**LAB TASK 5 WITH SOLUTIONS**

**1.[Write a C program to create, initialize and use pointers](https://codeforwin.org/2017/01/c-program-to-demonstrate-use-of-pointers.html).**

**#include <stdio.h>**

**int main()**

**{**

**char ch;**

**char \*pCh;**

**pCh = &ch;**

**ch = 'A';**

**printf("Value of ch: %c\n",ch);**

**printf("Address of ch: %p\n",&ch);**

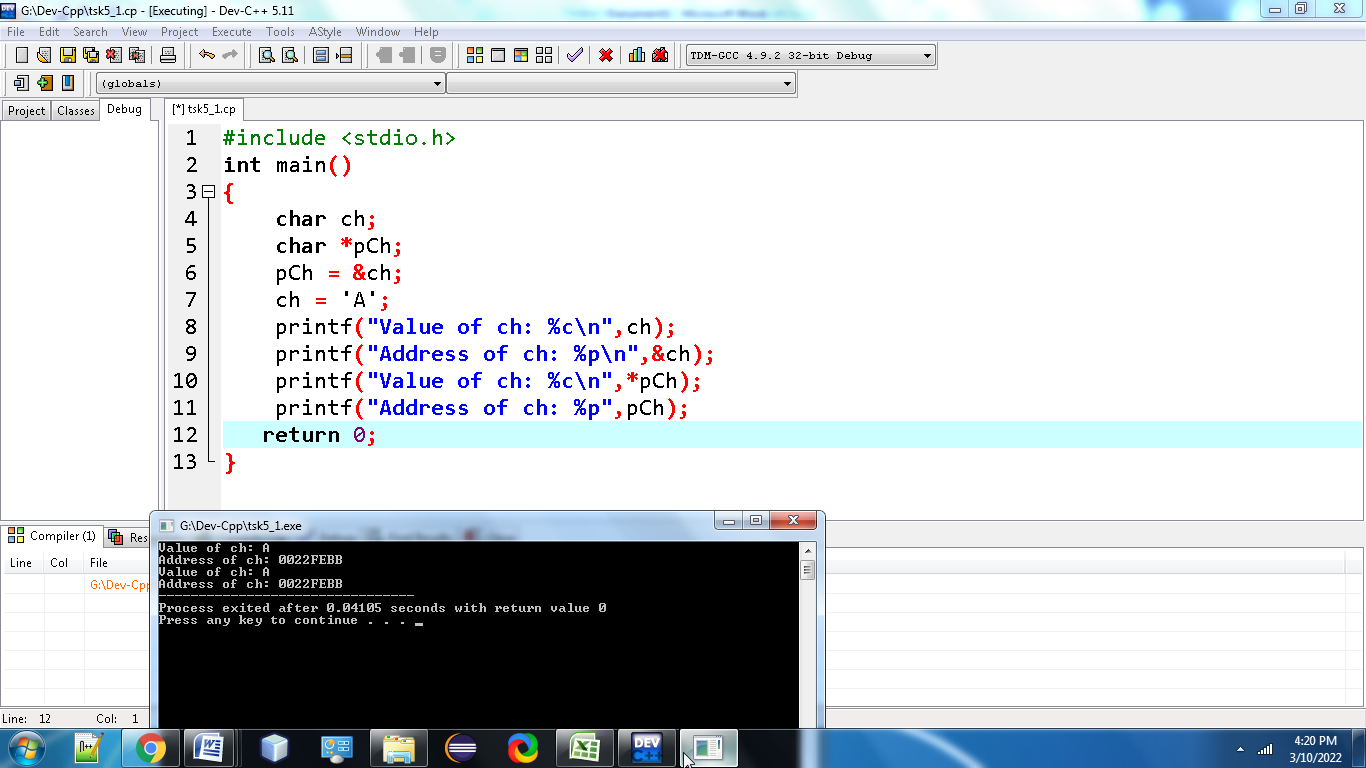
**printf("Value of ch: %c\n",\*pCh);**

**printf("Address of ch: %p",pCh);**

**return 0;**

**}**

**Output:**

****

1. [**Write a C program to add two numbers using pointers**](https://codeforwin.org/2017/01/c-program-to-add-two-numbers-using-pointers.html)**.**

