

## LAB 1 program

- NAP to simulate the working of Stack using an array,
- push
- pop
- display

Program should print appropriate message for Stack overflow and underflow.

```
#include < stdio.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 += 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;
}
```

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Date: / /

```
for(i = top; i >= 0; i--) {
```

```
    printf("%d\n", sc[i]);
```

}

{

```
void main()
```

{

```
int item_delet
```

```
int choice;
```

```
for(;;)
```

```
{
```

```
    printf("1: Push 2: Pop 3: display
```

```
        4: exit 5:");
```

```
    printf("Enter the choice\n");
```

```
    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("Deleted item is %d\n", item\_deleted);

}

break;

case 3:

display();

break;

default

case 4:

do exit(0);

}

OUTPUT:

- 1: Push
- 2: Pop
- 3: display
- 4: exit

Enter your choice:

1

enter the item to be inserted

25

- 1: Push
- 2: pop
- 3: display
- 4: exit

Enter your choice:

1

enter the item to be inserted

26

- 1: Push
- 2: pop
- 3: display
- 4: exit

Enter your choice:

1

enter the item to be inserted

27

- 1: Push
- 2: pop
- 3: display
- 4: exit

Date \_\_\_\_\_

Enter your choice  
3

Elements of Stack are

27

26

25

- 1: Push
- 2: pop
- 3: display
- 4: exit

Enter your choice

2

Deleted item is 27

- 1: Push
- 2: pop
- 3: display
- 4: exit

Enter your choice

2

Deleted item is 26

- 1: Push
- 2: pop
- 3: display
- 4: exit

Enter your choice

2

Deleted item is 25

Date / /

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice

2

STACK is empty

- 1: push
- 2: pop
- 3: display
- 4: exit

Enter your choice

3

Elements of Stack are

STACK IS EMPTY NO ITEM CAN BE  
PRINTED

- 1: push
- 2: pop
- 3: display
- 4: exit

4.