**Assignment No:-**

**Assignment Name**:- **Implementation of program to sort an array in ascending order using Merge sort.**

**Name:- Badhe Rohan Vikas**

**Roll No:- 04**

#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)

{

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();

}