**#include <stdio.h>**

**int main()**

**{**

**int first, second, \*p, \*q, sum;**

**printf("Enter two integers to add\n");**

**scanf("%d%d", &first, &second);**

**p = &first;**

**q = &second;**

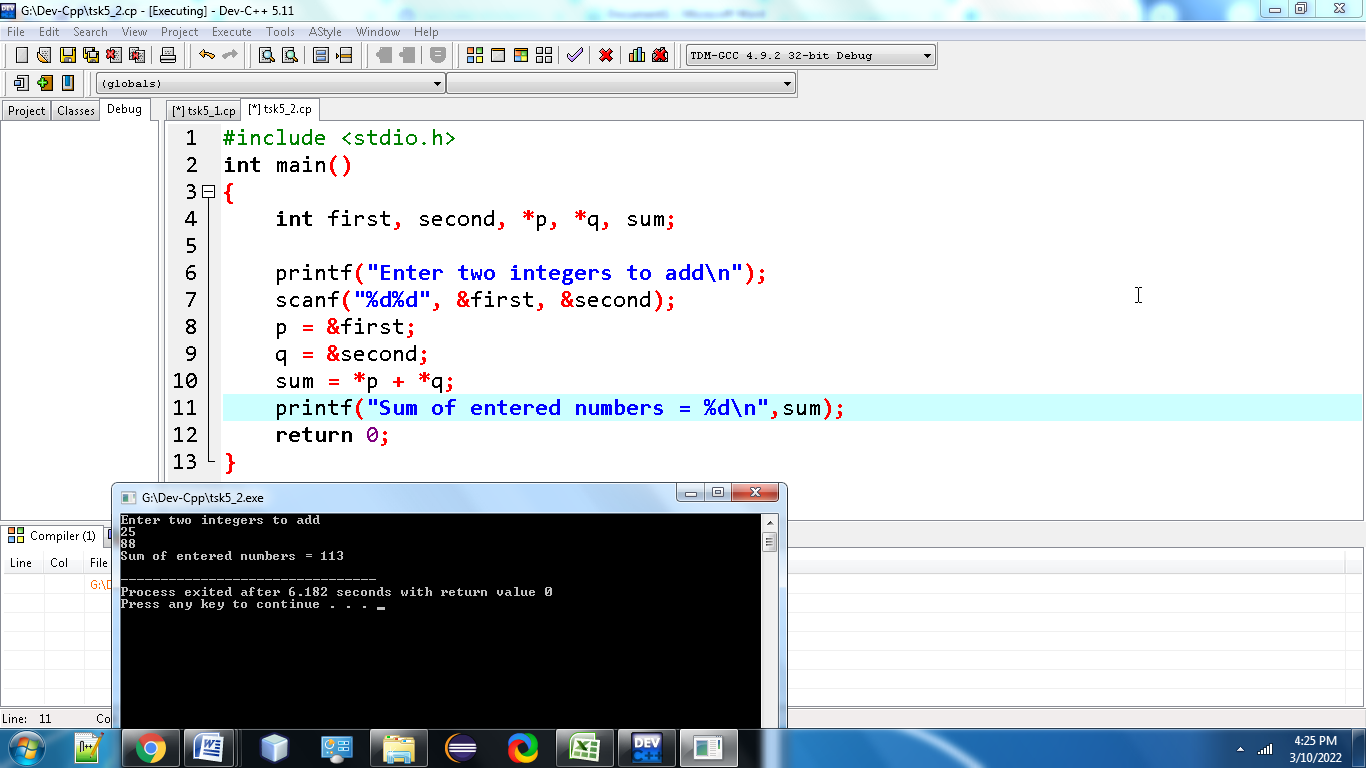
**sum = \*p + \*q;**

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

**return 0;**

**}**

**Output:**

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**3.** [**Write a C program to swap two numbers using pointers**](https://codeforwin.org/2017/01/c-program-to-swap-two-numbers-using-call-by-reference.html)**.**

**#include <stdio.h>**

**void swap(int \*x,int \*y)**

**{**

**int t;**

**t = \*x;**

**\*x = \*y;**

**\*y = t;**

**}**

**int main()**

**{**

**int num1,num2;**

**printf("Enter value of num1: ");**

**scanf("%d",&num1);**

**printf("Enter value of num2: ");**

**scanf("%d",&num2);**

**printf("Before Swapping: num1 is: %d, num2 is: %d\n",num1,num2);**

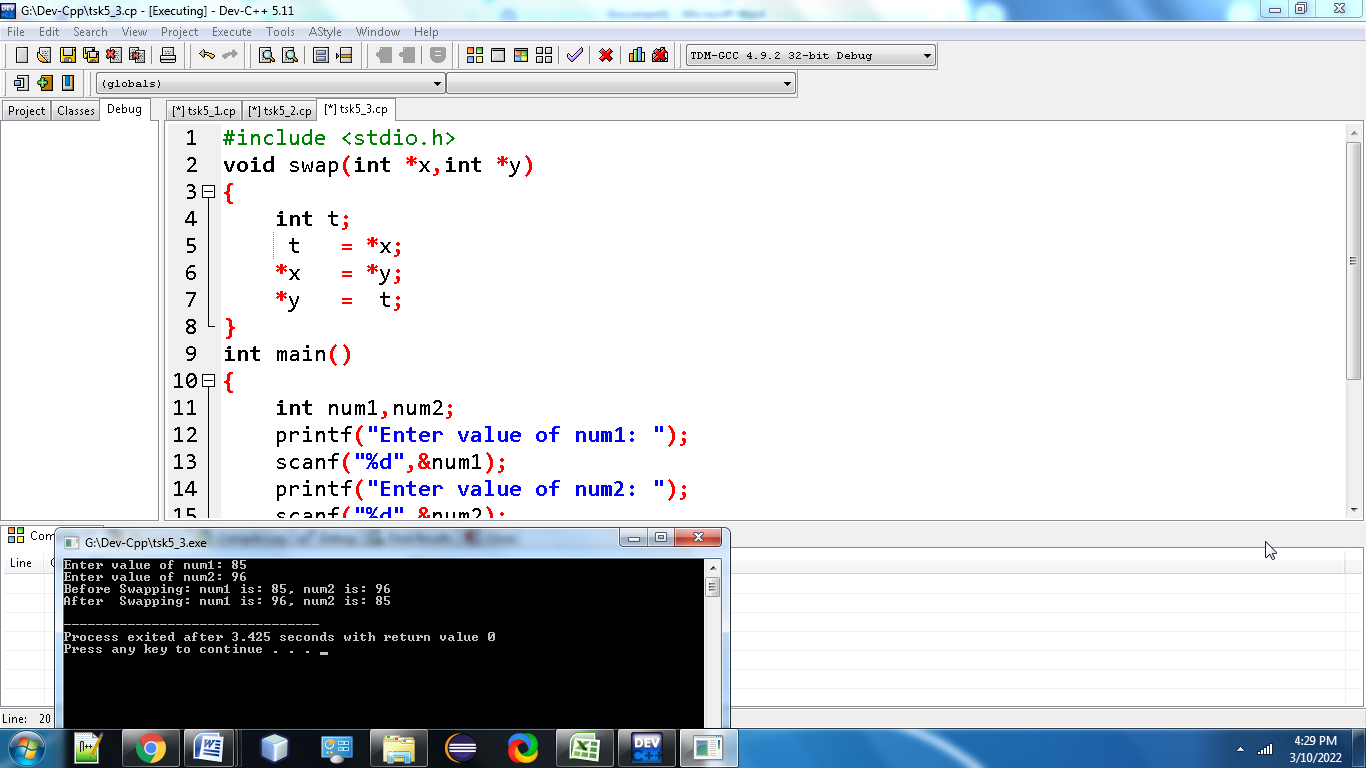
**swap(&num1,&num2);**

**printf("After Swapping: num1 is: %d, num2 is: %d\n",num1,num2);**

**return 0;**

**}**

**Output:**

****

**4)** [**Write a C program to input and print array elements using pointer**](https://codeforwin.org/2017/11/c-program-input-print-array-elements-using-pointers.html)**.**

