**NAME – ABHIRAJ YOGESH SRIVASTAVA**

**ROLL NO. – 1906137**

**SUBJECT NAME – DESIGN AND ANALYSIS OF ALGORITHMS LAB**

**SUBJECT CODE – CSL4403**

**DATE – 4TH JAN, 2021**

**BRANCH – CSE 2**

**ASSIGNMENT-1**

**Q1. Implementation of finding Max and Min using divide and conquer technique?**

**Source Code in C Language:**

#include<stdio.h>

struct pair

{

int min;

int max;

};

struct pair MaxMin(int arr[], int i, int j)

{

struct pair minmax,mml,mmr;

int mid;

if(i==j)

{

minmax.max=arr[i];

minmax.min=arr[i];

return minmax;

}

else if(i==(j-1))

{

if (arr[i]<arr[j])

{

minmax.max=arr[j];

minmax.min=arr[i];

}

else

{

minmax.max=arr[i];

minmax.min=arr[j];

}

return minmax;

}

else

{

mid=(i+j)/2;

mml=MaxMin(arr,i, mid);

mmr=MaxMin(arr,mid+1,j);

if (mml.min<mmr.min)

minmax.min=mml.min;

else

minmax.min=mmr.min;

if (mml.max>mmr.max)

minmax.max=mml.max;

else

minmax.max=mmr.max;

return minmax;

}

}

int main()

{

int n;

printf("Enter number of elements in the array.\n");

scanf("%d",&n);

int arr[n];

printf("Enter the array elements.\n");

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

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

struct pair ans=MaxMin(arr,0,n-1);

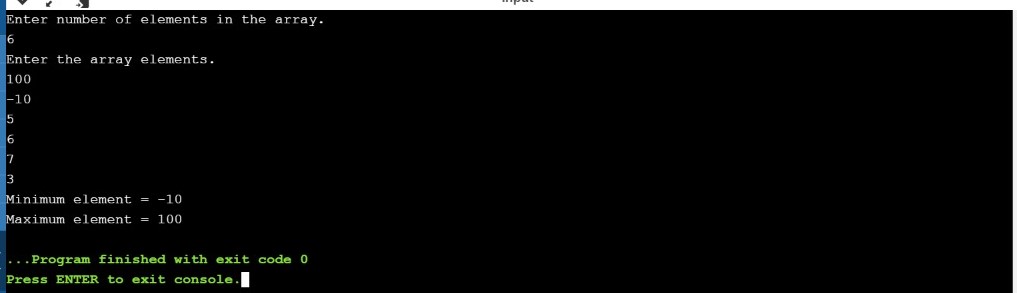
printf("Minimum element=%d\n",ans.min);

printf("nMaximum element is %d",ans.max);

getchar();

}

**Output Screenshots:**

****