

**Master arrays**

***More Functions on arrays:***

01- Find sum negatives and positive integers

02- Max & Min of given numbers

03- Find two first maximum numbers

04- Separate Even, odd numbers

05- Insert an element at a specified position

06- Delete a specified element

07- Remove repeated elements

08- Merge two arrays in sorted order

09- Union & intersection of the given array

10- Sum of two numbers equal to X, X integer given

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***More Functions on arrays:***

1. **Find sum of negative and positive integers**

**// 01- Find sum of negative and positive integers**

**#include <stdio.h>**

**int main()**

**{**

**int array[] = {-22, -17, 2, 5, 3, 4, 6, 8, 7, 1, 9};**

**int size = sizeof(array) / sizeof(array[0]);**

**int i, negs = 0, pos = 0;**

**for (i = 0; i < size; i++)**

**{**

**if (array[i] < 0)**

**negs += array[i];**

**if (array[i] > 0)**

**pos += array[i];**

**}**

**printf("Sum of negatives: %d\n", negs);**

**printf("Sum of positives: %d\n", pos);**

**return 0;**

**}**

1. **Max & Min of given numbers**

**// 02- Max & Min of given numbers**

**#include <stdio.h>**

**int main()**

**{**

**int array[] = {-22, -17, 2, 5, 3, 4, 6, 8, 7, 1, 9, 13};**

**int size = sizeof(array) / sizeof(array[0]);**

**int i;**

**int min = array[0];**

**int max = array[0];**

**for (i = 0; i < size; i++)**

**{**

**if (min > array[i])**

**min = array[i];**

**if (max < array[i])**

**max = array[i];**

**}**

**printf("Minimum: %d\n", min);**

**printf("Maximum: %d\n", max);**

**return 0;**

**}**

****

1. **Find two first maximum numbers**

**// 03-    Find two first maximum numbers**

**#include <stdio.h>**

**int main()**

**{**

**int i, size, max, max2, position = 0;**

**int a[] = {-22, 2, 5, 3, 1, 9, 13};**

**size = sizeof(a) / sizeof(a[0]);**

**int temp[size - 1];**

**max = a[0];**

**// find first max number**

**for (i = 0; i < size; i++)**

**{**

**if (a[i] > max)**

**{**

**max = a[i];**

**position = i;**

**}**

**}**

**// deleting first maximum number in array**

**for (i = 0; i < size - 1; i++)**

**{**

**if (i < position)**

**temp[i] = a[i];**

**if (i >= position)**

**temp[i] = a[i + 1];**

**}**

**max2 = temp[0];**

**// finding second max in the remaining elements**

**for (i = 0; i < size - 1; i++)**

**{**

**if (temp[i] > max2)**

**max2 = temp[i];**

**}**

**printf("The fisrt largest number is %d\n", max);**

**printf("The second largest number is %d\n", max2);**

**}**

1. **Separate Even, odd numbers**

**// 04- Separate Even, odd numbers**

**#include <stdio.h>**

**int main()**

**{**

**int i, size;**

**int a[] = {-22, 2, 5, 3, 1, 9, 13, 77, 88, 99, 16, 14, 24};**

**size = sizeof(a) / sizeof(a[0]);**

**printf("Even numbers are:\n");**

**for (i = 0; i < size; i++)**

**if (a[i] >= 0)**

**if (a[i] % 2 == 0)**

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

**printf("\nOdd numbers are:\n");**

**for (i = 0; i < size; i++)**

**          if (a[i] >= 0)**

**if (a[i] % 2 == 1)**

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

**}**

1. **Insert an element at a specified position**

**// 05- Insert an element at a specified position**

**#include <stdio.h>**

**int main()**

**{**

**int i, size, position, insitem;**

**int a[] = {-22, 2, 5, 3, 1, 9, 13};**

**size = sizeof(a) / sizeof(a[0]);**

**int temp[size + 1];**

**printf("Enter element to be inserted: ");**

**scanf("%d", &insitem);**

**printf("Enter position for an element to be inserted: ");**

**scanf("%d", &position);**

**position = position - 1;**

**for (i = 0; i <= size; i++)**

**{**

**if (i < position)**

**temp[i] = a[i];**

**if (i > position)**

**temp[i] = a[i - 1];**

**if (i == position)**

**temp[i] = insitem;**

**}**

**printf("Array after inserting %d\n", insitem);**

**for (i = 0; i <= size; i++)**

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