**#include <stdio.h>**

**#define MAX\_SIZE 100**

**int main()**

**{**

**int arr[MAX\_SIZE];**

**int N, i;**

**int \* ptr = arr;**

**printf("Enter size of array: ");**

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

**printf("Enter elements in array:\n");**

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

**{**

**scanf("%d", ptr);**

**ptr++;**

**}**

**ptr = arr;**

**printf("Array elements: ");**

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

**{**

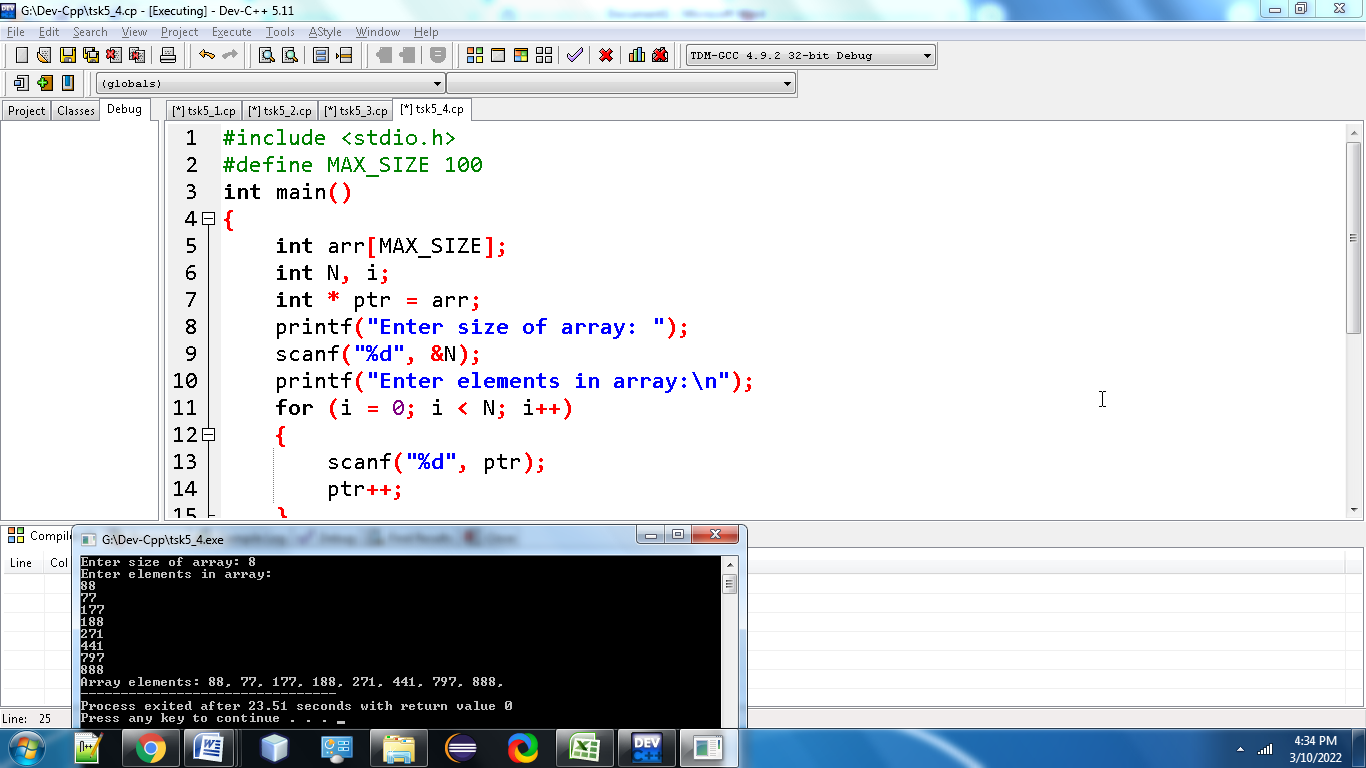
**printf("%d, ", \*ptr);**

**ptr++;**

**}**

**return 0;**

**}**

**Output:**

**5.** [**Write a C program to copy one array to another using pointers**](https://codeforwin.org/2017/11/c-program-to-copy-one-array-to-another-using-pointers.html)

