

Practical No : 1

Problem Statement : Introduction to pointers. Write a C program to swap two values using Call by Value and Call by reference.

Code :

```
#include<stdio.h>

void swapf(int x, int y){
    int c;

    c=x;
    x=y;
    y=c;

    printf("Enter the value of x:%d",x);
    printf("\nEnter the value of y:%d",y);
}

void bubble(int *a, int *b){
    int c;

    c=*a;
    *a=*b;
    *b=c;
}

void main(){
    int a,b;

    printf("Enter the value of a:");
    scanf("%d",&a);

    printf("Enter the value of b:");
    scanf("%d",&b);

    swapf(a,b);
    bubble(&a,&b);

    printf("\nEnter the value of a:%d",a);
    printf("\nEnter the value of b:%d",b);
}
```

}

Input :

```
PS D:\LANGUAGE\C\DSA> gcc .\08_pointer.c
PS D:\LANGUAGE\C\DSA> ./a.exe
Enter the value of a:12
Enter the value of b:24
```

Output :

```
Enter the value of x:24
Enter the value of y:12
Enter the value of a:24
Enter the value of b:12
```

Practical No : 2

Problem Statement :

Code :

//paste your code here.

Input :

Output :

Practical No : 3

Problem Statement : Implement a program for stack that performs following operations using array.

(a) PUSH (b) POP (c) PEEP (d) CHANGE(Replace top of stack value) (e) DISPLAY

Code :

```
#include<stdio.h>
#define size 5
int a[size],x,top=-1,c;

int isfull()
{
    if(top==size-1) return 1;
    else return 0;
}
int isempty()
{
    if(top==-1) return 1;
    else return 0;
}
void push(int x)
{
    if(isfull())
    {
        printf("\nArray is full!!");
    }
    else{
        top++;
        a[top]=x;
    }
}
void peep()
{
    x=a[top];
    printf("The top value of array is: %d",x);
}
int pop()
{
    if(isempty()){
        printf("Array is empty.");}
```

```
        else{
            x=a[top];
            top--;
        }
    }
void display()
{
    int i;
    if(!isempty()){
        printf("The Elements Of Array: ");
        for(i=top;i>=0;i--){
            printf("%d ",a[i]);
        }
    }
}

void main()
{
    do
    {
        printf("\nStack Operations:");
        printf("\n1.Push \n2.Peep \n3.Pop \n4.Display");
        printf("\nEnter your choice:");
        scanf("%d",&c);

        switch(c)
        {
            case 1:
                printf("\nEnter The value of Element:");
                scanf("%d",&x);
                push(x);
                break;
            case 2:
                peep();
                break;
            case 3:
                pop();
                break;
            case 4:
                display();
                break;
        }
    }
}
```

```
    }  
    } while(c!=0);  
}
```

Input :

```
Stack Operations:  
1.Push  
2.Peep  
3.Pop  
4.Display  
Enter your choice:1  
  
Enter The value of Element:12  
Enter The value of Element:23  
Enter The value of Element:43
```

Output :

```
Stack Operations:  
1.Push  
2.Peep  
3.Pop  
4.Display  
Enter your choice:4  
The Elements Of Array: 43 23 12
```