

ASSIGNMENT 4

Q1 Write a C Program to swap 2 numbers without using third variable using pointers

Expected Output :

Enter number1 : 10

Enter number2 : 20

Before Swap : number1 is 10 and number2 is 20

After Swap : number1 is 20 and number2 is 10

```
#include<stdio.h>

void swap(int* a, int* b);

int main(){
    int a,b;
    printf("number 1: ");
    scanf("%d",&a);
    printf("number 2: ");
    scanf("%d",&b);
    swap(&a,&b);
    return 0;
}

void swap(int* a, int* b){
    *a= *a + *b;    //a=3+2=5
    *b=*a - *b;     //b=5-2=3
    *a=*a - *b;     //a=5-2=2
    printf("AFTER SWAP\nnumber 1: %d\nnumber 2: %d\n",*a,*b);
}
```

Q2 Write a C Program to swap 2 numbers with using third variable and use call by reference.

Expected Output :

Enter number1 : 50

Enter number2 : 60

Before Swap : number1 is 50 and number2 is 60

After Swap : number1 is 60 and number2 is 50

```
#include<stdio.h>

void swap(int* a, int* b);

int main(){
    int a,b;
    printf("Enter number 1: ");
    scanf("%d",&a);
    printf("Enter number 2: ");
    scanf("%d",&b);
```

```

    swap(&a,&b);
    printf("Swaped number 1: %d\nSwaped number 2: %d\n ",a,b);
    return 0;
}

void swap(int* a, int* b){
    int c;
    c=*a;
    *a=*b;
    *b=c;
}

```

Q3 Write a C program that declares and initializes (to any value you like) a char, an int, a double and a float. Your program should then print the address of, and value stored in, each of the variables. Use the format string "%u" [%p in hex] to print the addresses as unsigned integers.

Hint: You can use the character "&" to find addresses.

```

#include<stdio.h>

int main(){

    char a;
    int b;
    float c;
    double d;

    printf("enter values \nA character :");
    scanf("%c",&a);
    printf("\nAn integer :");
    scanf("%d",&b);
    printf("\nA float :");
    scanf("%f",&c);
    printf("\nA double :");
    scanf("%lf",&d);

    printf("\nCharacter address is %p and value is %c \n",&a,a);
    printf("Integer address is %p and value is %d \n",&b,b);
    printf("Float address is %p and value is %f \n",&c,c);
    printf("Double address is %p and value is %lf \n",&d,d);

    return 0;
}

```

Q4 Write a C program to declare an integer and an integer pointer to it. Initialize the integer variable. Print the value of the int variable using pointer variable.

Hint: You can use dereferencing operator *

```
#include<stdio.h>

int main(){
    int a;
    int *a1=&a;
    printf("enter the value: ");
    scanf("%d",&a);
    printf("\nvalue is : %d\n",*a1);
    return 0;
}
```