**}**

1. **Delete a specified element**

**// 06- Delete a specified element**

**#include <stdio.h>**

**int main(){**

**int i, size, position, delitem, flag = 0;**

**int a[] = {-22, 2, 5, 3, 1, 9, 13};**

**size = sizeof(a) / sizeof(a[0]);**

**int temp[size - 1];**

**for (i = 0; i < size; i++)**

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

**printf("\nEnter element to be deleted: ");**

**scanf("%d", &delitem);**

**for (i = 0; i < size; i++) // find position of a number**

**{**

**if (a[i] == delitem)**

**{**

**position = i;**

**flag = 1;**

**}**

**}**

**if (flag == 1) {**

**for (i = 0; i < size - 1; i++) // deleting number in array**

**{**

**if (i < position)**

**temp[i] = a[i];**

**if (i >= position)**

**temp[i] = a[i + 1];**

**}**

**printf("Array after deleting %d\n", delitem);**

**for (i = 0; i < size - 1; i++)**

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

**}**

**else**

**printf("Number not found in array\n");**

**}**

1. **Remove repeated elements**

**// 07- Remove repeated elements**

**#include <stdio.h>**

**void removerep(int position, int a[], int size);**

**int main() {**

**int i, j, size, count = 0, k, position;**

**int a[] = {-22, 2, 5, 3, 1, 9, 13};**

**size = sizeof(a) / sizeof(a[0]);**

**int \*temp = a;**

**for (i = 0; i < size; i++)**

**{**

**for (j = i + 1; j < size;)**

**{**

**if (a[i] == a[j])**

**{**

**removerep(j, a, size);**

**size--;**

**}**

**else**

**j++;**

**}**

**}**

**printf("After removing repeated elements\n");**

**for (i = 0; i < size; i++)**

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

**}**

**void removerep(int position, int a[], int size)**

**{**

**int i;**

**for (i = 0; i < size; i++) // deleting repeated number in array**

**{**

**if (i < position)**

**a[i] = a[i];**

**if (i >= position)**

**a[i] = a[i + 1];**

**}**

**}**

**/// Method II :**

**// 07- Remove repeated elements**

**#include <stdio.h>**

**int main()**

**{**

**int i, j, k, size, count = 0, position;**

**int a[] = {-22, 2, 5, 3, 1, 9, 13};**

**size = sizeof(a) / sizeof(a[0]);**

**int \*temp = a;**

**for (i = 0; i < size; i++)**

**{**

**for (j = i + 1; j < size;)**

**{**

**if (a[i] == a[j])**

**{**

**for (k = j; k < size; k++)**

**a[k] = a[k + 1];**

**size--;**

**}**

**else**

**j++;**

**          }**

**}**

**printf("After removing repeated elements\n");**

**for (i = 0; i < size; i++)**

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

**}**

1. **Merge two arrays in sorted order**

**// 08- Merge two arrays in sorted order**

**#include <stdio.h>**

**int main()**

**{**

**int i, size1, size2, j = 0, temp;**

**int a1[] = {1, 2, 3, 4};**

**size1 = sizeof(a1) / sizeof(a1[0]);**

**int a2[] = {5, 6, 7, 8};**

**size2 = sizeof(a2) / sizeof(a2[0]);**

**int a3[size1 + size2];**

**// merging**

**for (i = 0; i < size1; i++)**

**{**

**a3[j] = a1[i];**

**j++;**

**}**

**for (i = 0; i < size2; i++)**

**{**

**a3[j] = a2[i];**

**j++;**

**}**

**printf("\nArray after merging\n");**

**for (i = 0; i < size1 + size2; i++)**

**printf("%d\t", a3[i]);**

**return 0;**

**}**

1. **Union & intersection of the given array**

**// 09-    Union & intersection of the given array**

**#include <stdio.h>**

**#include <conio.h>**

**#include <stdlib.h>**

**void display(int array[], int size);**

**void unions(int array1[], int array2[], int size1, int size2);**

**void intersection(int array1[], int array2[], int size1, int size2);**

**int main()**

**{**

**int size1, size2;**

**int array1[] = {1, 2, 3, 4, 5};**

**int array2[] = {1, 2, 3, 6, 7, 8, 9, 10};**

**size1 = sizeof(array1) / sizeof(array1[0]);**

**size2 = sizeof(array2) / sizeof(array2[0]);**

**printf("array1:\t");**

**display(array1, size1);**

**printf("array2:\t");**

**display(array2, size2);**

**intersection(array1, array2, size1, size2);**

**printf("\n");**

**unions(array1, array2, size1, size2);**

**return 0;**

**}**

**void display(int array[], int size)**

**{**

**for (int i = 0; i < size; i++)**

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

