a C program to search an element in an array.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],i,flag;

printf("enter elements in an array \n");

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

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

int k;

printf("enter the element to be searched");

scanf("%d",&k);

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

if(a[i]==k)

flag=1;

}

if(flag==1){

printf("%d is found",k);

}

else{

printf("not found");

}

return 0;

}

Ques.19 Write a C program to sort array elements in ascending or descending order.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],i,j;

printf("enter elements in an array \n");

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

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

for(i=0;i<n-1;i++){

for(j=0;j<n-i-1;j++){

if(a[j]>a[j+1]){

int t=a[j];

a[j]=a[j+1];

a[j+1]=t;

}

}

}

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

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

return 0;

}

Ques.20 Write a C program to sort even and odd elements of array separately.

Sol.

#include <stdio.h>

int main()

{

int n;

printf("enter size of array \n");

scanf("%d",&n);

int a[n],i,j;

printf("enter elements in an array \n");

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

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

for(i=0;i<n-1;i++){

for(j=0;j<n-i-1;j++){

if(a[j]%2==0){

int t=a[j];

a[j]=a[j+1];

a[j+1]=t;

}

}

}

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

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

return 0;

}