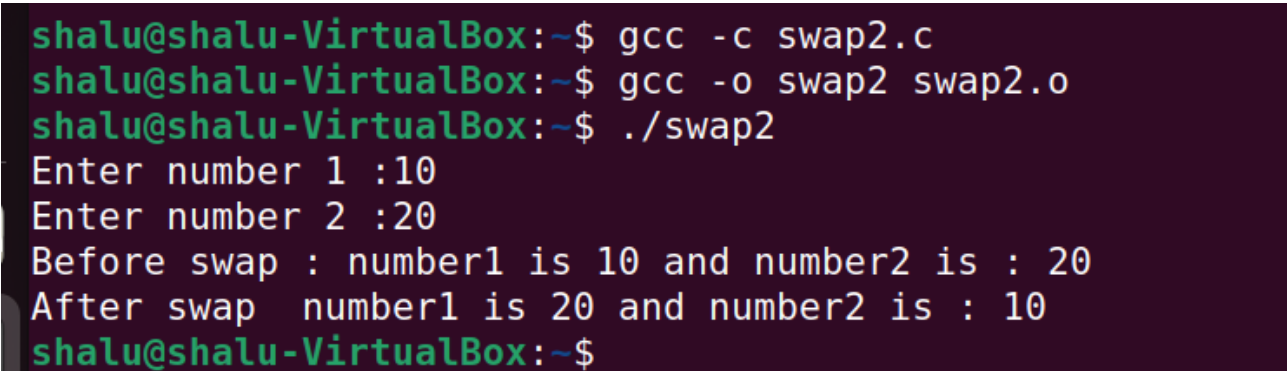


1. Write a C program to swap 2 numbers without using third variable using pointers.

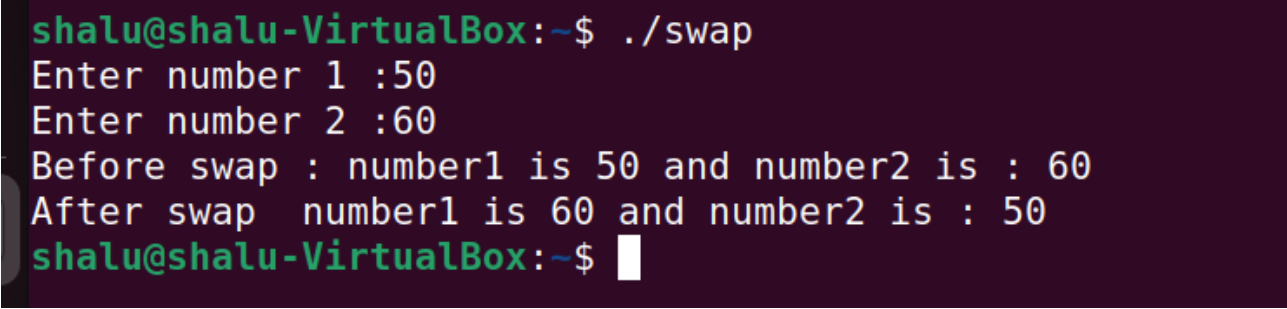
```
#include<stdio.h>
void swap(int *x,int *y)
{
    *x=*x+*y;
    *y=*x-*y;
    *x=*x-*y;
}
void main()
{
    int a,b;
    printf("Enter number 1 :");
    scanf("%d",&a);
    printf("Enter number 2 :");
    scanf("%d",&b);
    printf("Before swap : number1 is %d and number2
is : %d\n" ,a,b);
    swap(&a,&b);
    printf("After swap  number1 is %d and number2
is : %d\n",a,b);
}
```



```
shalu@shalu-VirtualBox:~$ gcc -c swap2.c
shalu@shalu-VirtualBox:~$ gcc -o swap2 swap2.o
shalu@shalu-VirtualBox:~$ ./swap2
Enter number 1 :10
Enter number 2 :20
Before swap : number1 is 10 and number2 is : 20
After swap  number1 is 20 and number2 is : 10
shalu@shalu-VirtualBox:~$
```

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

```
#include<stdio.h>
void swap(int *x,int *y)
{
    int t;
    t=*x;
    *x=*y;
    *y=t;
}
void main()
{
    int a,b;
    printf("Enter number 1 :");
    scanf("%d",&a);
    printf("Enter number 2 :");
    scanf("%d",&b);
    printf("Before swap : number1 is %d and number2 is : %d\n",a,b);
    swap(&a,&b);
    printf("After swap  number1 is %d and number2
is : %d\n",a,b);
}
```

A terminal window with a dark purple background. The prompt is 'shalu@shalu-VirtualBox:~\$'. The user enters './swap'. The program prompts 'Enter number 1 :50' and 'Enter number 2 :60'. It then displays 'Before swap : number1 is 50 and number2 is : 60' and 'After swap number1 is 60 and number2 is : 50'. The prompt returns to 'shalu@shalu-VirtualBox:~\$' with a cursor.

```
shalu@shalu-VirtualBox:~$ ./swap
Enter number 1 :50
Enter number 2 :60
Before swap : number1 is 50 and number2 is : 60
After swap  number1 is 60 and number2 is : 50
shalu@shalu-VirtualBox:~$
```

3. Write a C program that declare and initialize s a char, an int, a double and a float.

Your program should then print the address of, and the value stored in, each of the variables.

```
#include<stdio.h>
void main()
{
    char ch= 'a';
    printf("%p\n",&ch);           //printing address
    printf("%c\n",&ch);           //printing value

    int a=10;
    printf("%p\n",&a);             //printing address
    printf("%d\n",&a);             //printing value

    float e= 1.2;
    printf("%p\n",&e);             //printing address
    printf("%f\n",&e);             //printing value

    double f=1.2;
    printf("%p\n",&f);             //printing address
    printf("%lf\n",&f);            //printing value

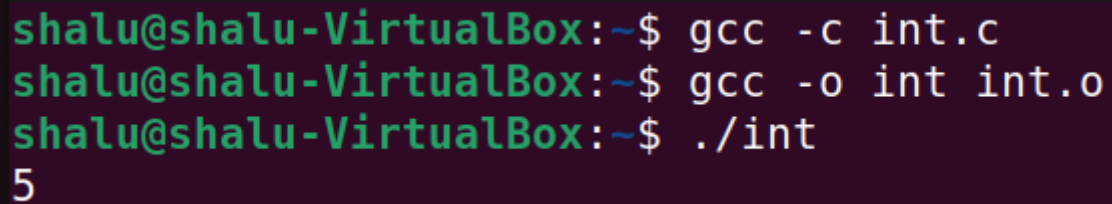
    unsigned int ui = 2;
    printf("%p\n",&ui);            //printing address
    printf("%d\n",&ui);            //printing value

}
```

```
shalu@shalu-VirtualBox:~$ gcc -c all1.c
shalu@shalu-VirtualBox:~$ gcc -o all1 all1.o
shalu@shalu-VirtualBox:~$ ./all1
0x7ffffcd166c23
a
0x7ffffcd166c24
10
0x7ffffcd166c28
1.200000
0x7ffffcd166c30
1.200000
0x7ffffcd166c2c
2
shalu@shalu-VirtualBox:~$
```

4. Write a C program to declare an integer and an integer pointer to it.

```
#include<stdio.h>
void main()
{
    int a,*p;
    p=&a;
    a=5;
    printf("%d\n",*p);
}
```



```
shalu@shalu-VirtualBox:~$ gcc -c int.c
shalu@shalu-VirtualBox:~$ gcc -o int int.o
shalu@shalu-VirtualBox:~$ ./int
5
```