Assignment 2 - Modified with low, mid, high Variables

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/*********************************ASSIGNMENT 2*********************
Write a program to store the first year percentage of students in an array.
Write function for sorting array of floating point numbers in ascending order
using Selection Sort and Bubble Sort, and display top five scores.

Modified with variables: low, mid, high
*****************************************************************/

#include <stdio.h>

// Selection sort using low and high
void selectionsort(float arr[], int n)
{
    int low, mid, high;
    float temp;

    for (low = 0; low < n - 1; low++)
    {
        mid = low;

        for (high = low + 1; high < n; high++)
        {
            if (arr[high] < arr[mid])
                mid = high;
        }

        // Swap
        temp = arr[low];
        arr[low] = arr[mid];
        arr[mid] = temp;
    }
}

// Bubble sort using low and high
void bubblesort(float arr[], int n)
{
    int low, high;
    float temp;

    for (low = 0; low < n - 1; low++)
    {
        for (high = 0; high < n - low - 1; high++)
        {
            if (arr[high] > arr[high + 1])
            {
                // Swap
                temp = arr[high];
                arr[high] = arr[high + 1];
                arr[high + 1] = temp;
            }
        }
    }
}

// Function to display top five scores
void displaytopfive(float arr[], int n)
{
    int count = (n < 5) ? n : 5;

    printf("\nTop %d scores:\n", count);
    for (int i = n - 1; i >= n - count; i--)
    {
        printf("%.2f\n", arr[i]);
    }
}

// Function to print array
void printarray(float arr[], int size)
{
    for (int i = 0; i < size; i++)
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        printf("%.2f\n", arr[i]);
    printf("\n");
}

int main()
{
    int n;

    printf("Enter number of students: ");
    scanf("%d", &n);

    float percentages[n];
    printf("*** Enter percentage for First YEAR students ***\n");
    for (int i = 0; i < n; i++)
    {
        printf("Enter percentage for student %d: ", i + 1);
        scanf("%f", &percentages[i]);
    }

    // Selection sort
    selectionsort(percentages, n);
    printf("\nSelection Sort Result:\n");
    printarray(percentages, n);

    // Bubble sort
    bubblesort(percentages, n);
    printf("Bubble Sort Result:\n");
    printarray(percentages, n);

    displaytopfive(percentages, n);

    return 0;
}
```

Program Output:

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================== SAMPLE OUTPUT ==================

Enter number of students: 5
*** Enter percentage for First YEAR students ***
Enter percentage for student 1: 78.5
Enter percentage for student 2: 68.4
Enter percentage for student 3: 87.9
Enter percentage for student 4: 84.5
Enter percentage for student 5: 72.8

Selection Sort Result:
68.40
72.80
78.50
84.50
87.90

Bubble Sort Result:
68.40
72.80
78.50
84.50
87.90

Top 5 scores:
87.90
84.50
78.50
72.80
68.40
```