Assignment 14

Arrays

#include <stdio.h>

int main() {

int arr[10], n, sum = 0, evenSum = 0, oddSum = 0, max, min, secondLargest,

secondSmallest;

// take array elements from the user

printf("Enter 10 integers:\n");

for (int i = 0; i < 10; i++) {

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

}

// Calculate the sum of the array elements

for (int i = 0; i < 10; i++) {

sum += arr[i];

}

printf("Sum of array elements: %d\n\n", sum);

// Calculate the average

float average = (float)sum / 10;

printf("Average of array elements: %.2f\n\n", average);

// Calculate the sum of even and odd numbers

for (int i = 0; i < 10; i++) {

if (arr[i] % 2 == 0) {

evenSum += arr[i];

} else {

oddSum += arr[i];

}

}

printf("Sum of even numbers: %d\n\n", evenSum);

printf("Sum of odd numbers: %d\n\n", oddSum);

// Find the greatest number

max = arr[0];

for (int i = 1; i < 10; i++) {

if (arr[i] > max) {

max = arr[i];

}

}

printf("Greatest number: %d\n\n", max);

// Find the smallest number

min = arr[0];

for (int i = 1; i < 10; i++) {

if (arr[i] < min) {

min = arr[i];

}

}

printf("Smallest number: %d\n\n", min);

// Display elements in reverse order

printf("Elements in reverse order:");

for (int i = 9; i >= 0; i--) {

printf("%d ", arr[i]);

}

printf("\n\n");

// Copy elements from the source array to the copy array

int copyArray[10];

for (int i = 0; i < 10; i++) {

copyArray[i] = arr[i];

}

printf("Elements in the copy array:\n");

for (int i = 0; i < 10; i++) {

printf("%d ", copyArray[i]);

}

printf("\n\n");

// Sort the array in ascending order (Bubble Sort)

for (int i = 0; i < 10 - 1; i++) {

for (int j = 0; j < 10 - i - 1; j++) {

if (arr[j] > arr[j + 1]) {

int temp = arr[j];

arr[j] = arr[j + 1];

arr[j + 1] = temp;

}

}

}

printf("Sorted array in ascending order: ");

for (int i = 0; i < 10; i++) {

printf("%d ", arr[i]);

}

printf("\n\n");

// Find the second largest

secondLargest = arr[8];

printf("Second largest number: %d\n\n", secondLargest);

// Find the second smallest

secondSmallest = arr[1];

printf("Second smallest number: %d\n\n", secondSmallest);

return 0;

}

