Assignment - 15

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

```
#include <stdio.h>

int largest(int arr[], int n)
{
	int i;
	int max = arr[0];
	for (i = 1; i < n; i++)
		if (arr[i] > max)
			max = arr[i];

	return max;
}

int main()
{
	int arr[] = {10,20,30,50,40,90,120,60};
	int n = sizeof(arr)/sizeof(arr[0]);
	printf("Largest number in given array is %d", largest(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 i;
	int max = arr[0];
	for (i = 1; i < n; i++)
		if (arr[i] < max)
```

```
                max = arr[i];

        return max;
}

int main()
{
        int arr[] = {40,30,20,50,60,10,90,80};
        int n = sizeof(arr)/sizeof(arr[0]);
        printf("Smallest number in given array is %d", Smallest(arr, n));
        return 0;
}
```

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

```
        #include <stdio.h>

int main()
{
   int a[100],i,n,j,temp;

   printf("Enter size of the  array : ");
   scanf("%d", &n);
   printf("Enter elements in array : ");
   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])
```

```
        {
                temp=a[j];
                a[j]=a[j+1];
                a[j+1]=temp;
                  }

      }

   }
   printf("\narray elements in ascending order:\n ");

   for(i=0; i<n; i++)
   {
     printf("%d ",a[i]);
   }

 }

#include<stdio.h>

void Rotate(int arr[], int d, int n)
{
        int temp[n];

        int k = 0;
        for (int i = d; i < n; i++)
   {
                temp[k] = arr[i];
                k++;
        }
        for (int i = 0; i < d; i++)
        {
                temp[k] = arr[i];
                k++;
        }
        for (int i = 0; i < n; i++) {
                arr[i] = temp[i];
```

```
        }
}

void PrintArray(int arr[], int n)
{
        for (int i = 0; i < n; i++)
        {
                printf("%d ",arr[i]);
        }
}

int main()
{
        int arr[] = { 32,29,40,12,70 };
        int N = sizeof(arr) / sizeof(arr[0]);
        int d = 2;

        Rotate(arr, d, N);
        PrintArray(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 a[100], int n);

int main()
{
 int a[100], i, n;
 printf("Enter size of array:\n");
 scanf("%d", &n);
 printf("Enter %d elements ",n);
 for(i=0;i< n;i++)
```

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

 reverse(a,n);

 printf("Reversed array is:\n");
 for(i=0;i< n;i++)
 {
  printf("%d\t", a[i]);
 }
 return 0;
}

void reverse(int a[10], int n)
{
 int i, temp;
 for(i=0;i< n/2;i++)
 {
  temp = a[i];
  a[i] = a[n-1-i];
  a[n-1-i] = temp;
 }
}
```

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

```
#include <stdio.h>

int count(int a[],int n)
{
    int i,c=0,j;
    for(i=0; i<n; i++)
    {
        if(a[i]!=-1)
                {
                   for(j=i+1; j<n; j++)
```

```
            {
             if(a[i]==a[j])
              {
                                c++;
                                a[j]=-1;
                        }
                  }
                     }

    }
    return c;
 }

int main()
{
    int a[100],b[100],i,n,c;

    printf("Enter size of the array : ");
    scanf("%d", &n);

    printf("Enter elements in array : ");
    for(i=0; i<n; i++)
    {
        scanf("%d",&a[i]);
    }

    c=count(a,n);

          printf("duplicate numbers in the  array: %d",c);

          return 0;
}
```

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

```
                #include <stdio.h>
```

```
void count(int a[],int b[],int n)
{
    int i,c,j;
    for(i=0; i<n; i++)
    {
        c=1;
        if(a[i]!=-1)
                {
                    for(j=i+1; j<n; j++)

           {
            if(a[i]==a[j])
             {
                                c++;
                                a[j]=-1;
                        }
               }
               b[i]=c;
                 }
   }
 }

 int print(int a[],int b[],int n)
{
   int i;

         printf("unique numbers in the  array :\n");

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

       if(a[i]!=-1)
       {
         if(b[i]==1)
         {

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

```
                }
            }
    }

 }
int main()
{
    int a[100],b[100],i,n;

    printf("Enter size of the array : ");
    scanf("%d", &n);

    printf("Enter elements in array : ");
    for(i=0; i<n; i++)
    {
        scanf("%d",&a[i]);
    }

    count(a,b,n);

         print(a,b,n);

         return 0;
}
```

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

```
                #include <stdio.h>

void count(int a[],int b[],int n)
{
    int i,c,j;
    for(i=0; i<n; i++)
    {
        c=1;
        if(a[i]!=-1)
```

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

          {
           if(a[i]==a[j])
            {
                                c++;
                                a[j]=-1;
                        }
              }
              b[i]=c;
                }
   }

}

 int print(int a[],int b[],int n)
{
   int i;
   for(i=0; i<n; i++)
   {

       if(a[i]!=-1)
       {
         printf("no of %d is %d \n",a[i],b[i]);

                }

   }

 }
int main()
{
   int a[100],b[100],i,n;

   printf("Enter size of the array : ");
   scanf("%d", &n);
```

```
    printf("Enter elements in array : ");
    for(i=0; i<n; i++)
    {
       scanf("%d",&a[i]);
    }

    count(a,b,n);

         print(a,b,n);

         return 0;
}
```