**Assignment-15**

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

Ans- #include <stdio.h>

int greatest(int b[],int);

int greatest(int b[],int N)

{

int temp,i,j;

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

{

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

{

if(b[j]<b[j+1])

{

temp=b[j];

b[j]=b[j+1];

b[j+1]=temp;

}

}

}

return (b[0]);

}

int main()

{

int n,a[100],i;

printf("Enter array size: ");

scanf("%d",&n);

printf("Enter array elements:\n");

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

{

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

}

printf("The greatest element in the array is %d",greatest(a,n));

return 0;

}

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

Ans-#include <stdio.h>

int smallest(int b[],int);

int smallest(int b[],int N)

{

int temp,i,j;

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

{

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

{

if(b[j]>b[j+1])

{

temp=b[j];

b[j]=b[j+1];

b[j+1]=temp;

}

}

}

return (b[0]);

}

int main()

{

int n,a[100],i;

printf("Enter array size: ");

scanf("%d",&n);

printf("Enter array elements:\n");

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

{

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

}

printf("The smallest element in the array is %d",smallest(a,n));

return 0;

}

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

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] )

Ans- #include <stdio.h>

void rev(int b[],int,int,int);

void rev(int b[],int N,int x,int y)

{

int temp,i,j,k;

if(y==1)

{

k=0;

for(i=1;i<=x;i++)

{

temp=b[k];

for(j=0;j<=(N-2);j++)

{

b[j]=b[j+1];

}

b[j]=temp;

}

}

if(y==0)

{

k=N-1;

for(i=1;i<=((N-1)-x);i++)

{

temp=b[k];

for(j=N-1;j>=1;j--)

{

b[j]=b[j-1];

}

b[j]=temp;

}

}

}

int main()

{

int n,a[100],i,p,q;

printf("Enter array size: ");

scanf("%d",&n);

printf("Enter array elements:\n");

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

{

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

}

printf("enter possition and direction(left=1,right=0): ");

scanf("%d%d",&p,&q);

rev(a,n,p,q);

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

{

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

}

return 0;

}

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.

Ans- #include <stdio.h>

int duplicate(int b[],int N)

{

int i,j,count=0;

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

{

count=0;

for(j=0;j<=N-1;j++)

{

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

count++;

}

if(count>1)

return (b[i]);

}

}

int main()

{

int i,n,a[100];

printf("enter the array size: ");

scanf("%d",&n);

printf("enter the elements:\n");

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

{

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

}

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

return 0;

}

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

Ans- #include <stdio.h>

void rev(int b[],int N)

{

int i,j,temp;

for(i=0,j=N-1;i<=j;i++,j--)

{

temp=b[j];

b[j]=b[i];

b[i]=temp;

}

}

int main()

{

int i,n,a[100];

printf("enter the array size: ");

scanf("%d",&n);

printf("enter the elements:\n");

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

{

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

}

rev(a,n);

printf("print the elements in reverse order:\n");

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

{

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

}

return 0;

}

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

Ans- #include <stdio.h>

int duplicate(int b[],int N)

{

int i,j,count=0,k=0,f;

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

{

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

{

if(b[f]==b[i])

break;

}

if(f==i)

{

count=0;

for(j=i;j<=N-1;j++)

{

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

count++;

}

if(count>1)

k++;

}

}

return k;

}

int main()

{

int i,n,a[100];

printf("enter the array size: ");

scanf("%d",&n);

printf("enter the elements:\n");

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

{

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

}

printf("count a total number of duplicate elements in an array is %d",duplicate(a,n));

return 0;

}

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

Ans- #include <stdio.h>

void duplicate(int b[],int N)

{

int i,j,count=0,k=0,f;

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

{

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

{

if(b[f]==b[i])

break;

}

if(f==i)

{

count=0;

for(j=i;j<=N-1;j++)

{

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

count++;

}

if(count==1)

printf("\n%d is unique element in the array",b[i]);

}

}

}

int main()

{

int i,n,a[100];

printf("enter the array size: ");

scanf("%d",&n);

printf("enter the elements:\n");

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

{

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

}

duplicate(a,n);

return 0;

}

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

Ans- #include <stdio.h>

void merge(int x[],int y[],int N)

{

int i,j,temp;

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

{

x[5+i]=y[i];

}

for(i=0;i<=2\*N-1;i++)

{

for(j=0;j<2\*N-i-1;j++)

{

if(x[j]<x[j+1])

{

temp=x[j];

x[j]=x[j+1];

x[j+1]=temp;

}

}

}

}

int main()

{

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

printf("enter the array size: ");

scanf("%d",&n);

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

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

{

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

}

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

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

{

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

}

merge(a,b,n);

printf("descending order:\n");

for(i=0;i<=2\*n-1;i++)

{

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

}

return 0;

}

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

Ans- #include <stdio.h>

void duplicate(int b[],int N)

{

int i,j,count=0,k=0,f;

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

{

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

{

if(b[f]==b[i])

break;

}

if(f==i)

{

count=0;

for(j=i;j<=N-1;j++)

{

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

count++;

}

if(count>=1)

printf("\nfequency of %d is %d",b[i],count);

}

}

}

int main()

{

int i,n,a[100];

printf("enter the array size: ");

scanf("%d",&n);

printf("enter the elements:\n");

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

{

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

}

duplicate(a,n);

return 0;

}