Assignment=15

Array with Function in C.

//1. write a function to find greatest number among numbers which is Entered by the user.(TSRS)

```
#include <stdio.h>
int find(int [],int);
int main()
{
        int x[50],i,n;
        while(1)
        {
        printf("\nEnter The Size Of An Array :");
        scanf("%d",&n);
        printf("\nEnter Array Elements :");
        for(i=0;i<n;i++)
        {
                scanf("%d",&x[i]);
        }
        printf("\n Greatest Number is %d",find(x,n));
}
        return 0;
}
int find(int a[],int x)
{
        int i,sum;
        sum=a[0];
        for(i=0;i<x;i++)
        {
          if(a[i]>sum)
          sum=a[i];
   }
   return sum;
}
```

//2. write a function to find Smallest number among numbers which is Entered by the user.(TSRS)

```
#include <stdio.h>
int find(int [],int);
```

```
int main()
{
        int x[50],i,n;
        while(1)
        {
        printf("\nEnter The Size Of An Array :");
        scanf("%d",&n);
        printf("\nEnter Array Elements :");
        for(i=0;i<n;i++)
        {
                scanf("%d",&x[i]);
        }
        printf("\n Smallest Number is %d",find(x,n));
}
        return 0;
}
int find(int a[],int x)
{
        int i,sum;
        sum=a[0];
        for(i=0;i<x;i++)
        {
          if(a[i]<sum)
          sum=a[i];
   }
   return sum;
}
```

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

```
#include <stdio.h>
int sort(int [],int);
int main()
{
        int x[100],n,i;
        printf("\nEnter Array Size :");
        scanf("%d",&n);
        printf("\nEnter array Elements :");
        for(i=0;i<n;i++)
        scanf("%d",&x[i]);
         sort(x,n);
         printf("\nAfter sorting The Elements are :");
         for(i=0;i<n;i++)
```

```
         printf("\n %d",x[i]);
        return 0;
}
int sort(int a[],int x)
{
        int temp,i,j;
        for(i=0;i<x;i++)
        {
                for(j=0;j<x-1;j++)
                {
                        if(a[j]>a[j+1])
                        {
                                temp=a[j];
                                a[j]=a[j+1];
                                a[j+1]=temp;
                        }
                }
        }
}
```

/*4. write a program to Rotate an array by n position in d direction .the D is an indicative value for left or right
for eg if array is of size 5 is[32,29,40,12,70] n is 2 and d is left then the resulting array after rotation two time is [40,12,70,32,29] */

```
#include <stdio.h>
#include <stdlib.h>
int position(int [],int,int,char);
int main()
{
        int x[10],n,pos,k=0;char dir;
        printf("\nEnter the size of an Array");
        scanf("%d",&n);
        printf("\nEnter The Position Number :");
        scanf("%d",&pos);
        fflush(stdin);
        printf("\nEnter The Position Like R and r for Right and l and L for Left :");
        scanf("%c",&dir);
        printf("\nEnter the Elements :");
        position(x,n,pos,dir);
        return 0;
}
int position(int x[],int n,int pos,char dir)
```

```
{
  int num,i,temp;static j=0;
        for(i=0;i<n;i++)
        scanf("%d",&x[i]);
        num=pos;
        if(dir=='l' || dir=='L')
        {
                for(i=pos;i>0;i--)
                {
                  temp=x[n-num];
                  x[n-num]=x[j];
                  x[j]=temp;
                  j++;
                  num--;
                }
            for(i=pos;i>0;i--)
            {
                temp=x[i];
            x[i]=x[i-1];
                x[i-1]=temp;
                 }
        }
        else if(dir=='r'||dir=='R')
        {
                for(i=n;i>pos+1;i--)
                {
                 temp=x[n-num];
                  x[n-num]=x[j];
                  x[j]=temp;
                  j++;
                  num--;
                }
            for(i=pos;i<n-1;i++)
           {
                temp=x[i];
              x[i]=x[i+1];
                x[i+1]=temp;
      }
   }
        printf("\nAfter position value:");
        for(i=0;i<n;i++)
        printf("\n %d",x[i]);
}
```

