

## **PRACTICAL-3**

Implement a program for stack that performs following operations using array.  
PUSH, POP, DISPLAY, PEEP, CHANGE

### **SOURCE CODE:**

```
#include<stdio.h>
#define size 5
struct stack
{
    int a[size],top;
    int temp[size], tos;
}s;
void push(int item)
{
    s.a[++s.top] = item;
}
int pop()
{
    return s.a[s.top--];
}
void display()
{
    int i;
    printf("\nThe stack contains: ");
    for(i = s.top; i>=0; i--)
    {
        printf("\t%d", s.a[i]);
    }
}
void peep()
{
    printf("\n\tTop : %d", s.top);
    printf("\n\tValue: %d",s.a[s.top]);
}
void change(int row, int new_element)
{
    int i;
    int j = -1;
    printf("\n\tTop: %d", s.top);

    for(i=s.top; i>row; i--)
    {
        s.temp[++j] = s.a[s.top--];
    }
}
```

```

    }
    s.a[s.top] = new_element;

    for(i = j; i>-1; i--)
    {
        s.a[++s.top] = s.temp[j--];
    }
}

int main()
{
    s.top = -1;
    int item, choice, row, new_element;
    char ans;
    do{
        printf("\n-----");
        printf("\nSTACK IMPLEMENTATION PROGRAM\n");
        printf("-----");
        printf("\n    1. Push\n    2. Pop\n    3. Display\n    4. Peep\n 5.
Change \n    6. Exit\n");
        printf("-----\n");
        printf("\n Enter your choice: ");
        scanf("%d", &choice);
        switch(choice){

            case 1:
                if(s.top >= size-1)
                {
                    printf("\nStack overflow..\n");
                    break;
                }
                printf("\nEnter item to be pushed: ");
                scanf("%d", &item);
                push(item);
                break;

            case 2:
                if(s.top == -1)
                {
                    printf("\n..Stack underflow..\n");
                    break;
                }
                pop();
                break;

            case 3:
                display();
                break;

            case 4:

```

```

        peep();
        break;

    case 5:
        printf("\n\tEnter row no : ");
        scanf("%d",&row);
        printf("\n\tEnter new element: ");
        scanf("%d", &new_element);
        change(row, new_element );
        break;

    case 6:
        return 0;
    }
}while(choice != 6);

return 0;
}

```

### OUTPUT:

```

-----
STACK IMPLEMENTATION PROGRAM
-----
    1. Push
    2. Pop
    3. Display
    4. Peep
    5. Change
    6. Exit
-----

Enter your choice: 1
Enter item to be pushed: 5

```

1)PUSH

```

-----
STACK IMPLEMENTATION PROGRAM
-----
    1. Push
    2. Pop
    3. Display
    4. Peep
    5. Change
    6. Exit
-----

Enter your choice: 3

The stack contains:
    2
    5

```

2)DISPLAY

```
-----  
STACK IMPLEMENTATION PROGRAM  
-----  
    1. Push  
    2. Pop  
    3. Display  
    4. Peep  
5. Change  
    6. Exit  
-----  
  
Enter your choice: 5  
  
    Enter row no : 1  
  
    Enter new element: 4  
  
    Top: 0  
-----
```

3)CHANGE

```
-----  
STACK IMPLEMENTATION PROGRAM  
-----  
    1. Push  
    2. Pop  
    3. Display  
    4. Peep  
5. Change  
    6. Exit  
-----  
  
Enter your choice: 4  
  
    Top : 0  
    Value: 4
```

4)PEEP