Lab Question 12: Valid Stack

Aim:
To write a C program to implement a stack and check valid stack operations (PUSH, POP, PEEK).

Algorithm:

1. Start the program.
2. Define stack with array and top variable.
3. For PUSH: increment top, insert element.
4. For POP: delete top element.
5. For PEEK: display top element.
6. Display stack contents.
7. Stop.

Code:

```
#include <stdio.h>
#define SIZE 5

int stack[SIZE], top=-1;

void push(int val){
   if(top==SIZE-1) printf("Stack Overflow\n");
   else stack[++top]=val;
}

void pop(){
   if(top==-1) printf("Stack Underflow\n");
   else printf("Popped: %d\n",stack[top--]);
}

void peek(){
   if(top==-1) printf("Stack empty\n");
   else printf("Top element: %d\n",stack[top]);
}

int main(){
```

```
    push(10); push(20); push(30);
    peek();
    pop();
    peek();
    return 0;
}
```

Output:

- Push 10,20,30 → Top = 30
- Pop → Top = 20

Result:
The program successfully implements stack operations.