Output = 9

Example 2:
Input: nums = [1, 2, 3, 4]
Output: 0

22/9/25

Lab Program - 1.

1) To perform push, pop, peek operation ~~in stack~~ using an array to show working of stack.

```
#include<stdio.h>
#define N 5
int stack[N];
int top = -1;
void push()
{
    int x;
    printf("Enter data to be inserted push:\n");
    scanf("%d", &x);
    if(top == N-1)
    {
        printf("stack overflow\n");
    }
    else
    {
        top++;
        stack[top] = x;
        printf("%d is inserted into stack\n", x);
    }
}
void pop()
{
    int item;
    if(top == -1)
    {
```

```
    printf("Stack Underflow");
}
else
{
    item = stack[top];
    top--;
    printf("%d is deleted from stack\n",
    item);
}
}
void peek()
{
  if(top==-1)
  {
    printf("Stack Underflow");
  }
  else
  {
    printf("%d is the top most element
    of the stack\n", stack[top]);
  }
}
void main()
{
  int choice;
  while(1)
  {
    printf("Enter option 1,2,3 or 4 to
    perform push, pop, peek or to exit
    operation\n");
    scanf("%d", &choice);
    switch(choice)
    {
```

```
        case 1:
            push();
            break;
        case 2:
            pop();
            break;
        case 3:
            peek();
            break;
    }
    if (choice == 4)
    {
        printf("Done");
        break;
    }
}
```

Output:

Enter option 1, 2, 3, or 4 to perform push, pop, peek or exit operation:

Enter data to be inserted:

4

4 is inserted into stack

Enter option 1, 2, 3, or 4 to perform push, pop, peek or exit operation:

1

Enter data to be inserted:

5

5 is inserted into stack

Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation

2
~~Enter data to be~~
5 is deleted from stack
Enter ~~data~~ option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
3
4 is the top most element of the stack
Enter option 1, 2, 3 or 4 ~~for~~ to perform push, pop, peek or exit operation:
2
4 is deleted from stack
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
2
Stack Underflow
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
3
Stack Underflow
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
1
Enter data to be inserted:
10
10 is inserted into stack
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
1
Enter data to be inserted:
11
11 is inserted into stack
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:

7

1
Enter data to be inserted:
12
12 is inserted into stack
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
1
Enter data to be inserted:
13
13 is inserted into stack
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
1
Enter data to be inserted:
14
14 is inserted into stack
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
1
Enter data to be inserted:
15
Stack Overflow
Enter option 1, 2, 3 or 4 to perform push, pop, peek or exit operation:
4
Done

29/9/18