```
        printf("%d is popped", item);
    }
} void peek(){
    if (top==-1){
        printf ("Underflow");
    }
    else{
        printf ("%d", stack[top]);
    }
} void main(){
    int stack[N];
    int top=-1;
    int a;
    do{
      printf ("\n enter 1,2,3, to choose push, pop,
              peek operations respectively");
      scanf("%d", &a);
      switch(a){
          case 1:
              push();
              break;
          case 2:
              pop();
              break;
          case 3:
              peek();
              break;
          default:
              printf("Invalid Input");
              break;
      }
```

olp:-

Enter
oper
enter
Now
ente
res
(3
ent
re

29/9/23

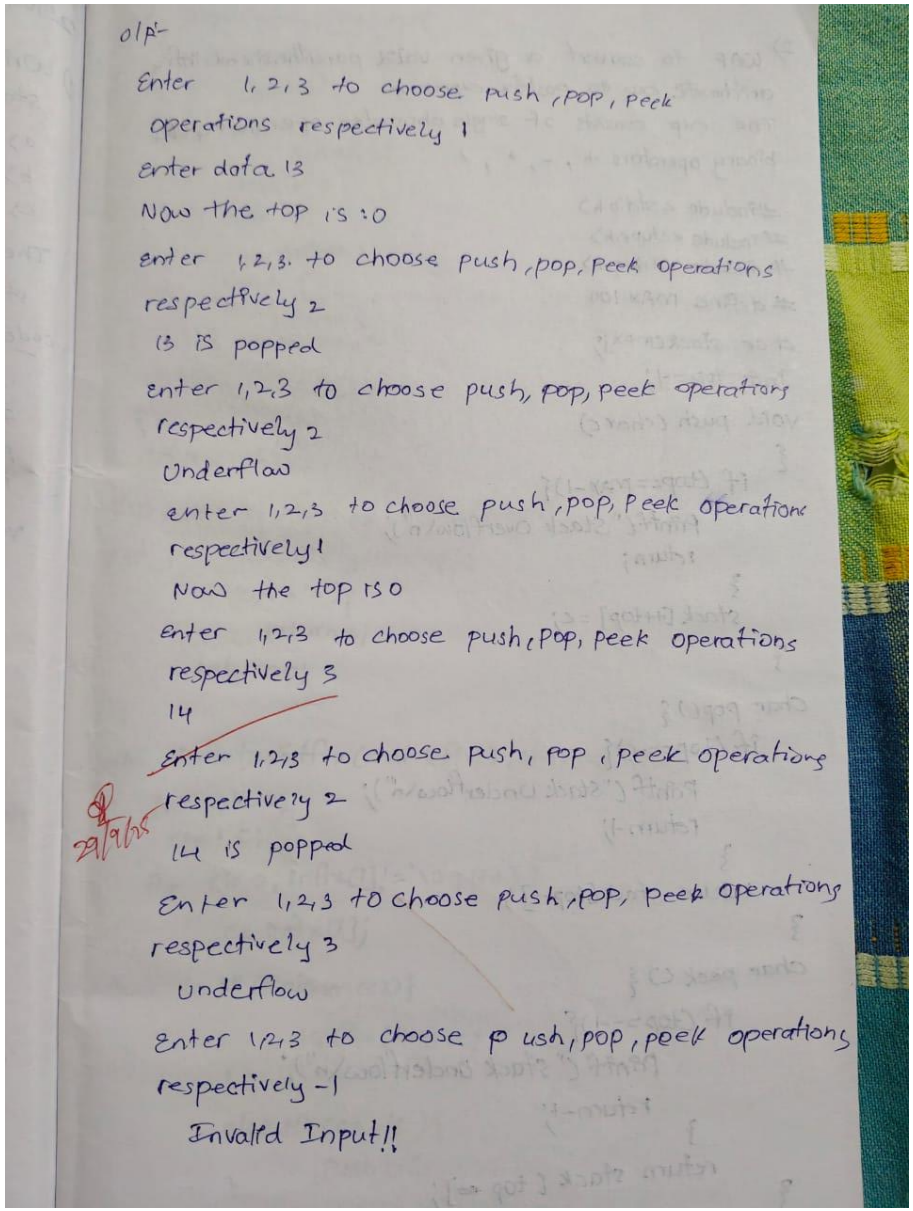
29/09/2023

1) 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, stack underflow

code:-

```
#include <stdio.h>
# define N 5
int stack[N];
int top=-1;
void push(){
    int x;
    printf ("enter data: ");
    scanf ("%d", &x);
    if (top==N-1){
        printf("Overflow");
    }
    else{
        top++;
        stack [top]=x;
        printf ("Now the top is %d", top);
    }
}
void pop(){
    int item;
    if (top==-1){
        printf ("%d underflow", item);
    } else{
```



o/p-

Enter 1, 2, 3 to choose push, pop, peek operations respectively 1

enter data 13

Now the top is :0

enter 1, 2, 3. to choose push, pop, Peek operations respectively 2

13 is popped

enter 1, 2, 3 to choose push, pop, peek operations respectively 2

Underflow

enter 1, 2, 3 to choose push, pop, Peek operations respectively 1

Now the top is 0

enter 1, 2, 3 to choose push, Pop, peek operations respectively 3

14

Enter 1, 2, 3 to choose push, pop, peek operations respectively 2

14 is popped

Enter 1, 2, 3 to choose push, pop, peek operations respectively 3

underflow

Enter 1, 2, 3 to choose push, pop, peek operations respectively -1

Invalid Input!!