Indian Institute of Engineering Science and Technology, Shibpur Information Technology

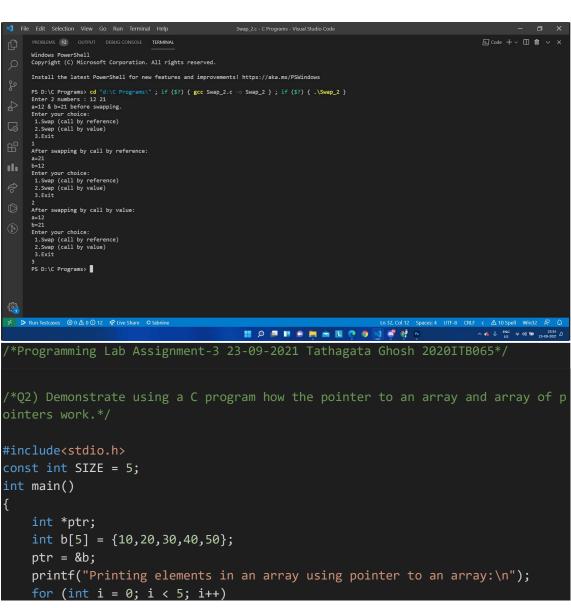
Programming Lab Assignment-3

23-09-2021

Tathagata Ghosh 2020ITB065-HY

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/*Programming Lab Assignment-3 23-09-2021 Tathagata Ghosh 2020ITB065*/
/*Q1) Write a program in C to demonstrate how to swap the values of two variab
les using a function.
Write the function in two way. One using a pass by value and another using a pa
ss by reference.*/
#include<stdio.h>
void swap( int *a , int *b )
    *a = *a + *b;
   *b = *a - *b;
    *a = *a - *b;
void swap1(int a, int b)
   int t=a;
   a=b;
   b=t;
   printf("After swapping by call by value:\n");
   printf("a=%d\nb=%d\n",a,b);
   return;
int main()
    int a , b ;
    printf("Enter 2 numbers : ");
   scanf("%d %d", &a , &b );
   int *aptr = &a ;
    int *bptr = &b ;
    printf("a=%d & b=%d before swapping.\n", *aptr , *bptr );
    int ch;
        printf("Enter your choice:\n 1.Swap (call by reference)\n 2.Swap (call
by value)\n 3.Exit\n");
        scanf("%d",&ch);
```

```
switch(ch)
{
    case 1:swap( aptr , bptr );
        printf("After swapping by call by reference:\n");
        printf("a=%d\nb=%d\n",*aptr,*bptr);
        break;
    case 2:swap1(a,b);
        break;
    case 3: break;
    default: printf("---Invalid Input---\n");
        break;
    }
} while (ch!=3);
return 0;
}
```



```
printf("b[%d]=%d\n",i, *(ptr + i));
      printf("Printing elements of an array using array of pointers:\n");
      int *a[5];
      for (int i = 0; i < SIZE; i++)</pre>
              a[i] = \&b[i];
     for (int i = 0; i < SIZE; i++)</pre>
              printf(" b[%d] = %d\n", i, *a[i]);
     return 0;

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     PROBLEMS 12 OUTPUT DEBUG CONSOLE TERMINAL
     Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.
     Install the latest PowerShell for new features and improvements! https://aka.ms/PSWindows
     PS D:\C Programs> cd "d:\C Programs\"; if ($?) { gcc Swap_2.c -o Swap_2 }; if ($?) { .\Swap_2 }

Enter 2 numbers : 12 21

a=12 8 b=21 before swapping.

Enter your choice:

1.Swap (call by reference)

2.Swap (call by value)

b[0]=30
     b[0]=10
b[1]=20
b[2]=30
b[3]=40
b[4]=50
Printing elements of an array using array of pointers:
b[0] = 10
b[1] = 20
b[2] = 30
b[3] = 40
b[4] = 50
PS D:\C Programs>
503
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```