**#include <stdio.h>**

**#define MAX\_SIZE 100**

**void printArray(int arr[], int size);**

**int main()**

**{**

**int source\_arr[MAX\_SIZE], dest\_arr[MAX\_SIZE];**

**int size, i;**

**int \*source\_ptr = source\_arr;**

**int \*dest\_ptr = dest\_arr;**

**int \*end\_ptr;**

**printf("Enter size of array: ");**

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

**printf("Enter elements in array: ");**

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

**{**

**scanf("%d", (source\_ptr + i));**

**}**

**end\_ptr = &source\_arr[size - 1];**

**printf("\nSource array before copying: ");**

**printArray(source\_arr, size);**

**printf("\nDestination array before copying: ");**

**printArray(dest\_arr, size);**

**while(source\_ptr <= end\_ptr)**

**{**

**\*dest\_ptr = \*source\_ptr;**

**source\_ptr++;**

**dest\_ptr++;**

**}**

**printf("\n\nSource array after copying: ");**

**printArray(source\_arr, size);**

**printf("\nDestination array after copying: ");**

**printArray(dest\_arr, size);**

**return 0;**

**}**

**void printArray(int \*arr, int size)**

**{**

**int i;**

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

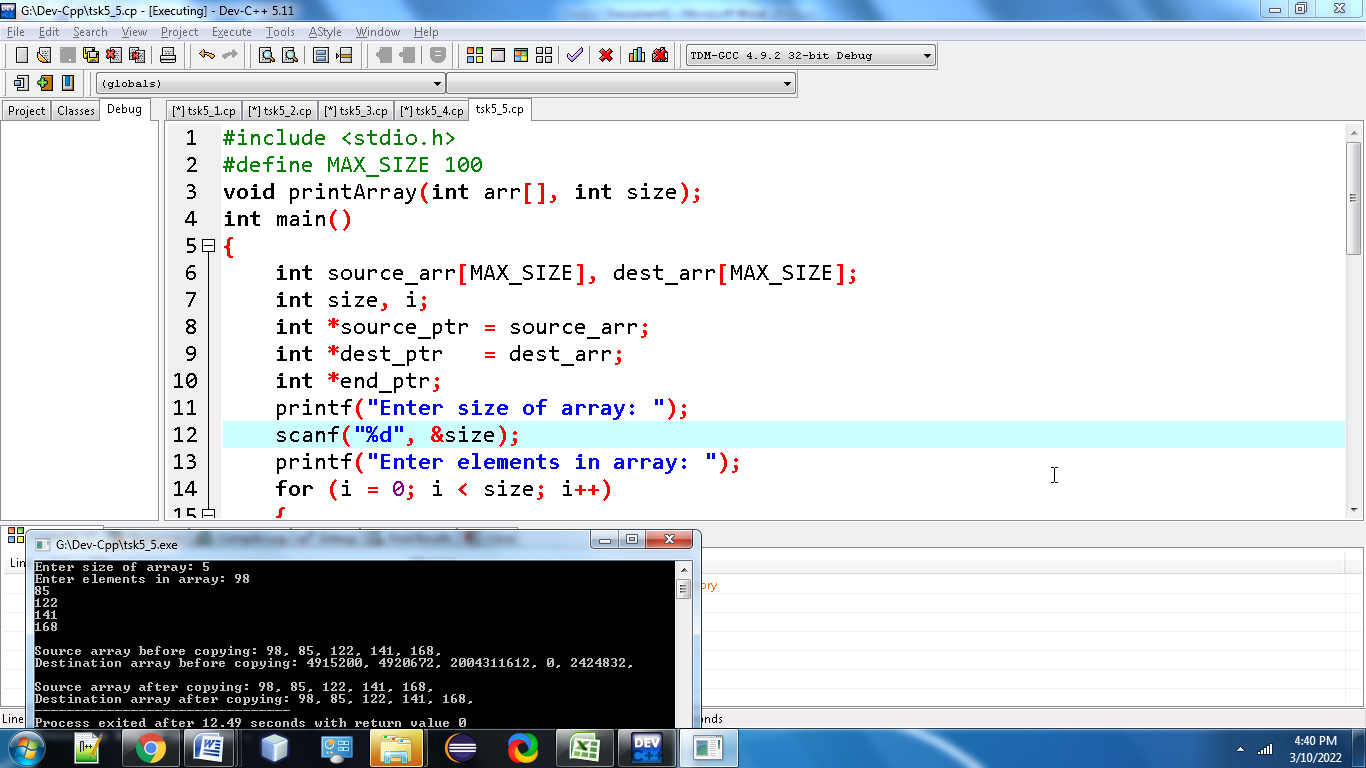
**{**

**printf("%d, ", \*(arr + i));**

**}**

**}**

**Output:**

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**6.** [**Write a C program to swap two arrays using pointers**](https://codeforwin.org/2017/11/c-program-to-swap-two-arrays-using-pointers.html)**.**

