

Write a program to simulate the working of stack using an array with the following :

- a) Push**
- b) Pop**
- c) Display**

The program should print appropriate message for stack overflow.

```
#include<stdio.h>
#include<stdlib.h>
#include<conio.h>
#define STACK_SIZE 5
int top=-1;
int s[10];
int item;
void push()
{
    if(top == STACK_SIZE - 1)
    {
        printf("Stack Overflow \n");
        return;
    }
    top = top +1;
    s[top] = item;
}
int pop()
{
    if(top == - 1)
        return - 1;
```

```

        return s[top--];
    }
void display()
{
    int i;
    if(top == - 1)
    {
        printf("Stack is empty \n");
        return;
    }
    printf("Contents of the stack are: \n");
    for(i=top;i>=0;i--)
    {
        printf("%d \n", s[i]);
    }
}
void main()
{
    int item_deleted, choice;
    for(;;)
    {
        printf("\n1:Push \n2:Pop \n3:Display \n4:Exit \n");
        printf("Enter the choice : \n");
        scanf("%d", &choice);
        switch(choice)
        {
            case 1: printf("Enter the item to be inserted \n");
                    scanf("%d", &item);
                    push();

```

```
        break;
    case 2: item_deleted = pop() ;
        if(item_deleted == - 1)
            printf("Stack is empty \n");
        else
            printf("Item deleted is %d \n", item_deleted);
        break;
    case 3: display();
        break;
    default:exit(0);
}

}

getch();

}
```

D:\Documents\ds1.exe

```
1:Push
2:Pop
3:Display
4:Exit
Enter the choice :
1
Enter the item to be inserted
200
```

```
1:Push
2:Pop
3:Display
4:Exit
Enter the choice :
2
Item deleted is 200
```

```
1:Push
2:Pop
3:Display
4:Exit
Enter the choice :
3
Stack is empty
```

```
1:Push
2:Pop
3:Display
4:Exit
Enter the choice :
1
Enter the item to be inserted
30
```

```
1:Push
2:Pop
3:Display
4:Exit
Enter the choice :
3
Contents of the stack are:
30
```

```
1:Push
2:Pop
3:Display
4:Exit
Enter the choice :
```

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Enter the choice :

3

Contents of the stack are:

30

1:Push

2:Pop

3:Display

4:Exit

Enter the choice :

1

Enter the item to be inserted

20

1:Push

2:Pop

3:Display

4:Exit

Enter the choice :

1

Enter the item to be inserted

30

1:Push

2:Pop

3:Display

4:Exit

Enter the choice :

1

Enter the item to be inserted

40

1:Push

2:Pop

3:Display

4:Exit

Enter the choice :

3

Contents of the stack are:

40

30

20

30

1:Push

2:Pop

3:Display

4:Exit

Enter the choice :