**printf("\n");**

**}**

**void intersection(int array1[], int array2[], int size1, int size2)**

**{**

**printf("Inters:\t");**

**for (int i = 0; i < size1; i++)**

**for (int j = 0; j < size2; j++)**

**if (array1[i] == array2[j])**

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

**}**

**void unions(int array1[], int array2[], int size1, int size2)**

**{**

**int i, j, k, size, count = 0;**

**size = size1 + size2;**

**int array[size];**

**// merge**

**for (i = 0; i < size1; i++)**

**{**

**array[count] = array1[i];**

**count++;**

**}**

**for (i = 0; i < size2; i++)**

**{**

**array[count] = array2[i];**

**count++;**

**}**

**// remove repeated elements**

**for (i = 0; i < size - 1; i++)**

**{**

**for (j = i + 1; j < size;)**

**{**

**if (array[i] == array[j])**

**{**

**for (k = j; k < size; k++)**

**{**

**if (k < j)**

**array[k] = array[k];**

**if (k >= j)**

**array[k] = array[k + 1];**

**}**

**size--;**

**}**

**else**

**j++;**

**}**

**}**

**printf("Unions:\t");**

**display(array, size);**

**}**

****

1. **Sum of two numbers equal to X, X integer given**

**// 10-    Sum of two numbers equal to X, X integer given**

**#include <stdio.h>**

**#include <stdlib.h>**

**int main()**

**{**

**int x, size;**

**int array[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};**

**size = sizeof(array) / sizeof(array[0]);**

**printf("Enter number: ");**

**scanf("%d", &x);**

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

**for (int j = i + 1; j < size; j++)**

**if (array[i] + array[j] == x)**

**printf("%d + %d = %d\n", array[i], array[j], x);**

**return 0;**

**}**

1. **Average of numbers at even position**

**// 11- Average of numbers at even position**

**#include <stdio.h>**

**#include <conio.h>**

**#include <stdlib.h>**

**int main()**

**{**

**int i, size, sum = 0;**

**int array[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};**

**size = sizeof(array) / sizeof(array[0]);**

**for (i = 0; i < size; i++)**

**{**

**if ((i + 1) % 2 == 0)**

**sum += array[i];**

**}**

**printf("Sum = %d\n", sum);**

**printf("Average = %d\n", sum / 2);**

**return 0;**

**}**

****

1. **Array elements in reverse order using swapping**

**// 12-    Array elements in reverse order using swapping**

**#include <stdio.h>**

**#include <stdlib.h>**

**int main()**

**{**

**int i, k, size, temp;**

**int array[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};**

**size = sizeof(array) / sizeof(array[0]);**

**printf("Before reverse: ");**

**for (i = 0; i < size; i++)**

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

**for (k = size; k >= 0; k--)**

**{**

**for (i = 0; i < k - 1; i++)**

**{**

**temp = array[i];**

**array[i] = array[i + 1];**

**array[i + 1] = temp;**

**}**

**}**

**printf("\nAfter reverse : ");**

**for (i = 0; i < size; i++)**

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

**return 0;**

**}**

1. **Search for a specific element**

**// 13-    Search for a specific element**

**#include <stdio.h>**

**#include <stdlib.h>**

**int main()**

**{**

**int i, x, size, found = 0;**

**int array[] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10};**

**size = sizeof(array) / sizeof(array[0]);**

**for (i = 0; i < size; i++)**

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

**printf("\nFind: ");**

**scanf("%d", &x);**

**for (i = 0; i < size; i++)**

**if (x == array[i])**

**printf("%d found at position %d\n", x, i);**

**return 0;**

**}**

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