**#include <stdio.h>**

**#include <stdlib.h>**

**void swapTwoArrays(int \*arr1, int \*arr2, int n)**

**{**

**int i, temp;**

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

**{**

**temp = \*(arr1 + i);**

**\*(arr1 + i) = \*(arr2 + i);**

**\*(arr2 + i) = temp;**

**}**

**return;**

**}**

**int main()**

**{**

**int \*arr1, \*arr2, i, j, n;**

**printf("Enter the order of the arrays:");**

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

**arr1 = (int \*) malloc(sizeof(int) \* n);**

**arr2 = (int \*) malloc(sizeof(int) \* n);**

**printf("Enter data for first array:\n");**

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

**{**

**printf("Array1[%d] : ", i);**

**scanf("%d", (arr1 + i));**

**}**

**printf("Enter data for second array:\n");**

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

**{**

**printf("Array2[%d] :", i);**

**scanf("%d", arr2 + i);**

**}**

**swapTwoArrays(arr1, arr2, n);**

**printf("Elements in first array:\n");**

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

**{**

**printf("%d ", \*(arr1 + i));**

**}**

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

**printf("Elements in second array:\n");**

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

**{**

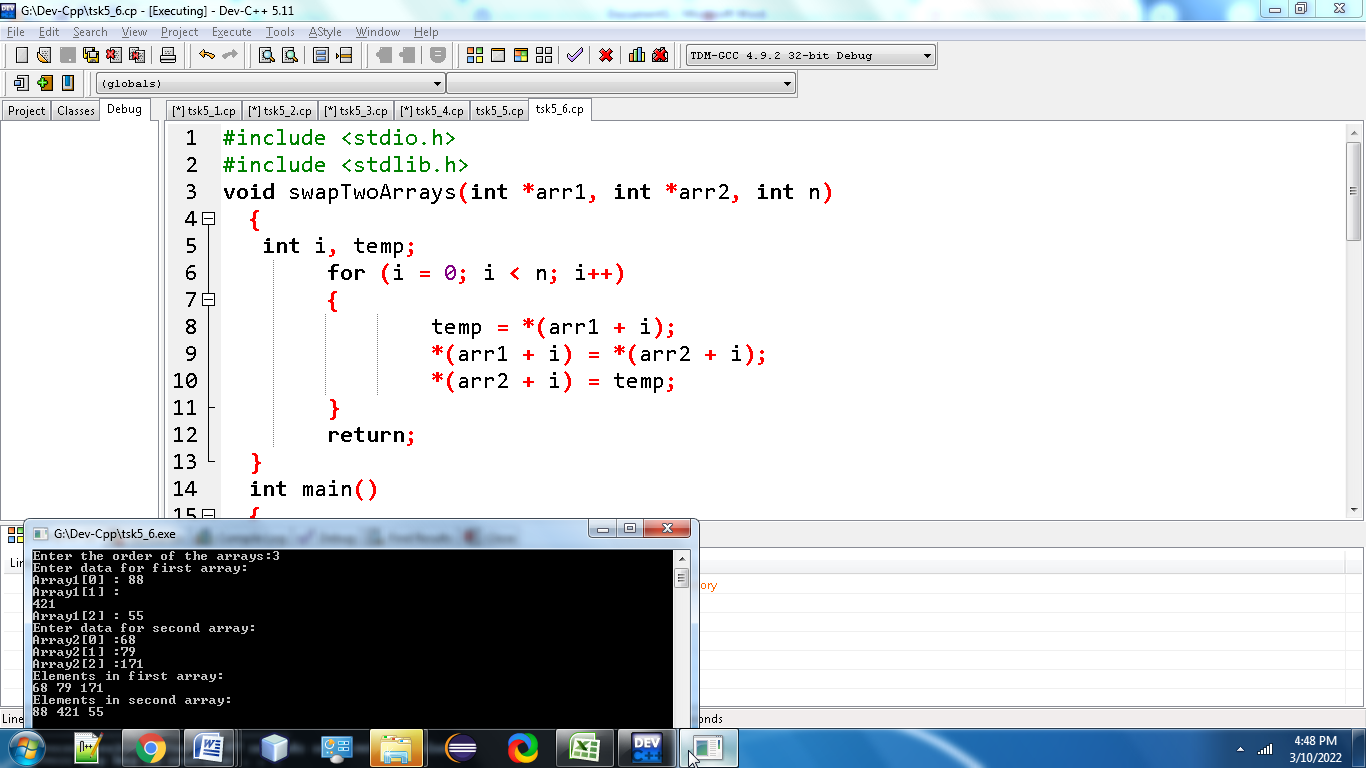
**printf("%d ", \*(arr2 + i));**

**}**

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

**return 0;**

**}**

**Output:**

**7.Write a C Program to reverse an Array Using Pointers**

**#include <stdio.h>**

**#define MAX\_SIZE 100**

**void printArr(int \*arr, int size);**

**int main()**

**{**

**int arr[MAX\_SIZE];**

**int size;**

**int \*left = arr;**

**int \*right;**

**printf("Enter size of array: ");**

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

