

**Assignment No: - 6.2**

**Assignment Name: -** Write a program for sorting given array in merge sort.

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//Merge sort
#include<iostream.h>
#include<conio.h>
#include<stdlib.h>
#include<timer.h>
int arr[1000];
void MERGE(int low,int mid,int high)
{
    int i=low,j=mid+1,k=low;
    int brr[1000];
    while(i<=mid && j<=high)
    {
        if(arr[i]<arr[j])
        {
            brr[k]=arr[i];
            i++;
        }
        else
        {
            brr[k]=arr[j];
            j++;
        }
        k++;
    }
    while(i<=mid)
    {
        brr[k]=arr[i];
        i++;
        k++;
    }
    while(j<=high)
    {
        brr[k]=arr[j];
        j++;
        k++;
    }
    for(k=low;k<=high;k++)
    {
        arr[k]=brr[k];
    }
}

void MERGE_SORT(int low,int high)
{
```

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        if(low!=high)
        {
            int mid=(low+high)/2;
            MERGE_SORT(low,mid);
            MERGE_SORT(mid+1,high);
            MERGE(low,mid,high);
        }
    }

void main()
{
    clrscr();
    Timer T;
    int n;
    cout<<"Enter size of an array : ";
    cin>>n;
    for(int i=0;i<n;i++)
    {
        arr[i]=random(1000);
    }
    T.start();
    MERGE_SORT(0,n-1);
    T.stop();
    cout<<"After sorted Elements : "<<endl;
    for(i=0;i<n;i++)
    {
        cout<<arr[i]<<"\t";
    }
    cout<<"\n Exact time of Execution : "<<T.time();
    getch();
}

```