DS LAB cycle 1.1

1. **Write a program to sort an array using bubble sort.**

Source Code:

#include <stdio.h>

void main()

{

int array[100], n, swap;

printf("Enter number of elements\n");

scanf("%d", &n);

printf("Enter the elements : ");

for (int i = 0; i < n; i++)

scanf("%d", &array[i]);

for (int i = 0 ; i < n - 1; i++)

{

for (int j = 0 ; j < n - i - 1; j++)

{

if (array[j] > array[j+1])

{

swap = array[j];

array[j] = array[j+1];

array[j+1] = swap;

}

}

}

printf("Sorted list in ascending order:\n");

for (int i = 0; i < n; i++)

printf("%d\n", array[i]);

}

Output:

Enter number of elements

4

Enter the elements : 3

6

1

5

Sorted list in ascending order:

1

3

5

6

1. **Merge two sorted arrays and store in a third array**

Source Code:

#include <stdio.h>

void main() {

int array1[100], array2[100], final[200],m,n;

printf("Enter the size of First Array ");

scanf("%d",&m);

printf("\nEnter the Elements for First Array (In Sorted Order) ");

for(int i=0;i<m;i++)

scanf("%d",&array1[i]);

printf("Enter the size of Second Array ");

scanf("%d",&n);

printf("\nEnter the Elements for Second Array (In Sorted Order) ");

for(int i=0;i<n;i++)

scanf("%d",&array2[i]);

int k=0,i=0,j=0;

while (i<m && j <n) {

if (array1[i] < array2[j])

final[k++] = array1[i++];

else

final[k++] = array2[j++];

}

while (i < m)

final[k++] = array1[i++];

while (j < n)

final[k++] = array2[j++];

printf("\nFirst Array is :");

for(int i=0;i<m;i++){

printf("\t%d",array1[i]);

}

printf("\nSecond Array is :");

for(int i=0;i<n;i++){

printf("\t%d",array2[i]);

}

printf("\nMerged Array is :");

for(int i=0;i<n+m;i++){

printf("\t%d",final[i]);

}

}

Output:

Enter the size of First Array 3

Enter the Elements for First Array (In Sorted Order) 2

4

5

Enter the size of Second Array 5

Enter the Elements for Second Array (In Sorted Order) 1

3

5

7

8

First Array is :        2       4       5

Second Array is :       1       3       5       7       8

Merged Array is :       1       2       3       4       5       5       7                                                                      8

**...Program finished with exit code 8**

**Press ENTER to exit console.**