

**Q1. Write a function to swap values of two in variables of calling function. (TSRN)**

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
void swap(int *x, int *y);
```

```
int main()
```

```
{
```

```
    int a, b;
```

```
    printf("Enter a & b = ");
```

```
    scanf("%d %d", &a, &b);
```

```
    swap(&a,&b);
```

```
    printf("a = %d & b = %d",a,b);
```

```
}
```

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

```
{
```

```
    int tmp;
```

```
    tmp = *x;
```

```
    *x = *y;
```

```
    *y = tmp;
```

```
}
```

**Q2. Write a function to swap strings of two char arrays of calling functions. (TSRN)**

```
#include <stdio.h>
#include <conio.h>
#include <string.h>

void swap(char *, char *);

int main()
{
    char a[20], b[20];

    printf("Enter string a = ");
    fgets(a, 20, stdin);

    printf("Enter string b = ");
    fgets(b, 20, stdin);

    swap(a,b);

    printf("a = %s",a);
    printf("b = %s",b);
}

void swap(char *s1, char *s2)
{
    char tmp[20];
    strcpy(tmp,s1);
    strcpy(s1,s2);
    strcpy(s2,tmp);
}
```

Q3. Write a function to sort an array of int type values. [ void sort(int \*ptr,int size); ]

```
#include <stdio.h>
```

```
#include <conio.h>
```

```
#include <string.h>
```

```
void sort(int *, int);
```

```
int main()
```

```
{
```

```
    int a[10] = {8,2,4,6,9,3,0,7,1,5}; //{0,8,4,6,9,3,2,7,1,5}
```

```
    sort(a,10);
```

```
    for(int i=0; i<10;i++)
```

```
    {
```

```
        printf("%d ",a[i]);
```

```
    }
```

```
}
```

```
void sort(int *ptr, int size)
```

```
{
```

```
    for(int i = 0; i < size; i++)
```

```
    {
```

```
        for(int j = i+1; j < size; j++)
```

```
        {
```

```
            if(ptr[i] > ptr[j])
```

```
            {
```

```
                int tmp = ptr[i];
```

```
                ptr[i] = ptr[j];
```

```
                ptr[j] = tmp;
```

}

}

}

}

Q4. Write a program in C to demonstrate how to handle the pointers in the program.

```
#include <stdio.h>
#include <conio.h>

int main()
{
    printf("We Create Int Type of Array\n\n");
    int a[10] = {8,2,4,6,9,3,0,7,1,5};

    printf("Accessing Array Element\n");
    for(int i = 0; i < 10; i++)
    {
        printf("%d ",a[i]);
    }
    printf("\n-----\n\n");

    printf("We Create Int Type of Pointer -> int *ptr\n\n");
    int *ptr;
    printf("\n-----\n\n");

    printf("Store Address of Array to the Pointer -> ptr = a\n\n");
    ptr = a;
    printf("\n-----\n\n");

    printf("Accessing Array Element Using Pointer\n\n");
    for(int i = 0; i < 10; i++)
    {
        printf("%d ",*(ptr+i));
    }
}
```

Q5. Write a program to find the maximum number between two numbers using a pointer

```
#include <stdio.h>
#include <conio.h>

int main()
{
    int num1, num2;

    printf("Enter Number for num1 & num2 = ");
    scanf("%d%d", &num1, &num2);

    int *p1 = &num1, *p2 = &num2;

    if(*p1 > *p2)
        printf("%d is greater", *p1);
    else if(*p1 < *p2)
        printf("%d is greater", *p2);
    else
        printf("Both %d and %d are same", *p1, *p2);

}
```

Q6. Write a program to calculate the length of the string using a pointer

```
#include <stdio.h>
#include <conio.h>

int main()
{
    char str[20];
    char *ptr = str;
    int i=0;

    printf("Enter String >>> ");
    fgets(str, 20, stdin);

    for(; ptr[i]; i++);

    printf("\nLength of string >>> %d\n", i-1);
}
```

Q7. Write a program to count the number of vowels and consonants in a string using a pointer.

```
#include <stdio.h>

#include <conio.h>

int main()
{
    char str[20];
    char *ptr = str;
    int i = 0, vowel = 0, space = 0;

    printf("Enter String = ");
    fgets(str, 20, stdin);

    for(; ptr[i]; i++)
    {
        if(ptr[i] == ' ')
        {
            space++;
        }
        else if((ptr[i] == 'a') || (ptr[i] == 'A') || (ptr[i] == 'e') || (ptr[i] == 'E') || (ptr[i] == 'i') || (ptr[i] == 'I') || (ptr[i] == 'o') || (ptr[i] == 'O') || (ptr[i] == 'u') || (ptr[i] == 'U'))
        {
            vowel++;
        }
    }

    printf("\nvowels = %d & consonants = %d\n", vowel, (i - space - 1)-vowel);

}
```



Q8. Write a program to compute the sum of all elements in an array using pointers.

```
#include <stdio.h>
#include <conio.h>

int main()
{
    int arr[10] = {1,2,3,4,5,6,7,8,9,10};
    int *ptr = arr;
    int sum = 0;

    for(int i = 0; i < 10; i++)
    {
        sum = *(ptr+i) + sum;
    }

    printf("Sum = %d", sum);

}
```

Q9. Write a program to print the elements of an array in reverse order.

```
#include <stdio.h>
#include <conio.h>

int main()
{
    int arr[10] = {1,2,3,4,5,6,7,8,9,10};
    int *ptr = arr;

    for(int i = 9; i >= 0; i--)
    {
        printf("%d ", *(ptr+i));
    }

}
```

Q10. Write a program to print a string in reverse using a pointer

```
#include <stdio.h>
#include <conio.h>

int main()
{
    char arr[13] = "Hello World";
    char *ptr = arr;

    for(int i = 10; i >= 0; i--)
    {
        printf("%c", *(ptr+i));
    }

}
```