Assignment - 14 (Array in C Language)

1. Write a program to calculate the sum of numbers stored in an array of size 10. Take array values from the user.

#include<stdio.h>

int main()

{

int arr[10], i, sum = 0;

printf("Enter 10 numbers: ");

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

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

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

sum = sum + arr[i];

printf("Sum of all 10 numbers of array is %d.", sum);

return 0;

}

2. Write a program to calculate the average of numbers stored in an array of size 10. Take array values from the user.

#include<stdio.h>

int main()

{

int a[10], i, sum = 0;

float avg;

printf("Enter 10 numbers: ");

for(i = 0; i <= 9; i++)

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

for(i = 0; i <= 9; i++)

sum = sum + a[i];

avg = sum / 10.0;

printf("Average is %f.", avg);

return 0;

}

3. Write a program to calculate the sum of all even numbers and sum of all odd

numbers, which are stored in an array of size 10. Take array values from the user.

#include<stdio.h>

int main()

{

int arr[10], i, esum = 0, osum = 0;

printf("Enter 10 numbers: ");

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

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

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

if(arr[i] % 2)

osum = osum + arr[i];

else

esum = esum + arr[i];

printf("Sum of all even numbers in array is %d.\n", esum);

printf("Sum of all odd numbers in array is %d.", osum);

return 0;

}

4. Write a program to find the greatest number stored in an array of size 10. Take array values from the user.

#include<stdio.h>

int main()

{

int arr[10], i, largest;

printf("Enter 10 numbers: ");

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

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

largest = arr[0];

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

if(arr[i] > largest)

largest = arr[i];

printf("Greatest element in array is %d.", largest);

return 0;

}

5. Write a program to find the smallest number stored in an array of size 10. Take array values from the user.

#include<stdio.h>

int main()

{

int arr[10], i, smallest;

printf("Enter 10 numbers: ");

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

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

smallest = arr[0];

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

if(arr[i] < smallest)

smallest = arr[i];

printf("Smallest element in array is %d.", smallest);

return 0;

}

6. Write a program to sort elements of an array of size 10. Take array values from the user.

#include<stdio.h>

int main()

{

int arr[10], i, count = -1;

printf("Enter 10 numbers: ");

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

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

while(count)

{

count = 0;

for(i = 0; i < 9; i++)

if(arr[i] > arr[i + 1])

{

arr[i] = arr[i] + arr[i + 1];

arr[i + 1] = arr[i] - arr[i + 1];

arr[i] = arr[i] - arr[i + 1];

count++;

}

}

printf("Array after sorting is now:\n");

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

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

return 0;

}

7. Write a program to find second largest in an array.Take array values from the user.

#include<stdio.h>

void swapNums(int \*, int \*);

void swapNums(int \*num1, int \*num2)

{

\*num1 = \*num1 + \*num2;

\*num2 = \*num1 - \*num2;

\*num1 = \*num1 - \*num2;

}

int main()

{

int arr[10], i, largest, largestIndex, secondLargest;

// taking user input

printf("Enter 10 numbers: ");

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

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

// finding largest element

largest = arr[0];

largestIndex = 0;

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

if(arr[i] > largest)

{

largest = arr[i];

largestIndex = i;

}

// swapping largest element with first element

swapNums(&arr[0], &arr[largestIndex]);

secondLargest = arr[1];

for(i = 2; i < 10; i++)

if(arr[i] > secondLargest)

secondLargest = arr[i];

printf("Second Largest Element in array is %d.", secondLargest);

return 0;

}

8. Write a program to find the second smallest number in an array.Take array values from the user.

#include<stdio.h>

void swapNums(int \*, int \*);

void swapNums(int \*num1, int \*num2)

{

\*num1 = \*num1 + \*num2;

\*num2 = \*num1 - \*num2;

\*num1 = \*num1 - \*num2;

}

int main()

{

int arr[10], i, smallest, smallestIndex, secondSmallest;

printf("Enter 10 numbers: ");

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

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

smallest = arr[0];

secondSmallest = 0;

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

if(arr[i] < smallest)

{

smallest = arr[i];

smallestIndex = i;

}

swapNums(&arr[0], &arr[smallestIndex]);

secondSmallest = arr[1];

for(i = 2; i < 10; i++)

if(arr[i] < secondSmallest)

secondSmallest = arr[i];

printf("The second smallest number in array is %d.", secondSmallest);

return 0;

}

9. Write a program in C to read n number of values in an array and display it in reverse order. Take array values from the user.

#include<stdio.h>

int main()

{

int n, arr[n], i;

printf("Enter number of elements to be stored in array: ");

scanf("%d", &n);

printf("Enter %d values to be stored in array: ", n);

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

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

printf("Array values in reverse order are:\n");

for(i = n - 1; i >= 0; i--)

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

return 0;

}

10. Write a program in C to copy the elements of one array into another array.Take array values from the user.

#include<stdio.h>

int main()

{

int arr1[10], arr2[10], i;

printf("Enter 10 numbers: ");

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

scanf("%d", &arr1[i]);

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

arr2[i] = arr1[i];

printf("\nElements of array 1 are:\n");

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

printf("%d ", arr1[i]);

printf("\nElements of array 2 are:\n");

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

printf("%d ", arr2[i]);

return 0;

}