**right = &arr[size - 1];**

**printf("Enter elements in array: ");**

**while(left <= right)**

**{**

**scanf("%d", left++);**

**}**

**printf("\nArray before reverse: ");**

**printArr(arr, size);**

**left = arr;**

**while(left < right)**

**{**

**\*left ^= \*right;**

**\*right ^= \*left;**

**\*left ^= \*right;**

**left++;**

**right--;**

**}**

**printf("\nArray after reverse: ");**

**printArr(arr, size);**

**return 0;**

**}**

**void printArr(int \* arr, int size)**

**{**

**int \* arrEnd = (arr + size - 1);**

**while(arr <= arrEnd)**

**{**

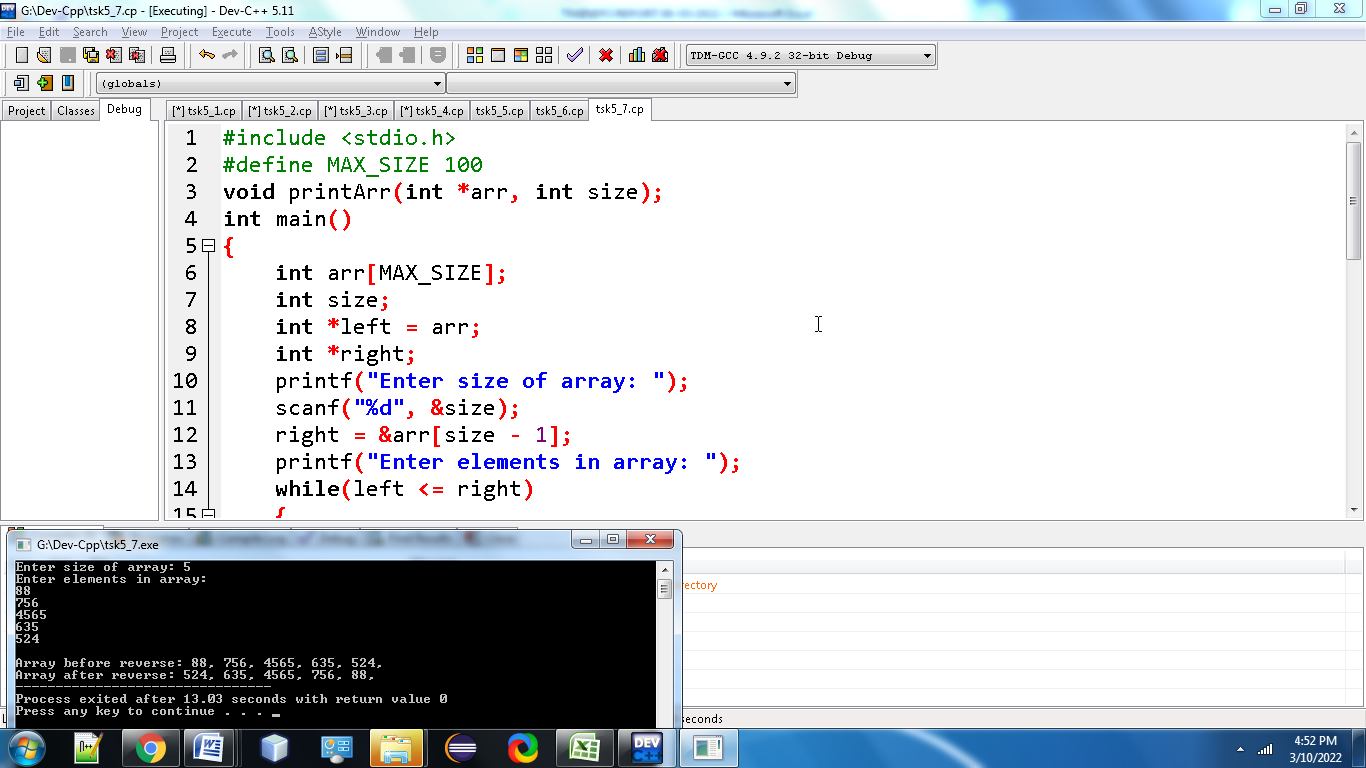
**printf("%d, ", \*arr);**

**arr++;**

**}**

**}**

**Output:**

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8. [Write a C program to find length of string using pointers](https://codeforwin.org/2015/04/c-program-to-calculate-length-of-string.html#program-using-pointer).

**#include<stdio.h>**

**#include<conio.h>**

**int string\_ln(char\*);**

**int main() {**

**char str[20];**

**int length;**

**printf("\nEnter any string : ");**

**gets(str);**

**length = string\_ln(str);**

**printf("The length of the given string %s is : %d", str, length);**

**return 0;**

**}**

**int string\_ln(char\*p)**

**{**

**int count = 0;**

**while (\*p != '\0') {**

**count++;**

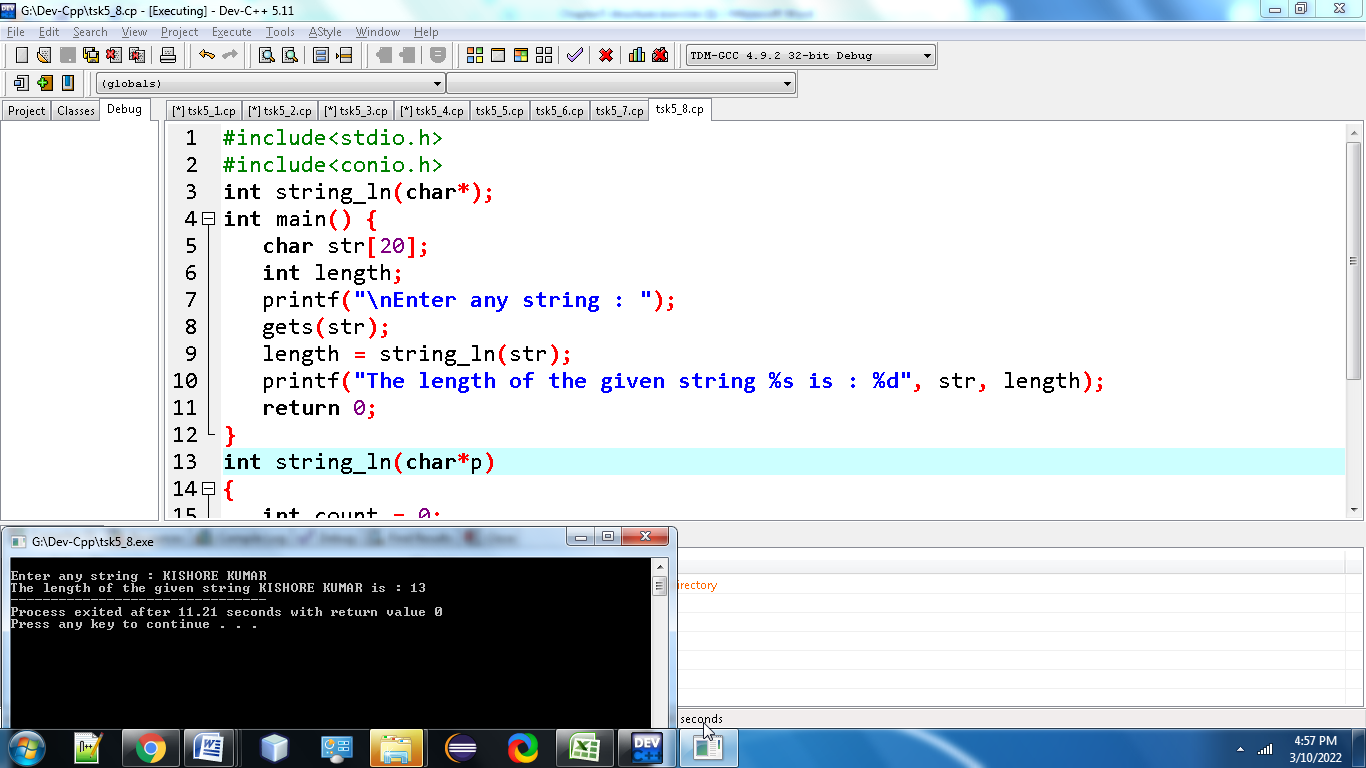
**p++;**

**}**

**return count;**

**}**

**Output:**

****

**9.** [**Write a C program to copy one string to another using pointers**](https://codeforwin.org/2015/11/c-program-to-copy-one-string-to-another.html#program-using-pointer)**.**

