Pointer assignment
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1. Write a function to swap values of two in variables of calling function. (TSRS).

```c
#include<stdio.h>
void swap(int*,int*);
int main ()
{
    int a,b;
    printf("Enter two number\n");
    scanf("%d%d",&a,&b);
    swap(&a,&b);
    printf("%d%d",a,b);
    printf("\n");
    return 0;
}
void swap(int*p,int*q)
{
    int t;
    t=*p;
    *p=*q;
    *q=t;

}
#include<stdio.h>
void swap (char**,char**);
int main(){
   char *str1="sumit";
   char *str2="Gupta";
   printf("%s:%s\n",str1,str2);
   /*printf("Enter the string\n");
   gets(str1);
   printf("enter the second string\n");
   gets(str2);*/
   swap(&str1,&str2);
   printf("%s:%s\n",str1,str2);
   return 0;
}
void swap(char**ptr1,char**ptr2)
{
    char *t;
    t=*ptr1;
    *ptr1=*ptr2;
    *ptr2=t;
}
#include <stdio.h>
void sort(int n, int* ptr)
{
    int i, j, t;

    for (i = 0; i < n; i++)
    {
    for (j = i + 1; j < n; j++) {
   if (*(ptr + j) < *(ptr + i)) {
  t = *(ptr + i);
  *(ptr + i) = *(ptr + j);
    *(ptr + j) = t;
            }
        }
    }
    for (i = 0; i < n; i++)
        printf("%d ", *(ptr + i));
}
int main()
{
    int n = 5;
    int arr[] = { 0, 23, 14, 12, 9 };
    sort(n, arr);
    return 0;
}
#include <stdio.h>
int main()
```

```c
{
   int* ab;
   int m;
   m=29;
    printf("\n\n Pointer : How to  handle the pointers in the program :\n");
    printf("-------------------------------------------------------------\n");
    printf(" Here in the declaration ab = int pointer, int m= 29\n\n");

   printf(" Address of m : %p\n",&m);
   printf(" Value of m : %d\n\n",m);
   ab=&m;
   printf(" Now ab is assigned with the address of m.\n");
   printf(" Address of pointer ab : %p\n",ab);
   printf(" Content of pointer ab : %d\n\n",*ab);
   m=34;
   printf(" The value of m assigned to 34 now.\n");
   printf(" Address of pointer ab : %p\n",ab);
   printf(" Content of pointer ab : %d\n\n",*ab);
   *ab=7;
   printf(" The pointer variable ab is assigned the value 7 now.\n");
   printf(" Address of m : %p\n",&m);//as ab contain the address of m
                                     //so *ab changed the value of m and now m become 7
   printf(" Value of m : %d\n\n",m);
   return 0;
}

/*5. Write a program to find the maximum number between two numbers using a pointer*/
#include<stdio.h>
int main()
{
int a,b;
int *ptr1,*ptr2;
printf("Enter two number\n");
scanf("%d%d",&a,&b);
ptr1=&a;
ptr2=&b;
if(*ptr1>*ptr2)
{
printf("%d",*ptr1);
}
else{
    printf("%d",*ptr2);
}
return 0;
}

#include<stdio.h>
int  main ()
{
    char str[20],*ptr;
    int i=0;
    printf("Enter a string \n");
    gets(str);
      ptr = str;
  while (*ptr != '\0') {
    i++;
    ptr++;
  }
  printf("Length of String : %d", i);
  return 0;
}

#include <stdio.h>
int main()
{
    char str[100];
    char *p;
    int  vCount=0,cCount=0;

    printf("Enter any string: ");
    fgets(str, 100, stdin);
```

```c
    //assign base address of char array to pointer
```

```
    p=str;
```

```
    //'\0' signifies end of the string
    while(*p!='\0')
    {
        if(*p=='A' ||*p=='E' ||*p=='I' ||*p=='O' ||*p=='U'
                ||*p=='a' ||*p=='e' ||*p=='i' ||*p=='o' ||*p=='u')
            vCount++;
        else
            cCount++;
        //increase the pointer, to point next character
        p++;
    }
```

```
    printf("Number of Vowels in String: %d\n",vCount);
    printf("Number of Consonants in String: %d",cCount);
    return 0;
}

/*
 * C program to read N integers and store them in an array A.
 * Find the sum of all these elements using pointer.
 */

#include <stdio.h>
#include <malloc.h>

void main()
{
    int i, n, sum = 0;
    int *a;

        printf("Enter the size of array A \n");
    scanf("%d", &n);

        a = (int *) malloc(n * sizeof(int));

        printf("Enter Elements of the List \n");
    for (i = 0; i < n; i++)
        {
        scanf("%d", a + i);
    }

        /*  Compute the sum of all elements in the given array */

        for (i = 0; i < n; i++)
        {
        sum = sum + *(a + i);
               /* this *(a+i) is used to access the value stored at the address*/
    }

        printf("Sum of all elements in array = %d\n", sum);
        return 0;
}
```