





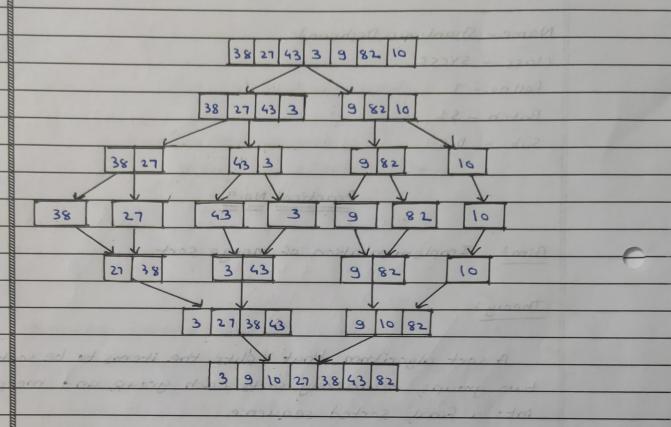
5	Date . / / ZU A group of academic Research Institutions Quality For Excellent							
	Name - Shantany Deshpande							
	Class - Syese of 18 8 E EP PS 8E							
	Roll no 7							
	Batch - S1 01 58 8 E EA FS 88							
	Sub D.5							
	28 27 28 28 28 28 28							
	Practical No.9							
	38 27 43 812 10							
<b>6</b>	Aim! Implementation of Merge sort							
	0) 58 8 84 8 15							
	Theory:							
	S   S   S   S   S   S   S   S   S   S							
	A sort algorithm that splits the items to be sorted into							
	two groups, recursively sorts each group, and merges them							
	into a final, sorted sequence,							
	at the little of the state of t							
	To sort an array of n elements, we perform the following							
	three steps in sequence is morn and mouth							
See.	tropad of porro Indole to as I dead : wollo!)							
70	If nc2. then the array is already corted. Stop now,							
69220	service is the total said the little is already							
	· Otherwise, n>1 and we perform the following							
men suoru								
	1. Sort the left half of the array							
	2. Sort the right half of the array.							
	sould 3. merge the now-sorted left and right halves							
	[[s](dpid+wol)] =: bim							
anamumanana in								



7-Shantanu Deshpande

shpande

Date: / / 20



Algorithma

Algorithm Merge Sort (low, high)

11 allow: high] is a global array to be sorted.

11 small (P) is true if there is only one element

Il to sort. In this case the list is already sorted

if (low chigh) then II If there are more than one element

11. Divide P into subproblems

11 Find where to split the set.

mid := [ (low+high) 12];



story design wastande ?



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	ve the subproblems.
	Merge sort (low, mid);
	Merge sart (mid+1, high):
	(143=13
11 0	Combine the solutions
	Merge Clow, mid highly (H) 31
	of deid of is the for
}	,
	(1+3=: x ([A]) =: [])
3	£
	92/9
Algarithm	Merge (low, mid, high); 109
	}
Il a Clow: h	ight is a global array containing two sorted.
	in a flow: midd and in a Child +1: high I. The goal
Il is to me	erge these two sets into a single set residing
Il in a li	ow: high]. b[] is an auxillary global array.
11 in a Cla	w: high]. b[] is an aunillary global array.
Meng & Ac	betasaslami ared ow and - dopulares
Meng & Ac	
Merce, Ac	betasaslami ared ow and - dopulares
Merce, Ac	betaeraslari aved ow and - acontares  ow; i:=low; j:=mid+1;
h=: d	betaeraslari aved ow and - acontares  ow; i:=low; j:=mid+1;
h=: d	is (a(h) = a(j)) then
h=: d	e (h < mid) and (j < high)) do
h=: d	is (a(h) = a(j)) then

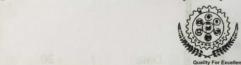


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<b>h</b>	· smaldoradus arts au	4211	
b[i]:=a	Ci]: 1:= i+1;		
3: (doid 14.	him) drag agraM		
i:=i+1)			
3	worderlas and andone	11	
	Maria Clous, a		
For k:=	i to high do		
•		1	
: CiJ :	= a [k]; i:=i+1;		
3			0
else			
for ka	=h to mid do	coul (1 a a 10	
4		THE COPIE	
in out poins too be	1]: = ack]; i = it. 1;	1100/7 - 11	
	to high to ack]:		
	tar and arada agree		
era bolo prolling	ow 21 Fld. Edpid : was	7	
0 0			
conclusion: Thus w	c have implemented	Marca cont	6
	7=:1 : wol=:1 ( wol:		
	(1) 600 (bion 2 d) 51:		
		1	
0721	H (1:1202 [d]0) 21		
	1		
:1+d=:d	6 (1.1) = a (h.1);		
		9	
	9219		

```
Name- Shantanu Deshpande
Class- SYCSE
Roll no.-7
Batch-S1
#include<stdio.h>
int a[20],b[20];
void merge(int low,int mid,int high)
int h=low,j=mid+1, i=low,k;
while( h<=mid &&j<=high)
{
if(a[h] < a[j])
\{b[i]=a[h];h++;
else
\{b[i]=a[j]; j++;
i++;
if (h >mid)
for(k=j; k<=high;k++)
\{b[i] = a[k]; i++;\}
}
else
for(k=h; k<=mid;k++)
\{b[i] = a[k]; i++;\}
for(k=low; k<=high;k++)
a[k] = b[k];
}
void mergesort(int low, int high)
int mid;
if(low < high)
mid = (low+high)/2;
mergesort(low,mid);
mergesort(mid+1, high);
merge(low,mid,high);
}
```

```
void main()
{
int n,i;
printf("Enter The total no of elements");
scanf("%d", &n);
printf("enter Elements:");
for(i=1;i<=n;i++)
scanf( "%d",&a[i]);
mergesort(1,n);
printf("Sorted elements are:\n");
for(i=1;i<=n;i++)
printf( "%d ",a[i]);
}</pre>
```

