

# 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;
}
```

Enter 10 integers:

42

69

17

23

55

30

98

87

74

7

Sum of array elements: 502

Average of array elements: 50.20

Sum of even numbers: 244

Sum of odd numbers: 258

Greatest number: 98

Smallest number: 7

Elements in reverse order: 7 74 87 98 30 55 23 17 69 42

Elements in the copy array:

42 69 17 23 55 30 98 87 74 7

Sorted array in ascending order: 7 17 23 30 42 55 69 74 87 98

Second largest number: 87

Second smallest number: 17