**THE UNIVERSITY OF DODOMA**

**COLLEGE OF INFORMATICS AND VIRTUAL EDUCATION**

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**CP 213: DATA STRUCTURE AND ALGORITHM ANALYSIS**

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**REG NO: T/UDOM/2020/00345**

**COURSE: BSc-SE**

**ASSIGNMENT**

01:

#include<iostream>

using namespace std;

void mergesort(int \*,int,int);

void merge(int \*,int,int,int);

int a[7],i;

int main()

{

int a[7]={25,36,34,98,23,53,31};

mergesort(a,0,6);

cout <<" \n Numbers After Sort: \n";

for(i=0; i<7; i++)

cout << a[i] << " ";

return 0;

}

void mergesort(int a[],int i,int j)

{

int mid;

if(i<j)

{

mid=(i+j)/2;

mergesort(a,i,mid);

mergesort(a,mid+1,j);

merge(a,i,mid,j);

}

}

void merge(int a[],int low,int mid ,int high)

{ int b[7];

int i,j,k=low;

i=low;

j=mid+1;

while(i<=mid && j<=high)

{

if(a[i]<=a[j]){

b[k]=a[i];

i++;

}

else{

b[k]=a[j];

j++;

}

k++;

}

while( i<= mid){

b[k]=a[i];

i++;

k++;

}

while( j<=high){

b[k]=a[j];

j++;

k++;}

for(int s=low; s<=high; s++){

a[s]=b[s];

}

}