**#include<stdio.h>**

**void copystr(char\*,char\*);**

**int main()**

**{**

**char\*str1="OLD IS GOLD";**

**char str2[30];**

**copystr(str2,str1);**

**printf("\n %s",str2);**

**return 0;**

**}**

**void copystr(char \*dest,char \*src)**

**{**

**while(\*src!='\0')**

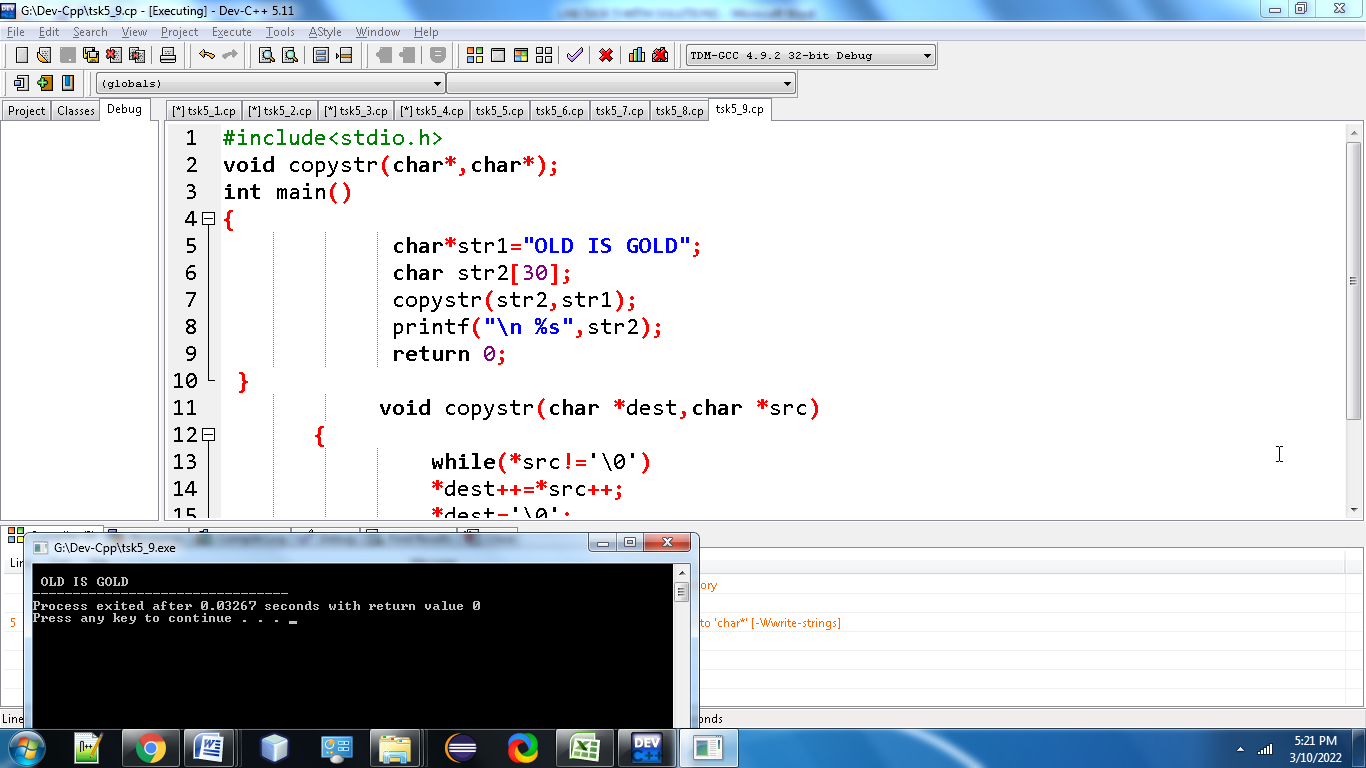
**\*dest++=\*src++;**

**\*dest='\0';**

**return;**

**}**

**Output:**

****

**10.** [**Write a C program to concatenate two strings using pointers**](https://codeforwin.org/2015/11/c-program-to-concatenate-two-strings.html#program-using-pointer)**.**

