Experiment No. 3

Aim: Implement Minimum and Maximum Problem using Divide & Conquer Approach

Program -:

```
#include<stdio.h>

int max, min;
int a[100];
void maxmin(int i, int j)
{
int max1, min1, mid;
if(i==j)
{
max = min = a[i];
}
else
{
 if(i == j-1)
{
 if(a[i] <a[j])
 {
 max = a[j];
 min = a[i];
 }
 else
 {
 max = a[i];
 min = a[j];
 }
 }
else
 {
 mid = (i+j)/2;
 maxmin(i, mid);
 max1 = max; min1 = min;
 maxmin(mid+1, j);
 if(max <max1)
 max = max1;
 if(min > min1)
 min = min1;
}
}
}
```

```
int main ()
{
int i, num;

printf ("\nEnter the total number of numbers : ");
scanf ("%d",&num);
printf ("Enter the numbers : \n");
for (i=1;i<=num;i++)
 scanf ("%d",&a[i]);
max = a[0];
min = a[0];
maxmin(1, num);
printf ("Minimum element in an array : %d\n", min);
printf ("Maximum element in an array : %d\n", max);

return 0;
}
```

Output -:

```
Enter the total number of numbers : 5
Enter the numbers :
12
2
36
42
147
Minimum element in an array : 2
Maximum element in an array : 147
```