**Assignment - 15**

**A Job Ready Bootcamp in C++, DSA and IOT**

**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[]);

int main()

{

int a[10];

printf("Greatest element in the array is %d",greater(a));

}

int greater(int b[])

{

int i,max=-1;

printf("Enter array elements");

for(i=0;i<10;i++)

{

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

}

for(i=0;i<10;i++)

{

if(max<b[i])

max=b[i];

}

return max;

}

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

#include<stdio.h>

int smaller(int[]);

int main()

{

int a[10];

printf("smaller element in the array is %d",smaller(a));

}

int smaller(int b[])

{

int i,min=9999;

printf("Enter array elements");

for(i=0;i<10;i++)

{

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

}

for(i=0;i<10;i++)

{

if(min>b[i])

min=b[i];

}

return min;

}

1. Write a function to sort an array of any size. (TSRN)

#include<stdio.h>

void shorte(int[]);

int main()

{

int a[10];

shorte(a);

}

void shorte(int b[])

{

int i,j;

printf("Enter array elements");

for(i=0;i<10;i++)

{

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

}

for(i=0;i<9;i++)

{

for(j=i+1;j<10;j++)

{

if(b[i]>b[j]){

int temp=0;

temp=b[i];

b[i]=b[j];

b[j]=temp;

}

}

}

printf("Shortest elemsnt is=>");

for(i=0;i<10;i++)

{

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

}

}

1. 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>

int main()

{

int a[10],i,j,temp;

int n,t;

printf("Enter value of n");

scanf("%d",&n);

printf("\nEnter turn value");

scanf("%d",&t);

printf("Enter array element");

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

{

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

}

for(j=1;j<=t;j++)

{

temp=a[0];

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

{

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

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

}

a[n-1]=temp;

// printf("%d",temp);

// printf("\n");

}

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

{

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

}

return 0;

}

1. 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>

int duplicate(int[]);

int main()

{

int a[10];

printf("%d is first adjacent value in array",duplicate(a));

}

int duplicate(int x[])

{

int i;

printf("Enter array elements");

for(i=0;i<8;i++)

{

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

}

for(i=0;i<8;i++)

{

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

{

return x[i];

}

}

}

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

#include<stdio.h>

int main()

{

int n,i;

printf("Enter size of array");

scanf("%d",&n);

int a[n];

printf("Enter %d array elements",n);

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

{

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

}

printf("Array elements in revers order=>");

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

{

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

}

return 0;

}

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

#include<stdio.h>

int duplicate(int[]);

int main()

{

int a[10];

printf("Total number of duplicate element in array is %dac",duplicate(a));

}

int duplicate(int x[])

{

int i,j,count=0;

printf("Enter array elements");

for(i=0;i<10;i++)

{

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

}

for(i=0;i<10;i++)

{

for(j=i+1;j<10;j++)

{

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

{

count++;

}

}

}

return count;

}

1. Write a function in C to print all unique elements in an array.
2. Write a function in C to merge two arrays of the same size sorted in descending order.
3. Write a function in C to count the frequency of each element of an array

#include<stdio.h>

int main()

{

int a[20];

int freq[500]={0},i;

printf("Enter your numbers ");

for(i=0;i<10;i++)

{

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

}

for(i=0;i<10;i++)

{

freq[a[i]]++;

}

for(i=0;i<500;i++)

{

if(freq[i]!=0)

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

}

return 0;

}