LAB 9- QUICK SORT

Anitej Prasad

1BM19CS194

4-D

```
#include<stdio.h>
#include<time.h>
#define size N

void delay()
{
    for(int i=0; i<10000000;i++)
    {
    }
}

void quicksort(int arr[1000],int f,int l)
{
   int i, j, pivot, temp;

   if(f<l)
   {
```

```
    pivot=f;
    i=f;
    j=l;

    while(i<j)
    {
      while(arr[i]<=arr[pivot]&&i<l)
        i++;
      while(arr[j]>arr[pivot])
        j--;
      if(i<j)
      {
        temp=arr[i];
        arr[i]=arr[j];
        arr[j]=temp;
      }
    }

    temp=arr[pivot];
    arr[pivot]=arr[j];
    arr[j]=temp;
    quicksort(arr,f,j-1);
    quicksort(arr,j+1,l);
delay();
```

```
  }
}

int main(){
  int i, n, arr[1000];
  int rand(void);
       clock_t start,end;
   double Timetaken;

  printf("Enter the number of elements: \n");
  scanf("%d",&n);

  printf("Entering random elements: \n");
  for(i=0;i<n;i++)
    arr[i]=rand() % 2000 + 1;
       printf("unsorted array\n");
       for(i=0;i<n;i++)
              printf("%d ",arr[i]);
              printf("\n\n");
       start=clock();
  quicksort(arr,0,n-1);
  end=clock();

  printf("Order of Sorted elements:\n");
```

```
  for(i=0;i<n;i++)
     printf(" %d",arr[i]);

    Timetaken=((double)(end-start))/CLOCKS_PER_SEC;
   printf("\n time taken = %f seconds", Timetaken);

  return 0;
}
```