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Input

```
5
20
16
63
98
52
```

Output

```
Enter the size of array
5
Enter the elements of array
20  16  63  98  52
After merge sort the elements of array is
16  20  52  63  98
```

MERGE SORTING

Program

```
#include <stdio.h>
int main()
{
    int i, j, n, temp, ele, a[20];
    printf("Enter the size of array\n");
    scanf("%d", &n);
    printf("Enter the elements of array\n");
    for(i=0; i<n; i++)
    {
        scanf("%d", &a[i]);
    }
    for(i=0; i<n; i++)
    {
        j=i;
        while(j>=1 && a[j]<a[j-1])
        {
            if(a[j]<a[j-1])
            {
                temp=a[j];
                a[j]=a[j-1];
                a[j-1]=temp;
            }
            j=j-1;
        }
    }
    printf("\n After merge sort the elements of array is\n");
    for(i=0; i<n; i++)
    {
        printf("%d\t", a[i]);
    }
    return(0);
}
```

Algorithm

step 1 - start

step 2 - Input n

step 3 - Repeat for (i=0; i<n; i++)

Input a[i]

step 4 - Repeat for (i=0; i<n; i++)

j=i

Repeat while(j>=1 && a[j]<a[j-1])

if (a[j] < a[j-1])

temp = a[j]

a[j] = a[j-1]

a[j-1] = temp

[End if]

j=i-1

[End while]

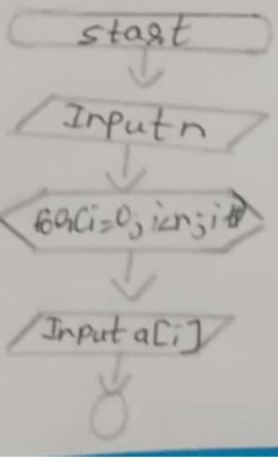
[End for]

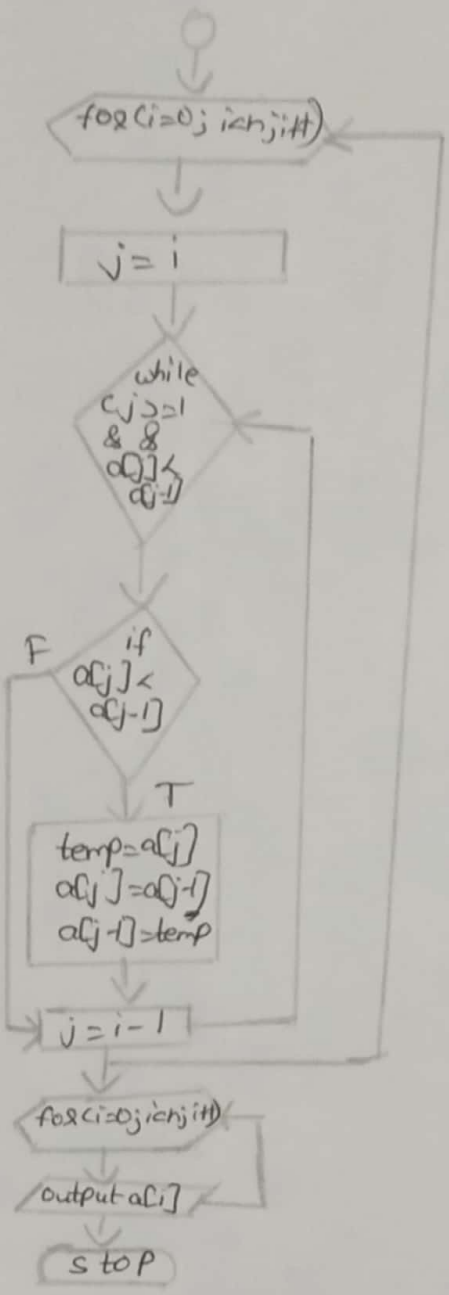
step 5 - Repeat for (i=0; i<n; i++)

output a[i]

step 6 - stop

Flowchart





output

Enter the size of array

5

Enter the elements of array

20 16 63 98 52

After merge sort the elements of array is

16 20 52 63 98