//5. write a program to count a duplicate number in the array.

```
#include <stdio.h>
int dupli(int [],int);
int main()
{
	int x[20],i,n,j;
	printf("\nEnter The Size of an Array :");
	scanf("%d",&n);
	printf("\nEnter the Elements :");
	for(i=0;i<n;i++)
	{
		scanf("%d",&x[i]);
	}
	printf("\nDuplicate value in the Array is : %d",dupli(x,n));
	return 0;
}
int dupli(int a[],int k)
{
	int count=0,i,j;
	for(i=0;i<k;i++)
	{
		for(j=i;j<k-1;j++)
		{
			if(a[i]==a[j+1])
			{
				count++;
				break;
			}
		}
	}
	return count;
}
```

//6. write a program to count a duplicate number in the array.

```
#include <stdio.h>
int rev(int [],int);
int main()
{
	int x[100],i,n;
	printf("\nEnter The Size of an Array :");
	scanf("%d",&n);
```

```
        printf("\nThe Elements are:");
        for(i=0;i<n;i++)
        {
                x[i]=i*10;
        }
                for(i=0;i<n;i++)
                printf("\n%d",x[i]);
        rev(x,n);
        return 0;
}
int rev(int a[],int k)
{
        int i;
        printf("\n\nAfter Reversing The Array Elements Are:");
        for(i=k-1;i>=0;i--)
        {
          printf("\n%d",a[i]);
   }
}
```

//7. write a program to find a unique element in the array.

```
#include <stdio.h>
int unique(int [],int);
int main()
{
        int x[20],i,n,j;
        printf("\nEnter The Size of an Array :");
        scanf("%d",&n);
        printf("\nEnter the Elements :");
        for(i=0;i<n;i++)
        {
                scanf("%d",&x[i]);
        }
        unique(x,n);
        return 0;
}
int unique(int x[],int k)
{
        int i,j,t;
        printf("\nUnique Elements in The Array are :");
        for(i=0;i<k;)
        {
```

```
                t=0;
                for(j=t;j<k-1;j++)
                {
                        if(j==i)
                        t++;
                        if(x[i]==x[j+t])
                        {
            break;
                        }
                }
                if(j==k-1)
                {
                printf("\n%d ",x[i]);
                i++;
           }
                else
                i++;
        }
}
```

8. Write a function to merge two arrays and display in reverse order.

```
#include <stdio.h>
int merge(int [],int[],int[],int);
int main()
 {
        int x[40],y[40],z[100],n,a,i,temp,j;
        printf("\nEnter the Size of an array:");
        scanf("%d",&n);
        merge(x,y,z,n);
        return 0;
 }
int merge(int a[],int b[],int c[],int k)
 {
        int i,j,temp;
        for(i=0;i<k;i++)
        {
           a[i]=10*i+2;
           c[i]=a[i];
        }
         for(i=k;i<2*k;i++)
        {
                b[i]=10*i+1;
                c[i]=b[i];
```

```
        }
    for(i=0;i<2*k;i++)
    {
        printf("\n%d",c[i]);
        }
        printf("\nAfter Sorting The Elements Are :");
        for(i=0;i<2*k;i++)
        {
                for(j=i;j<2*k-1;j++)
                {
                        if(c[i] < c[j+1])
                        {
                                temp=c[j+1];
                                c[j+1]=c[i];
                                c[i]=temp;
                        }
                }
        }
        for(i=0;i<2*k;i++)
        printf("\n%d",c[i]);
}
```

//9. write a function to find first accurance of adjacent duplicate value in the array.function has to return the value of an element

```
#include <stdio.h>
int dupli(int [],int);
int main()
{
        int x[20],n,i;
        printf("\nenter an array size :");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        scanf("%d",&x[i]);
        printf("\n adjacent duplicate value is %d",dupli(x,n));
}
int dupli(int a[],int s)
{
        int i,k=0;
        for(i=0;i<s-1;i++)
        {
                if(a[i]==a[i+1])
                {
```

```
                return a[i];
            }
    }
    if(i==s-1)
    return 0;
}
```

//10. write a function to count the frequency of each element in the array

```
#include <stdio.h>
int main()
{
        int x[20],n,count=1,i,j;
        printf("\nEnter Size Of An Array :");
        scanf("%d",&n);
        for(i=0;i<n;i++)
        scanf("%d",&x[i]);
        for(i=0;i<n;i++)
        {
                count=1;
                for(j=i;j<n-1;j++)
                {
                        if(x[i]==x[j+1])
                        {
                                count++;
                                x[j+1]=0;
                        }
                }
                if(x[i]==0)
                {

                }
                else
                printf("\n%d = %d",x[i],count);
        }
}
```