store
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Lab Program : 1

1) WAP - to simulate the working of stack, using an array with :

a) Push
b) Pop
c) Display.

The program should print messeye for stack over / underflow

Code :

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

#define N 5

int top = -1, stack [N];
void push()
void pop()
void display()

void push()
{
    int a;

if (top == N-1)
{
    printf ("stack overflow");
}
else
{
```

```
        printf ("\n Enter the element to be added");
        scanf ("%d", &a);
        top = top + 1
        stack [top] = a;
    }

}

void pop()
{
        if (top == -1)
        {
            printf ("Stack underflow");
        }
        else
            printf ("\n The deleted element is :");
            top = top - 1;
    }
}

Void display ()
{
        int i;
        if (top == -1)
        {
            printf ("The stack is empty");
        }
        else
        {
            printf ("\n The stack is : \n");
            for (i = top , i >0; i--)
            printf ("%d\n", stack [i]);
        }
}
```

```
void main()
{
    int choice;
    for(;;)
    {
        printf("\n ____ Menu ____");
        printf("\n1) Push \n 2) Pop \n3) Display
                \n4) Exit");
        printf("Enter your choice (1-4)");
        scanf("%d", &choice);

        switch (choice)
        {
            case 1: push();
            break;
            case 2: pop();
            break;
            case 3: display();
            break
            case 4 : exit(0);
        }
    }
}
```

Output :

Stack Operations

1) Push
2) Pop
3) Display
4) Exit

Enter your choice ~~to be added~~ (1-4) : 1

Enter element to be added : 20

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1- 4)

Enter element to be added : 22

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 1

Enter your element to be added : 24

Stack operations :

1) Push
2) Pop
3) Display
4) Exit
Enter your choice : 3

The stack is -
24
22
20

store
67 ____/____

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 1

Stack overflow

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 2

The deleted element is : 24

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 2

The deleted element is : 22

Stack operations

1) Push

2) pop
3) Display
4) Exit
Enter your choice (1-4) : 2

The deleted element is : 20

Stack Operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 2

Stack underflow

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 3

Stack is empty.

Stack operations

1) Push
2) Pop
3) Display
4) Exit
Enter your choice (1-4) : 4