**#include <stdio.h>**

**#define MAX\_SIZE 100 // Maximum string size**

**int main()**

**{**

**char str1[MAX\_SIZE], str2[MAX\_SIZE];**

**char \* s1 = str1;**

**char \* s2 = str2;**

**printf("Enter 1st string: ");**

**gets(str1);**

**printf("Enter 2nd string: ");**

**gets(str2);**

**while(\*(++s1));**

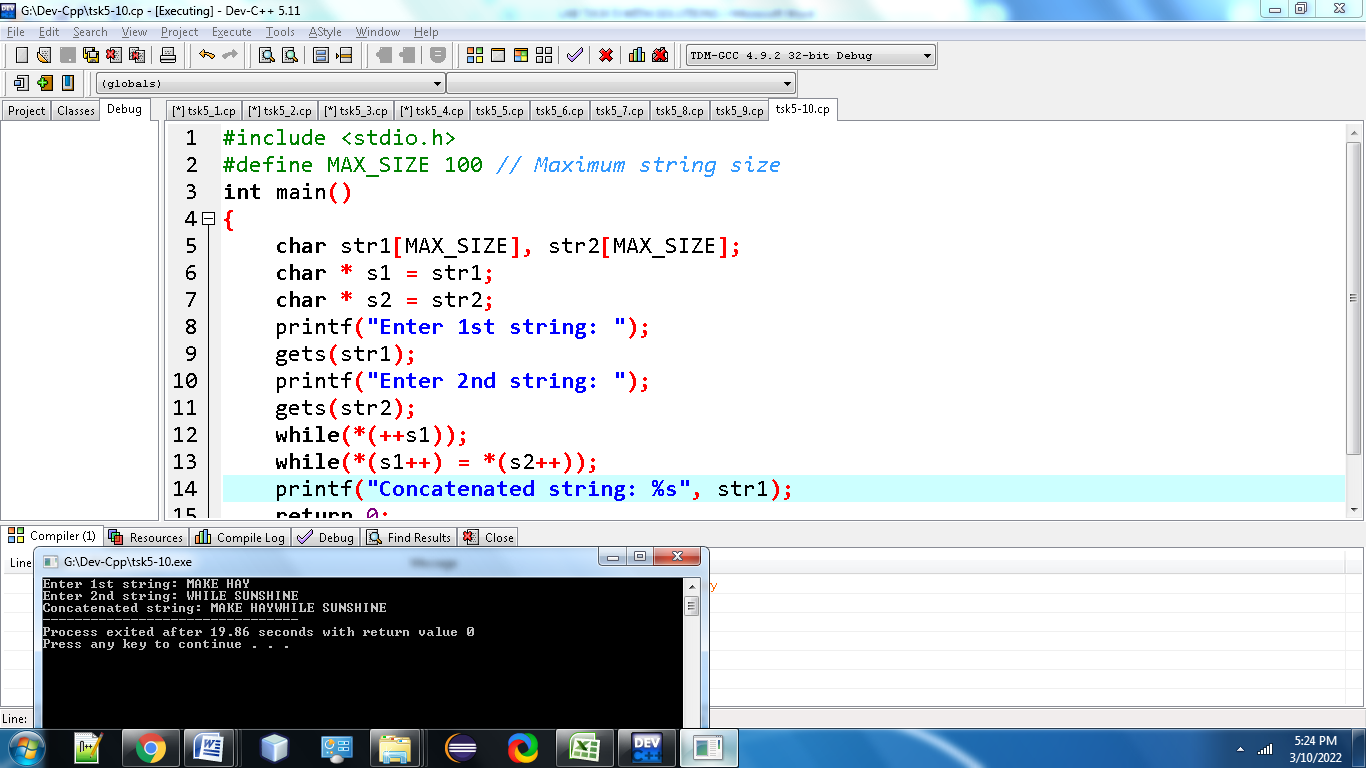
**while(\*(s1++) = \*(s2++));**

**printf("Concatenated string: %s", str1);**

**return 0;**

**}**

**Output:**

****

**11.** [**Write a C program to compare two strings using pointers**](https://codeforwin.org/2015/11/c-program-to-compare-two-strings.html#program-using-pointer)**.**

**#include<stdio.h>**

**int main()**

**{**

**char string1[50],string2[50],\*str1,\*str2;**

**int i,equal = 0;**

**printf("Enter The First String: ");**

**scanf("%s",string1);**

**printf("Enter The Second String: ");**

**scanf("%s",string2);**

**str1 = string1;**

**str2 = string2;**

**while(\*str1 == \*str2)**

**{**

**if ( \*str1 == '\0' || \*str2 == '\0' )**

**break;**

**str1++;**

**str2++;**

**}**

**if( \*str1 == '\0' && \*str2 == '\0' )**

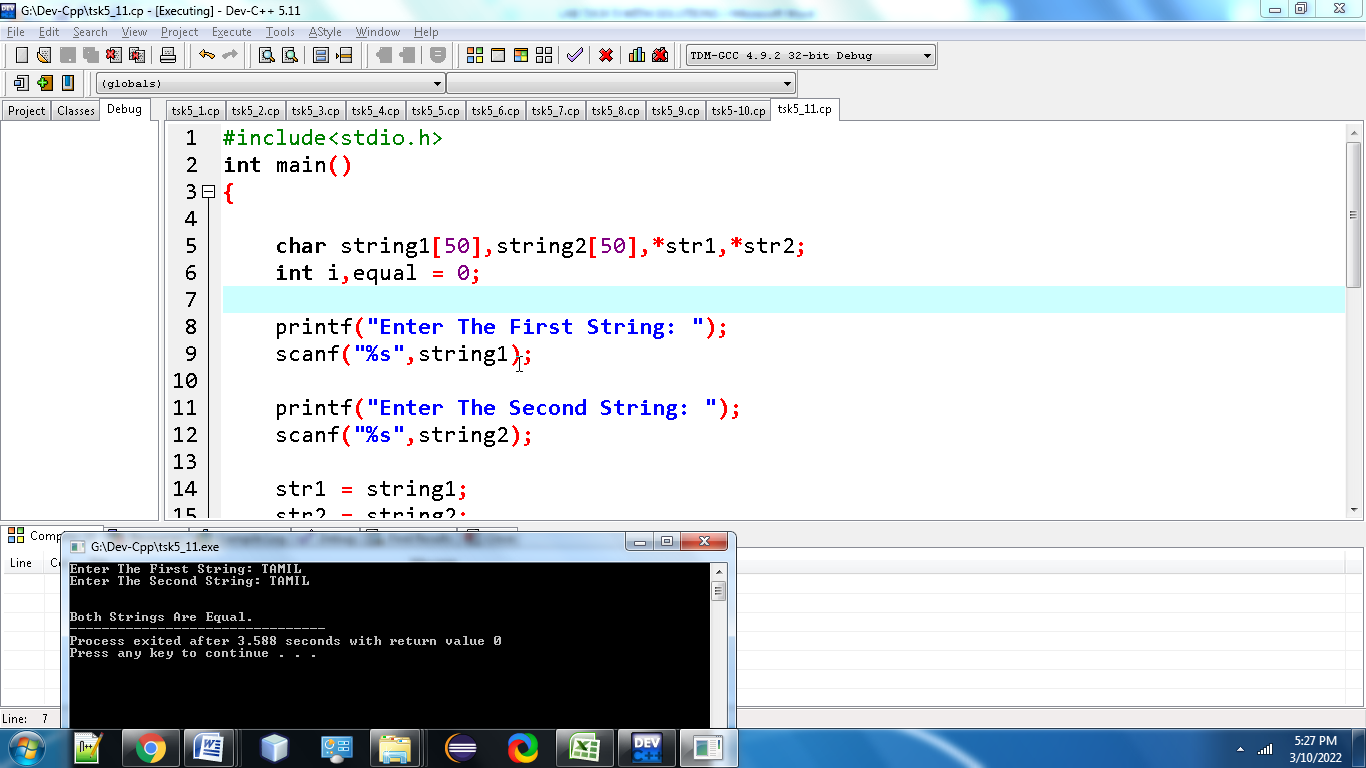
**printf("\n\nBoth Strings Are Equal.");**

**else**

**printf("\n\nBoth Strings Are Not Equal.");**

**}**

**Output:**

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